Person	City	State	Organization	Who Referred	Special Expertise Needed	Comment	CV Provided
Anastas, Paul	New Haven	CT	Yale University	Dr. Julie Zimmerman, Yale University	Risk assessment; Sustainability; Chemical safety; Green chemistry	Interested	Not Provided
Anderson, Henry	Madison	WI	Wisconsin Division of Public Health	Self	Health sciences; Medicine; Public health; Risk assessment; Air quality; Drinking water; Epidemiological risk analyses; Community environmental health	Interested	Yes
Andrews, Rodney	Lexington	KY	University of Kentucky	Mr. David Melanson, University of Kentucky	Engineering; Energy and the environment; Water quantity and reuse	Interested	Yes
Aneja, Viney	Raleigh	NC	North Carolina State University	Dr. Joseph Rudek, EDF	Atmospheric sciences	Interested	Yes
Bandichhor, Rakeshwar	Hyderabad	India	Dr. Reddy's Laboratories	Caroline Trupp Gil, American Chemical Society	Medicine; Sustainability; Chemical safety; Waste management	ForeignNational / Interested	Not Provided
Barnett, Mark	Auburn	AL	Auburn University	Dr. Andrzej Nowak, Auburn University	Engineering; Geochemistry; Hydrology; Hydrogeology; Public health; Risk assessment; Drinking water; Energy and the environment; Water quality; Water quantity and reuse; Community environmental health; Sustainability; Waste management	Interested	Yes
Barton, Charles	Sewickley	PA	Valspar Corporation	self	Health sciences; Public health; Risk assessment; Toxicology	Interested	Yes
Belzer, Richard	Mt. Vernon	VA	Independent consultant	Self	Benefit-cost analysis; Economics; Risk assessment; Air quality; Drinking water; Epidemiological risk analyses; Waste management	Interested	Yes
Bernthal, Frederick	Washington	DC	Universities Research Association	Dr. Harlan Watson, Ambassador and Special Envoy to the United Nations Framework Convention on Climate Change, U.S. Department of State (Retired)	Benefit-cost analysis; Risk assessment; Energy and the environment; Uncertainty analysis; Waste management	Interested	Yes
Berry, Edwin	Bigfork	MT	Climate Physics LLC	Self	Complex systems; Modeling; Atmospheric sciences	Interested	Yes
Bilec, Melissa	Pittsburgh	PA	University of Pittsburgh	Self	Complex systems; Engineering; Air quality; Energy and the environment; Community environmental health; Sustainability	Interested	Yes
Bishop, Paul	Kingston	RI	Univ. of Rhode Island	Self	Engineering; Water quality; Water quantity and reuse; Waste management	Interested	Yes

Person	City	State	Organization	Who Referred	Special Expertise Needed	Comment	CV Provided
Blanz, Bob	North Little Rock	AR	Arkansas Department of Environmental Quality	Vice President, Policy Dan Byers, U.S. Chamber of Commerce	Complex systems; Ecological sciences and ecological assessment; Engineering; Hydrology; Energy and the environment; Water quality; Ecosystem services; Community environmental health; Waste management	Interested	Yes
Blint, Richard	Clinton Township	MI	N2Kinetics Research, LLC	Caroline Trupp Gil, American Chemical Society	Engineering; Modeling; Air quality; Energy and the environment	Interested	Yes
Brewer, Todd	Springfield	MO	City Utilities of Springfield	Mr. Dave Schryver, APGA Employee	Engineering; Public health; Drinking water; Energy and the environment	Interested	Yes
Brouder, Sylvie M.	West Lafayette	IN	Purdue University	SAB Staff Office	Ecological sciences and ecological assessment; Agricultural sciences; Water quality; Ecosystem services	Interested	Yes
Burton, G. Allen	Ann Arbor	MI	University of Michigan	Self	Ecological sciences and ecological assessment; Risk assessment; Ecosystem services; Sustainability	Interested	Yes
Bus, James	Midland	MI	Exponent, Inc.	Dan Greenbaum, dgreenbaum@healteffects.org	Risk assessment; Toxicology	Interested	Yes
Calabrese, Edward	Amherst	MA	University of Massachusetts Amherst	Dr Richard Yamada, US EPA	Public health; Risk assessment; Toxicology	Not Interested	Not Provided
Carlin, Alan			Retired Federal Employee	Self	Benefit-cost analysis; Economics; Atmospheric sciences; Energy and the environment	Interested	Yes
Checkoway, Harvey	La Jolla	CA	University of California San Diego	SAB Satff Office	Medicine; Public health; Toxicology; Epidemiological risk analyses	Not Interested	Not Provided
Cohen, Samuel	Omaha	NE	University of Nebraska Medical Center	Self	Medicine; Toxicology	Interested	Yes
Cooper, Cal	Houston	TX	Apache Corporation	Khary Cauthen, API	Hydrogeology	Interested	Not Provided
Cox, Tony	Denver	CO	Cox Associates	Dan Byers, U.S. Chamber of Commerce	Causal inference; Risk assessment; Uncertainty analysis; Epidemiological risk analyses; Uncertainty analysis	Interested	Yes
Cromar, Kevin	New York	NY	New York University	Dr. Lars Perlmutt, US EPA	Health sciences; Public health; Statistics; Toxicology; Air quality; Atmospheric sciences; Epidemiological risk analyses; Community environmental health	Interested	Yes
D'Aleo, Joseph	New York	NH	WeatherBELL Analytics, LLC	Self	Atmospheric sciences	Interested	Yes
Dasgupta, Purnendu	Arlington	TX	University of Texas at Arlington	Dr Andrea Kirk, US EPA	Analytical chemistry; Air quality; Atmospheric sciences	Interested	Yes

Person	City	State	Organization	Who Referred	Special Expertise Needed	Comment	CV Provided
Dayaratna, Kevin	Washington DC	DC	The Heritage Foundation	Self	Benefit-cost analysis; Causal inference	Interested	Yes
Diez Roux, Ana V.	Philadelphia	PA	Drexel University		Medicine; Public health; Air quality; Epidemiological risk analyses	Interested	Yes
Driessen, Paul	Fairfax	VA	Global-Comm Partners	Self	Benefit-cost analysis; Ecological sciences and ecological assessment; Energy and the environment; Sustainability	Interested	Yes
Easton, Zachary	Blacksburg	VA	Virginia Polytechnic Institute and State University (Virginia Tech)	Mr. Dennis Treacy, Smithfield Foundation	Hydrology	Interested	Yes
Enstrom, James	Los Angeles	CA	University of California, Los Angeles	Self	Public health; Air quality; Epidemiological risk analyses	Interested	Yes
Farland, William	Fort Collins	CO	Colorado State University	Dr. Angela Nugent, odenug@gmail.com	Health sciences; Risk assessment; Toxicology	Withdrew	Not Provided
Flint, Courtney	Logan	UT	Utah State University	Angela Nugent, Angela Nugent	Complex systems; Social behavioral and decision sciences	Interested	Yes
Fowle, John	Pittsboro	NC	Science to Inform, LLC	Caroline Trupp Gil, American Chemical Society	Risk assessment; Toxicology; Chemical safety	Interested	Yes
Frampton, Mark	Rochester	NY	University of Rochester			Interested	Yes
Fry, Juliane	Portland	OR	Reed College	Prof. Colette Heald, MIT	Analytical chemistry; Air quality; Atmospheric sciences; Energy and the environment	Interested	Yes
Fulks, Gordon	La Center	WA	Gordon Fulks and Associates	Self	Benefit-cost analysis; Causal inference; Complex systems; Ecological sciences and ecological assessment; Engineering; Modeling; Public health; Risk assessment; Uncertainty analysis; Air quality; Drinking water; Energy and the environment; Epidemiological risk analyses; Sustainability; Homeland security	Interested	Yes
Galloway, James	Charlottesville	VA	University of Virginia	SAB Staff Office	Complex systems; Ecological sciences and ecological assessment; Geochemistry	Interested	Yes
Gordon, Terry	Tuxedo	NY	New York University School of Medicine	Self	Health sciences; Public health; Risk assessment; Toxicology; Air quality; Community environmental health; Chemical safety	Interested	Yes
Graham, John D.	Bloomington	IN	Indiana University	Vice President, Policy Dan Byers, U.S. Chamber of Commerce	Benefit-cost analysis; Risk assessment; Social behavioral and decision sciences; Community environmental health	Interested	Yes

Person	City	State	Organization	Who Referred	Special Expertise Needed	Comment	CV Provided
Green Jr., Johney	Golden	CO	National Renewable Energy Laboratory	Mr. Brennon Marcano, Colleague	Engineering; Energy and the environment	Interested	Not Provided
Haas, Charles	Philadelphia	PA	Drexel University	self	Engineering; Microbiology; Risk assessment; Uncertainty analysis; Drinking water	Interested	Yes
Harrington, Joseph	Northglenn	CO	MineWater LLC	Self	Benefit-cost analysis; Causal inference; Complex systems; Engineering; Geochemistry; Hydrogeology; Microbiology; Drinking water; Water quality; Water quantity and reuse	Interested	Yes
Harris, Jerry M.	Stanford	CA	Stanford University	Kieth Moon Young, University of Washington	Engineering	Not Interested	Not Provided
Hattis, Dale	Worcester	MA	Clark University	Self	Risk assessment; Social behavioral and decision sciences; Statistics; Toxicology; Uncertainty analysis	Interested	Yes
Hollis, Adrienne	Washington	DC	WE ACT for Environmental Justice	Self	Health sciences; Public health; Risk assessment; Toxicology; Air quality; Energy and the environment; Community environmental health	Interested	Yes
Honeycutt, Michael	Austin	TX	Texas Commission on Environmental Quality	Dr. Bryan Shaw, TCEQ	Risk assessment; Toxicology	Interested	Yes
Hood, Darryl	Columbus	OH	The Ohio State University	Self	Toxicology	Interested	Yes
Hornberger, George	Nashville	TN	Vanderbuilt University	Mr. Dan Greenbaum, Health Effects Institute	Hydrology; Hydrogeology	Interested	Yes
Hufford, Walt	Warrendale	PA	Repsol	Dan Byers, U.S. Chamber of Commerce; Dr. John Giardino, Texas A&M	Engineering; Energy and the environment	Interested	Yes
Idso, Craig	Gilbert	AZ	Center for the Study of Carbon Dioxide and Global Change	Self	Agricultural sciences; Energy and the environment	Interested	Yes
Jacksier, Tracey	Newark	DE	Air Liquide	Self	Analytical chemistry; Geochemistry; Uncertainty analysis; Air quality; Atmospheric sciences; Uncertainty analysis	Interested	Yes
Jackson, C. Rhett	Athens	GA	University of Georgia	Dr. C. Rhett Jackson, University of Georgia	Hydrology, Water Quality	Interested	Yes
Jayjock, Michael	Langhorne	PA	Drexel University	Self	Modeling; Risk assessment	Interested	Yes
Juberg, Daland	Indianapolis	IN	DowAgrosciences LLC	Mr. Dan Byers, U.S. Chamber of Commerce	Health sciences; Public health; Toxicology; Agricultural sciences	Not Interested	Not provided
Kang, Juhyon	Lincoln	NE	University of Nebraska-Lincoln	Self	Energy and the environment	Interested	Yes

Person	City	State	Organization	Who Referred	Special Expertise Needed	Comment	CV Provided
Keen, Richard	Boulder	CO	University of Colorado	Self	Atmospheric sciences	Interested	Yes
Kenny, Leo	Pleasanton	CA	PLANET SINGULAR	Caroline Trupp Gil, American Chemical Society	Analytical chemistry; Benefit-cost analysis; Health sciences; Modeling; Risk assessment; Air quality; Agricultural sciences; Water quality; Water quantity and reuse; Sustainability; Chemical safety; Green chemistry; Waste management	Interested	Yes
Kersting, Annie B.	Berkeley	CA	Lawrence Berkeley National Laboratory		Geochemistry; Hydrology; Hydrogeology; Water quality	Interested	Yes
Khubchandani, Jagdish	Muncie	IN	Ball State University	Self	Health sciences; Medicine; Pediatrics; Public health; Social behavioral and decision sciences; Statistics; Toxicology	Foreign National / Interested	Yes
Kissel, John	Seattle	WA	University of Washington	Dr. Elaine Faustman, University of Washington	Toxicology; Epidemiological risk analyses; Waste management	Interested	Yes
KLAUNIG, PhD, ATS, IAT	BLOOMINGTON	IN	INDIANA UNIVERSITY	Self	Benefit-cost analysis; Complex systems; Health sciences; Public health; Risk assessment; Toxicology	Interested	Yes
Kleinman, Michael T.	Irvine	CA	University of California, Irvine	Self	Analytical chemistry; Health sciences; Public health; Toxicology; Air quality; Community environmental health; Homeland security	Interested	Yes
Kontou, Eleftheria	Golden	CO	National Renewable Energy Laboratory	Self	Engineering	Interested	Yes
Kotchen, Matthew	New Haven	CT	Yale University	SAB Staff Office	Economics	Interested	Yes
Landis, Wayne	Bellingham	WA	Western Washington University	Self	Complex systems; Ecological sciences and ecological assessment; Modeling; Risk assessment; Toxicology; Uncertainty analysis; Ecosystem services; Uncertainty analysis	Interested	Yes
Legates, David	Newark	DE	University of Delaware	Self	Hydrology; Statistics; Atmospheric sciences	Interested	Yes
Lewis, Jeffrey			Exxon Mobil Biomedical Sciences, Inc	Dan Byers, U.S. Chamber of Commerce	Benefit-cost analysis; Health sciences; Pediatrics; Public health; Risk assessment; Toxicology	Interested	Yes
Lindstrom, Merlin R.	Bartlesville	OK	Phillips 66 Research Center	Khary Cauthen, API	Energy and the environment	Interested	Yes
Lohmann, Rainer	Narragansett	RI	University of Rhode Island	Self	Analytical chemistry; Engineering; Geochemistry; Water quality	Interested	Yes
Lupo, Anthony	University of Missouri	MO	University of Missouri	Self	Complex systems; Hydrology; Atmospheric sciences	Interested	Yes
Marinas, Benito	Urbana, IL	IL	University of Illinois	Dr. Eugene Rice, retired EPA employee	Engineering; Drinking water; Water quality; Sustainability	Interested	Yes

Person	City	State	Organization	Who Referred	Special Expertise Needed	Comment	CV Provided
Marlborough, Sidney	Houston	TX	Noble Energy, Inc	Self	Ecological sciences and ecological assessment; Modeling; Risk assessment; Toxicology; Agricultural sciences; Energy and the environment; Water quality; Chemical safety; Waste management	Interested	Yes
Marsit, Carmen	Hanover	NH	Dartmouth College	Dr. Paige Tolbert, Emory University	Causal inference; Health sciences; Modeling; Pediatrics; Public health; Risk assessment; Statistics; Toxicology; Epidemiological risk analyses; Community environmental health; Chemical safety	Interested	Yes
Matthews, H. Scott	Pittsburgh	PA	Carnegie Mellon University	Angela Nugent, Angela Nugent	Complex systems; Engineering; Modeling	not interested	Not Provided
Mauzerall, Denise	Princeton	NJ	Princeton University	SAB Staff Office	Engineering; Atmospheric sciences	Interested	Yes
McConnell, Charles	Houston	TX	William Marsh Rice University	Self	Energy and the environment; Sustainability	Interested	Yes
McDonald, William	Dalhart	TX	JBS Five Rivers Cattle Feeding LLC	Mr. Scott Yager, Professional Colleague	Air quality; Agricultural sciences; Water quality; Water quantity and reuse; Waste management	Interested	Yes
Melaina, Marc	Golden	CO	National Renewable Energy Laboratory	Self	Benefit-cost analysis; Complex systems; Modeling; Risk assessment; Social behavioral and decision sciences; Uncertainty analysis; Energy and the environment; Sustainability; Uncertainty analysis	Interested	Yes
Merritt, Robert W.	Houston	TX	Total	Khary Cauthen, API	Geochemistry	Interested	Yes
Mirecki, June	Jacksonville		US Army Corps of Engineers	Dr. June Mirecki, US Army Corps of Engineers	Geochemistry; Hydrogeology; Drinking water; Water quality; Water quantity and reuse	FederalEmployee	Not Provided
Monique, Mark	Norwood	MA	The Savogran Company	Self	Benefit-cost analysis; Chemical safety	Interested	Not provided
Monroe, Larry	Blountsvile	AL	Southern Company	Ms. Kimberly Greene, COO, Southern Company	Benefit-cost analysis; Ecological sciences and ecological assessment; Engineering; Air quality; Energy and the environment; Water quantity and reuse	Interested	Yes
Mooney, Laura	Tallahassee	FL	City of Tallahassee	Mr. Dave Schryver, APGA Employee	Energy and the environment	Interested	Yes
Moore, Christopher	Des Plaines	IL	Gas Technology Institute	Self	Geochemistry; Modeling; Air quality; Atmospheric sciences; Energy and the environment; Water quality; Sustainability	Interested	Yes
Moore, James C.	St. Louis	MO	Spire Inc	self	Economics; Engineering; Modeling; Risk assessment	Interested	Yes
Morello-Frosch, Rachel	Berkeley	CA	University of California, Berkeley	SAB Staff Office	Public health; Social behavioral and decision sciences	Withdrew	Not provided
Mueller, Thomas	Knoxville	TN	University of Tennessee	Self	Analytical chemistry; Agricultural sciences	Interested	Yes

Person	City	State	Organization	Who Referred	Special Expertise Needed	Comment	CV Provided
Nuckols, John	North Bethesda, MD	CO	Colorado State University	Self	Ecological sciences and ecological assessment; Engineering; Health sciences; Hydrology; Hydrogeology; Modeling; Public health; Risk assessment; Air quality; Agricultural sciences; Drinking water; Epidemiological risk analyses; Water quality; Water quantity and reuse; Community environmental health	Interested	Yes
Oguntimein, Gbekeloluw	Baltimore	MD	Morgan State University	Dr. James Hunter, Morgan State University	Analytical chemistry; Engineering; Green chemistry	Interested	Yes
Orlov, Alexander	Stony Brook	NY	State University of New York, Stony Brook	Caroline Trupp Gil, American Chemical Society	Benefit-cost analysis; Engineering; Health sciences; Public health; Risk assessment; Air quality; Energy and the environment; Water quality; Sustainability; Chemical safety; Green chemistry; Waste management	Interested	Yes
Osmond, Deanna	Raleigh	NC	NC State University	Mitchell Peele, North Carolina Farm Bureau Federation	Ecological sciences and ecological assessment; Agricultural sciences; Water quality	Interested	Yes
Pande, Krishna	Hsinchu		National Chiao Tung University	Dr Nimesh Shah, Family	Complex systems; Engineering	Interested	Yes
Peltier, Richard	Amherst	MA	University of Massachusetts	Self	Analytical chemistry; Health sciences; Public health; Air quality; Atmospheric sciences; Community environmental health	Interested	Yes
Phalen, Robert	Irvine	CA	University of California-Irvine	Dan Byers, U.S. Chamber of Commerce	Health sciences; Public health; Risk assessment; Toxicology	Interested	Yes
Puls, Robert	Hilton Head Island	SC	Robert Puls Environmental Consulting	Ryan Jackson	Geochemistry; Hydrology; Hydrogeology	Interested	Yes
Richardson, David B.	Chapel Hill	NC	University of North Carolina	SAB Staff Office	Epidemiological risk analyses	Interested	Yes
Richardson, Mary Jo	College Station	TX	Texas A&M University	Self		Interested	Yes
Rodewald, Amanda D.	Ithaca	NY	Cornell University	SAB Staff Office	Ecological sciences and ecological assessment; Ecosystem services	Interested	Yes
Rolband, Michael	Gainesville	VA	Wetland Studies and Solutions, Inc.	Mr. Dennis Treacy, Smithfield Foundation	Ecological sciences and ecological assessment; Engineering	Interested	Yes
Rosen, Barry	Miami	FL	Florida International University	self	Ecological sciences and ecological assessment; Health sciences; Microbiology; Toxicology; Community environmental health	Interested	Yes
Russell, Armistead (Ted)	Atlanta	GA	Georgia Institute of Technology	Dr. Valerie Thomas, Valerie Thomas	Air quality; Atmospheric sciences	Interested	Yes

Person	City	State	Organization	Who Referred	Special Expertise Needed	Comment	CV Provided
Sager, Allana	Port Arthur	TX	Dexter ATC Field Services, Inc.	Caroline Trupp Gil, American Chemical Society	Benefit-cost analysis; Engineering; Air quality; Water quality; Water quantity and reuse; Waste management	Interested	Yes
Scherer, Michelle	Iowa City	IA	University of Iowa.		Engineering; Geochemistry; Water quality; Waste management	Interested	Yes
Shea, Damian	Raleigh	NC	Statera Environmental, Inc.	Caroline Trupp Gil, American Chemical Society	Analytical chemistry; Geochemistry; Health sciences; Public health; Risk assessment; Toxicology; Air quality; Drinking water; Water quality; Chemical safety	Interested	Yes
Shelby, Laurie	Pittsburgh	PA	Alcoa Corporation	Honorable Larry Bucshon, Member of Congress	Causal inference; Health sciences; Risk assessment; Water quality; Sustainability	Interested	Yes
Sherman, Michael	Raleigh	NC	North Carolina Farm Bureau Federation	Mr. Mitch Peele, North Carolina Farm Bureau	Engineering; Agricultural sciences; Waste management	Interested	Yes
Shukla, Sudheer Kumar	Muscat	Oman	Caledonian College of Engineering,	Self	Engineering; Drinking water; Energy and the environment; Water quality; Water quantity and reuse; Ecosystem services; Sustainability; Waste management	Foreign National / Interested	Not Provided
Simon, Ted	Winston	GA	University of Georgia	Vice%20President,%20Policy Dan Byers, U.S. Chamber of Commerce	Health sciences; Public health; Risk assessment; Statistics; Toxicology; Uncertainty analysis	Interested	Provided locked version. Available at http://www.tedsimon-toxicology.com/
Skoglund, Robert	Pittsburgh	PA	Covestro LLC	self	Public health; Risk assessment; Toxicology; Sustainability; Chemical safety; Green chemistry	Interested	Yes
Smith, Anne	Washington	DC	NERA Economic Consulting	Mr. Dan Byers, U.S. Chamber of Commerce	Benefit-cost analysis; Economics; Risk assessment; Energy and the environment	Interested	Yes
Smith, Eric P.	Blacksburg	VA	Virginia Polytechnic Institute and State University	SAB Staff Office	Complex systems; Ecological sciences and ecological assessment; Statistics; Uncertainty analysis	Interested	Yes
Smith, Richard	Chapel Hill	NC	University of North Carolina	Dr. Richard Yamada	Causal inference; Complex systems; Statistics; Atmospheric sciences	Interested	Yes
Stevenson, David	Newark	DE	Caesar Rodney Institute	Self	Economics	Interested	Yes
Steward, H. Leighton	Arlington,	TX	CO2 Coalition	Mr. H. Leighton Steward, Retired	Ecosystem services	Interested	Yes
Stuart, Amy	Tampa	FL	University of South Florida	Dr. James Mihelcic, University of South Florida	Complex systems; Engineering; Health sciences; Modeling; Public health; Air quality; Atmospheric sciences; Community environmental health; Sustainability	Interested	Yes

Person	City	State	Organization	Who Referred	Special Expertise Needed	Comment	CV Provided
Swenberg, James	Chapel Hill	NC	University of North Carolina (Chapel Hill)	Mr. Dan Greenbaum, Health Effects institute	Analytical chemistry; Health sciences; Microbiology; Risk assessment; Toxicology	Withdrew	Not Provided
Tharakan, John	Washington	DC	Howard University	Dr. Angela Nugent, Angela Nugent	Benefit-cost analysis; Engineering; Drinking water; Community environmental health; Waste management	Interested	Yes
Theis, Thomas L.	Chicago	IL	University of Illinois at Chicago	Self	Benefit-cost analysis; Complex systems; Engineering; Modeling; Risk assessment; Uncertainty analysis; Energy and the environment; Water quality; Ecosystem services; Sustainability	Interested	Yes
Thomas, Valerie	Atlanta	GA	Georgia Institute of Technology	Self	Benefit-cost analysis; Engineering; Modeling; Risk assessment; Uncertainty analysis; Energy and the environment; Sustainability; Uncertainty analysis	Interested	Yes
Thompson, Timothy	Seattle	WA	Science and Engineering for the Environment, LLC	SAB Staff Office	Ecological sciences and ecological assessment; Risk assessment; Waste management	Interested	Not Provided
Thorne, Peter S.	Iowa City	IA	University of Iowa	SAB Staff Office	Engineering; Public health; Toxicology	Interested	Yes
Thurston, George	Tuxedo	NY	New York University	SAB Satff Office	Public health; Air quality	Interested	Yes
Turco, Ronald	West Lafayette	IN	Purdue University	Karl Anderson, Soil society of America, SAB Satff Ofice	Microbiology; Atmospheric sciences; Water quality	Interested	Yes
van der Vaart, Donald	Raleigh	NC	NC State Government	Self	Engineering; Air quality; Energy and the environment	Interested	Yes
Van Houtven, George	Research Triangle Park	NC	RTI International	SAB Staff Office	Economics; Community environmental health; Uncertainty analysis	Interested	Yes
van Wijngaarden, Edwin	Rochester	NY	University of Rochester	SAB Staff Office	Public health; Risk assessment; Epidemiological risk analyses	Interested	Yes
VanBriesen, Jeanne M.	Pittsburgh	PA	Carnegie Mellon University	SAB Staff Office	Engineering; Drinking water; Water quality; Water quantity and reuse	Interested	Yes
Vikesland, Peter	Blacksburg	VA	Virginia Tech	Mr. Dennis Treacy, Smithfield Foundation	Analytical chemistry; Public health; Drinking water; Sustainability	Interested	Yes
Walsh, Daniel	New York/New York		NYC Mayor's Office/Columbia University	Ms. Lee Ilan, NYC Office of Environmental Remediation	Benefit-cost analysis; Engineering; Geochemistry; Hydrology; Hydrogeology; Public health; Risk assessment; Drinking water; Water quality; Community environmental health; Homeland security; Waste management	Interested	Yes
Weber, Elke	Princeton	NJ	Princeton University	SAB Staff Office	Social behavioral and decision sciences	Interested	Yes
Weber, Stephen	Silver Spring	MD	Food and Drug Adminitsration	Self	Medicine	Federal Employee	Not Provided
Weinstein, Laurie	Danbury		University	Dr. Laurie Weinstein, Western Ct. State University	Causal inference; Ecological sciences and ecological assessment; Social behavioral and decision sciences	Interested	Yes

Person	City	State	Organization	Who Referred	Special Expertise Needed	Comment	CV Provided
Wells, E. Christian		FL	University of South Florida	Self	Complex systems; Community environmental health; Sustainability	Interested	Yes
Werth, Charles	Austin	TX	University of Texas at Austin	SAB Staff Office	Analytical chemistry; Engineering; Drinking water; Water quality	Interested	Yes
White, Kimberly	Washington,	DC	American Chemistry Council	Self	Toxicology	Interested	Yes
Young, S. Stanley	Raleigh	NC	CGStat	Self	Causal inference; Risk assessment; Statistics; Toxicology; Uncertainty analysis; Air quality; Epidemiological risk analyses; Community environmental health; Chemical safety	Interested	Yes
Zeise, Lauren	Oakland	CA	California Environmental Protection Agency	Dan Greenbaum	Causal inference; Health sciences; Public health; Risk assessment; Toxicology; Chemical safety	Interested	Yes
Zhu, Chen	Bloomington	IN	Indiana University	Self	Geochemistry	Interested	Yes
Zwiernik, Matthew	East Lansing	MI	Michigan State University	Self	Ecological sciences and ecological ssessment; Engineering; Health sciences; Hydrology; Hydrogeology; Modeling; Public health; Risk assessment; Air quality; Agricultural sciences; Drinking water; Epidemiological risk analyses; Water quality; Water quantity and reuse; Community environmental health	Interested	Yes

CURRICULUM VITAE

HENRY A. ANDERSON, M.D.

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Henry.Anderson@DHS.Wisconsin.gov

Wisconsin MD # 18539

PROFESSIONAL HISTORY

7/08 – 1/09 and 10/10 - current	State Health Officer Wisconsin Department of Health Services, Madison.
10/91 – current	Chief Medical Officer for Occupational & Environmental Health Wisconsin Division of Public Health, Madison.
6/80 - current	State Epidemiologist for Occupational and Environmental Disease Wisconsin Division of Public Health, Madison.
6/89 - current	Adjunct Professor, Institute for Environmental Studies University of Wisconsin, Madison.
6/89 - current	Adjunct Professor of Preventive Medicine University of Wisconsin Medical School, Madison.
6/80 - current	Lecturer, Department of Community Medicine Mount Sinai School of Medicine, New York
6/80 - 10/91	Chief, Section of Environmental and Chronic Disease Epidemiology Wisconsin Division of Health, Madison.
6/85 - 6/89	Adjunct Associate Professor, Institute for Environmental Studies University of Wisconsin, Madison.
6/85 - 6/89	Adjunct Associate Professor of Preventive Medicine University of Wisconsin Medical School, Madison.
6/80 - 6/85	Adjunct Assistant Professor of Preventive Medicine University of Wisconsin Medical School, Madison.
1/78 - 6/80	Assistant Professor of Community Medicine Environmental Sciences Laboratory Mount Sinai School of Medicine, New York
1/77 - 6/80	Clinical Assistant, Department of Medicine Mount Sinai School of Medicine, New York
1/77 - 1/78	Instructor, Department of Community Medicine Mount Sinai School of Medicine, New York
1/76 - 1/77	Assistant, Department of Community Medicine Mount Sinai School of Medicine, New York
1/76 - 1/77	Research Fellow, Department of Medicine Mount Sinai School of Medicine, New York
6/73 - 6/76	Research Fellow, Department of Community Medicine Mount Sinai School of Medicine, New York
6/73 - 6/76	Resident in Occupational and Environmental Medicine

	Environmental Sciences Laboratory Mount Sinai School of Medicine, New York
6/72 - 6/73	Straight Medical Internship, Department of Medicine Montefiore Hospital and Medical Center, Bronx, NY

ACADEMIC RECORD

1968	B.A., Stanford University, Stanford, CA
1972	M.D., University of Wisconsin Medical School, Madison.

SPECIALTY BOARD CERTIFICATION

1977	American Board of Preventive Medicine Sub-specialty - Occupational and Environmental Medicine
1983	Fellow, American College of Epidemiology
1985	Certified "B" Reader for Pneumoconiosis Radiographs under Federal Mine Safety and Health Act of 1977 and its amendments. Recertified: July 1989, July 1993, July 1997, July 2001, July 2005, July 2009.

ELECTED AND APPOINTED PROFESSIONAL POSITIONS

NATIONAL

Current

Advisory Board on Radiation and Worker Health (Presidential FACA) (2009–current)
American Association for the Advancement of Science (Fellow 1994-current)
USEPA National Advisory Committee for Acute Exposure Guideline Levels for Hazardous Substances (FACA), (2006 – 2012)
Association of State and Territorial Health Officials (ASTHO) - Environment Policy Committee (1986-current)
Council of State and Territorial Epidemiologists (CSTE) - member 1981–present; (Chairperson Section of Occupational, Environmental Health 1982-1988, executive committee member 1993-1997, President-elect 1998; President 1999, Vice-president 2000)
Council of Great Lakes Governors - Human Health Effects Evaluation and Studies Coordination Group (member 1982–current; Chairperson 1988-current)
Collegium Ramazzini (Fellow 1990–current, Executive Committee 2010-current), Collegium Ramazzini Commission on Asbestos, 1991-2003)
Society for Occupational and Environmental Health (SOEH) (member 1980–current, Councilor 1987-1989)
National Academy of Sciences "Committee on the Assessment of Water Reuse" (2009-1012)

Past

USEPA Childrens' Health Protection Advisory Council (FACA) (2004 – 2009)
Board of Scientific Councilors, National Institute of Occupational Safety and Health, (CDC FACA) Chairperson (2004-2006)
Advisory Board on Radiation and Worker Health (Presidential FACA) (2001–2006)
Hanford Human Health Effects Subcommittee, Agency for Toxic Substances and Disease Registry (FACA) (1997-2004)
Advisory Committee to the Director – Centers for Disease Control and Prevention, National Center for Environmental Health (NCEH) (1999-2003)
Agency for Toxic Substances and Disease Registries (ATSDR) Board of Scientific Councilors (1988–1992)
National Institutes of Health - Safety and Occupational Health Grant Review Study Section (member 1984–1988, Chairperson 1988)

Health Disparities and Environmental Justice Workgroup for the Longitudinal Cohort Study of Environmental Effects on Child Health and Development (LCS) (2001–2004)
US EPA Science Advisory Board, Childrens' Health Protection Advisory Council liaison (FACA) (2004–2009)
USEPA Science Advisory Board, Executive Committee (FACA) (1997-2003)
USEPA Science Advisory Board, Environmental Health Subcommittee (FACA) (Chairperson 2001-2003)
USEPA Science Advisory Board, Integrated Human Exposures Subcommittee (FACA) (Chairperson 1997-2001)
USEPA Pesticide Program Dialogue Committee (FACA) (1996-2000)
USEPA Tolerance Reassessment Advisory Committee (FACA) (1998-2000)
USEPA Endocrine Disruptor Screening and Testing Committee (FACA) (1997–1999)
National Academy of Sciences "Committee on Toxicity Testing and Assessment of Environmental Agents " (2004-2007)
National Academy of Sciences "Committee to Evaluate Measures of Health Benefits for Environmental, Health, and Safety Regulation" (2004-2006)
National Academy of Sciences, Institute of Medicine, "Committee on Enhancing Environmental Health content in Nursing Practice" (1993-1995)
National Academy of Sciences, Institute of Medicine, "Committee on a National Agenda for the Prevention of Disabilities" (1988-1991)
National Jewish Hospital Advisory Board on DOE Beryllium Workers Health Surveillance (1999–2004)
Bi-national Commission on Human Health in the Great Lakes Basin (1992-2003)
Armed Forces Epidemiology Board (1996-2000)
DOL/OSHA Metalworking Fluids Standards Advisory Committee (FACA) (1998-1999)
Year 2000 Objectives for the Nation - Environmental Health Objectives development committee (workgroup chairperson 1988 -1990)

STATE PROGRAMS

Wisconsin Preventive Medicine Society (member 1982 – current, President 1986 - current)
Wisconsin Medical Society Committee on Preventive Medicine (member 1982 -2000, Chairperson 1985-1987)
Wisconsin Medical Society Committee on Occupational and Environmental Health (member 1981–current, Vice Chairperson 1988-90,)
Wisconsin Medical Society Committee on Health of the Public (2000-current)
Wisconsin Cancer Council (1985-current)
Wisconsin Department of Health and Family Services (DHFS) Chief Medical Officer Human Subjects Protection Committee (Chair 2002-current)

JOURNALS

Wisconsin Medical Journal - Public Health Series (Co-Editor 1986-2000)
American Journal of Industrial Medicine (Associate Editor 1981-current)
Cancer Prevention International (Editorial Board (1993-present)

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9/2012

EXECUTIVE SUMMARY

Distribution of Effort

My current university appointment is as Director of the Center for Applied Energy Research. In 2011, I also became Program Director for Kentucky NSF EPSCoR (25% effort). My major job functions are assigned as Administration (70%); Research (10%), Publications, Proposals and IP Development (10%); Teaching, Instruction and Service (5%); and, Professional Development (5%). These are the metrics that are considered in my annual performance evaluation.

Awards and Recognition

Graffin Lecturer of the American Carbon Society (2011). The Lecturer, selected by the members of the American Carbon Society, is chosen as someone *who has made distinguished contributions to carbon science and engineering*. I gave 9 lectures at universities and industry throughout the US, as well as in Spain and France.

Friend of the College of Design Award (2012). This was given in recognition of my contributions to the college in establishing and promoting partnerships in sustainable and energy efficient design.

National Coal Council (2014). Appointed by US Secretary of Energy, Dr. Ernest Moniz, to serve on the National Coal Council for 2014-2015. NCC is established under the Federal Advisory Committee Act (1984) to inform and make recommendations to the Secretary of Energy on issues relating to coal utilization and technology.

Publications

As of June 6, 2014, I have an h-index of 31 and >8,000 citations (from Scopus). I have 67 peer-reviewed publications, 25 since appointment as Associate Professor. I have authored 3 new book chapters (for a total of 5). During this period, I have also expanded into two new unrelated areas of research. These are maturing and should result in an increase in publications as students complete their manuscripts.

The paper "Load transfer and deformation mechanisms in carbon nanotube-polystyrene composites" Appl. Phys. Lett. 76, 2868 (2000) was recognized as one of the Top 50 Most Cited papers in the history of APL.

Patents and Intellectual Property

Due to the applied focus of the work at the Center for Applied Energy Research, much of the work carried out is directed toward the generation of intellectual property, with principal metrics being the granting of patents and licensing of technologies.

Granted patents:

1. US Patent 8,167,955 Carbon fiber reinforced carbon foams for repair and reconstruction of bone defects (2012) Marrs, B. H., Andrews, R., Cunningham, L. Jr.
2. US Patent 7,504,078 Continuous production of aligned carbon nanotubes (2009) Jacques, D. N., Andrews, R.
3. US Patent 7,160,531 Process for the continuous production of aligned carbon nanotubes (2007) Jacques, D. N., Andrews, R.
4. US Patent 6,908,572 Mixing and dispersion of nanotubes by gas or vapor expansion (2005) Derbyshire, F. J., Andrews, R., Safadi, B.
5. US Patent 6,872,403 Polymethylmethacrylate augmented with carbon nanotubes (2005) Pienkowski, D. A., Andrews, R.
6. US Patent 6,599, 961 Polymethylmethacrylate augmented with carbon nanotubes (2003) Pienkowski, D. A., Andrews, R.

In-process and published applications:

1. US Patent Application Publication 2011/0111227 A1 (May 12, 2011). Method for Production of Germanium Nanowires Encapsulated within Multi-walled Carbon Nanotubes. Crocker, M., Andrews, R., Pandurangan, A., Qian, D.
2. US Patent Application Publication 2012/0207975 (Aug 16, 2012). Lightweight Fire Resistant Covering for Structures. Andrews, R., Meier, M., Golubic, T., Yeary, P.

Licensing:

1. Patents 2, 3, and 4 have been licensed to Xtreme Carbons, LLC.
2. Technology for algal photobioreactors has been licensed to several US clients as well as a Chinese client who is pursuing development and marketing in China.

Graduate Student and Post Doc Supervision

Student Advisor

	Current Students	Graduates	Total
PhD	2	4*	6
MS	0	8	8
Post Doc			2.5#

*This includes two students for whom I was research supervisor but could not be advisor due to adjunct faculty status at the time.

#Until changes in the appointment process, I was supervisor of record for all postdocs at the CAER. Of these, only 2.5 were specific to my research program.

I have served on 10 PhD committees and 9 MS committees.

Grants

	Research	Administration / Project Management	Construction / Equipment	Service / Education
Active	[1]$11,244,652	[2]$23,412,785		
Pending		[3]$24,000,000		
Completed	$13,291,903	$135,000	[4]$19,148,373	[5]$975,888

1. Two most significant projects currently are:
    a. Andrews, R. (PI). "Design and Construction of Coal/Biomass-to-Liquids (CBTL) Process Development Unit at University of Kentucky", Department of Energy, $5,735,007, 8/6/08 – 6/30/15.
    b. Andrews, R. (PI). "Coal Fuel Alliance (CFA): Design and Construction of Early Lead Mini Fischer-Tropsch Refinery at the University of Kentucky Center for Applied Energy Research", Department of Energy, $4,567,940, 8/6/08 – 6/30/15.
2. Large multi-institution grants including KY NSF EPSCoR and Kentucty Research Consortium for Energy and the Environment (KRCEE). In both cases, I have small scopes for research. Both EPSCoR and KRCEE have supported programs of faculty within CME, notably under the current year EPSCoR.
3. We have been informed that the NSF EPSCoR Track 1 RII has been selected for full funding of $24,000,000. I am responsible for both overall administration (PD/PI) and have research scopes in two areas of the program. CME is heavily

featured (approx. $15.9M comes to UK from the grant), with Drs. Cheng and Bhattacharyya leading topical thrust areas.

4. Includes $18,832,685 in nationally competitive ARRA funding for construction of a laboratory building on which I was principal author and PI.
5. Includes grants performing activities at request of the Kentucky Energy and Environment Cabinet

Research Focus

Research interests include production of pitches and heavy aromatics from coal and other fossil resources, biomass utilization for fuels and chemicals, thermochemical conversion processes for coal and biomass, carbon fiber and composites, activated carbon materials, pitch chemistry and characterization, synthesis and application of carbon nanomaterials.

My group has been internationally recognized as one of the top carbon materials programs in the United States. My program in nanotube synthesis and composite applications of nanotubes is internationally known. Additionally, my group's work on pitch extraction from coal is recognized as one of the two primary processes routes to be industrially viable.

More recently, my research focus has expanded to address significant technical needs within the Commonwealth of Kentucky. One area of focus is coal-biomass-natural gas gasification process for the production of liquid fuels and chemicals. While this has been an area of strength at CAER for many years, I have directed the program to include more emphasis on process development, integration, and emissions control. This has required securing significant funding from the US Department of Energy for the design and build of a gasification-thru-finished fuel pilot unit, and for which I am the engineer in charge.

The second area has been in biomass technologies. Specifically, it involves addressing the use of algae for CO_2 capture, and lignin conversion for woody biomass. In the area of algae, work has included design and development of photobioreactor systems for algal scrubbing of flue gases from traditional thermal power plants, as well as field demonstration of this system. For lignin, I was PI for an NSF EFRI grant focused on maximizing the energy content and value of woody biomass for developing techniques for increasing lignin content of plants as well as developing a better understanding of lignin deconstruction. Both of these topical areas required significant ramp-up, and the work is currently beginning to be published.

Teaching

My appointments have assigned 0% DoE for teaching since 2007. However, I value the opportunity to teach, and the perspectives students can bring to many of the areas in which I work. Beginning in 2009, I developed the content and lecture materials for CME 599 Energy Systems. Later, with the College's receipt of the PEIK grant, this was modified to CME 542 Power Generation Technologies (and cross-listed as ENG and EE courses). Due to the requirements of my position (primarily travel), I have been required to use co-instructors for this course, where I have taught between 30 and 40% of the course directly. However, I have remained responsible for course content, materials used, and overall direction. As such, the course has been changed with student input to include more information on nuclear, and will have the natural gas sections expanded in the upcoming semester.

Semester	Course	Title	Enrollment	Overall Value	Quality of Teaching
S 2009	CME 599	Energy Systems	35	3.3	3.4
S 2010	CME 599	Energy Systems	45	3.7	3.6
F 2011	CME 599 EGR 542 EE 599	Power Generation Technologies	50 (21 / 5 /24)	3.8	3.8
F 2012	CME 542 EGR 542	Power Generation Technologies	46 (12 / 34)	3.9	4.0
F2013	CME 542 EGR 542	Power Generation Technologies	74 (35 / 39)	3.8	3.9

Service

Service to the University has included co-chairing the Research Working Group of the UK strategic planning process, serving on the Provost Search Committee, serving on the review committee for the College of Design, serving on two separate review committees for the UK IP/Tech Transfer offices, and serving on the review committee for the Kentucky Geological Survey. I am also an appointed member of the UK Mining Engineering Foundation Board, and serve on the Power and Energy Institute of Kentucky board within the College of Engineering.

Due to the nature of my research, most of my professional service has been directed toward supporting the American Carbon Society (as well as several international equivalents). I have served on the technical advisory committees for the North American conferences of the society since 2001. I served on the Advisory Board of the Society

previously, and was elected this year to the Executive Committee of the Society (this serves as the board of directors).

I am on the Editorial Advisory Board for the journal Carbon (impact factor of 6.35), and review manuscripts for Carbon, Nature Materials, Fuel, Chem Comm, Applied Physics Letter, Journal of Materials Research and several other journals relevant to my area of research. I am a reviewer for DoE, NSF, CPCPC, ARO, USDA, PRF, Dutch National Science Foundation, and the Swiss National Science Foundation.

I have also served on the Project Lead the Way Kentucky board, directed at increasing students pursuing engineering careers. Similarly, I have served on the board of the Kentucky Energy Sector Partnership, directed at workforce development in the renewable energy sector. I am currently chair of the Ky EPSCoR NSF Sub-Committee.

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CURRICULUM VITAE

CONTACT INFORMATION

University of Kentucky
Center of Applied Energy Research
2540 Research Park Drive
Lexington, KY 40511
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RESEARCH INTERESTS

Research interests include production of pitches and heavy aromatics from coal and other fossil resources, biomass utilization for fuels and chemicals, thermochemical conversion processes for coal and biomass, carbon fiber and composites, activated carbon materials, pitch chemistry and characterization, synthesis and application of carbon nanomaterials.

EDUCATION

Ph.D., Chemical Engineering, 1999, University of Kentucky, Lexington, Kentucky. "Environmental Applications of Carbon Fiber and Activated Carbon Fiber Composites".

B.Sc., Chemical Engineering, 1994, The Honors College, Michigan State University, East Lansing, Michigan.

GRADUATE AND POSTDOCTORAL ADVISORS

Prof. Eric Grulke, PhD advisor, Chemical and Materials Engineering, University of Kentucky.

Prof. Frank Derbyshire, PhD advisor, postdoctoral sponsor, Chemical and Materials Engineering and Center for Applied Energy Research, University of Kentucky (deceased).

LICENSURE

Professional Engineer (PE), License # 24738 State of Kentucky.

EXPERIENCE AND PROFESSIONAL APPOINTMENTS

2011-Present	Program Director, Kentucky NSF EPSCoR
2009-Present	Director, Kentucky Research Consortium for Energy and the Environment
2007-Present	Director, Center for Applied Energy Research, University of Kentucky
2007-Present	Associate Professor, Chemical and Materials Engineering, with joint appointment as Associate Professor, Mechanical Engineering, University of Kentucky
2006-2007	Acting Director, Center for Applied Energy Research, University of Kentucky.

2003-2007	Associate Director and Engineer Associate Program Manager II Center for Applied Energy Research, University of Kentucky.
2003-2007	Assistant Adjunct Professor, Mechanical Engineering, University of Kentucky (NSF-sponsored 'Nanoscale Engineering Certificate Program').
2001-2003	Engineer Associate III - Research, Center for Applied Energy Research, University of Kentucky.
1999-2001	Engineer Associate II- Research, Center for Applied Energy Research, University of Kentucky.
Jan. 1997 & Dec. 1995	Visiting Researcher, Institute for Advanced Materials Studies, Kyushu University, Kyushu, Japan.

AWARDS AND RECOGNITION

Graffin Lecturer of the American Carbon Society (2011). The Lecturer, selected by the members of the American Carbon Society, is chosen as someone *who has made distinguished contributions to carbon science and engineering*. I gave 9 lectures at universities and industry throughout the US, as well as in Spain and France.

Friend of the College of Design Award (2012). This was given in recognition of my contributions to the college in establishing and promoting partnerships in sustainable and energy efficient design.

National Coal Council (2014). Appointed by US DoE Secretary Moniz to serve on the National Coal Council for 2014-2015. NCC is established under the Federal Advisory Committee Act (1984) to inform and make recommendations to the Secretary of Energy on issues relating to coal utilization and technology.

SYNERGISTIC ACTIVITIES

National Coal Council, 2014.

Executive Committee, American Carbon Society, 2013-2019.

Editorial Advisory Board, Carbon Journal, 2004-2016.

Member, UK Mining Engineering Foundation Board

Member, Power and Energy Institute of Kentucky Board

Member, Project Lead the Way Kentucky Board.

Chair, Kentucky EPSCoR NSF Sub-Committee

Advisory Committee, American Carbon Society, 2004-2010.

Technical Advisory Committee, Carbon 2007: An International Conference on Carbon, Seattle, WA, July 2007.

Program Chair, Workshop on Porous Carbons: Adsorbents for CBRN Protection, Seattle, Washington, July 2007.

Executive Council, Consortium for Premium Carbon Products from Coal, 2006-2008.

Program Chair, Workshop on Carbon Nanotube Reinforced Composites, January 2005, Lexington, KY.

Program Chair, Workshop on Porous Carbons in Energy Applications, July 2004, Lexington, KY.

Science Advisory Committee, Carbon 2004: An International Conference on Carbon, July 2004, Providence, RI.

Advisory Committee Chair, Consortium for Premium Carbon Products from Coal, 2003-2006.

Technical Program Chair, Carbon 2001: An International Conference on Carbon, July 2001, Lexington, KY.

Delegate, NATO Advanced Study Institute: Design and Control of Structure of Advanced Carbon Materials for Enhanced Performance, Antalya, Turkey, May, 1998.

GRANTS AND CONTRACTS

Active Grants

Andrews, R. (PI/PD). "NSF EPSCOR RII Track 1: Powering the Kentucky Bioeconomy for a Sustainable Future", $20,000,000. 7/1/14-6/30/19.

Andrews, R. (PI/PD). "State Match for EPSCoR Track 1 RII", Kentucky EPSCoR, $4,000,000. 7/1/14-6/30/19.

Andrews, R. (PI). "Design and Construction of Coal/Biomass-to-Liquids (CBTL) Process Development Unit at University of Kentucky", Department of Energy, $5,735,007, 8/6/08 – 6/30/17.

Andrews, R. (PI). "KY Research Consortium for Energy and Environment: Administration Scope", Department of Energy, $1,578,757, 4/1/09 – 9/30/14.

Andrews, R. (PI). "Kentucky Research Consortium for Energy and Environment", Department of Energy, $8,095,510, 4/1/09 – 9/30/14.

Andrews, R. (PI). "NSF/EPSCoR: Transforming Kentucky's New Economy with EPSCoR", National Science Foundation, $13,738,500, 9/1/08 – 8/31/14.

Andrews, R. (PI). "AOI1:Small-scale pilot plant for the gasification of coal and coal/biomass blends and conversion of derived syngas to liquid fuels ...", Department of Energy, $1,300,000, 10/1/12 – 9/30/17.

Andrews, R. (PI). "Kentucky Argonne National Battery Manufacturing Research and Development Center", Kentucky Energy and Environment Cabinet, $315,262, 12/7/12 – 6/30/14.

Andrews, R. (PI). "Coal Fuel Alliance (CFA): Design and Construction of Early Lead Mini Fischer-Tropsch Refinery at the University of Kentucky Center for Applied Energy Research", Department of Energy, $4,567,940, 8/6/08 – 9/30/15.

Completed Grants

Andrews, R. (PI). "Demonstration of an Algae-based System for CO2 Mitigation from Coal-fired Power Plants", Kentucky Energy and Environment Cabinet, $686,555, 11/15/12 – 12/31/13.

Andrews, R. (PI), "ARRA: EFRI-HyBI: Lignin Deconstruction for the Production of Liquid Fuels", National Science Foundation, $1,984,322, 9/1/09 – 8/31/13.

Andrews, R. (PI), "Exploration of the Applications of Graphene", Grupo Antolin Ingeniería SA, $100,000, 2/1/12 – 1/31/13.

Andrews, R. (PI), "Establishment of a Laboratory for Biofuels at the University of Kentucky", Department of Energy, $2,412,175, 7/1/08 – 1/1/13.

Andrews, R. (PI), "Demonstration of an Algae-based System for CO2 Mitigation from Coal-fired Power Plants", Kentucky Energy and Environment Cabinet, $761,553, 7/1/11 – 12/31/12.

Andrews, R. (PI), "ARRA: Expansion of The University of Kentucky Center for Applied Energy Research Laboratory Facilities", National Institute of Standards & Technology, $11,832,685, 2/1/10 – 7/31/12.

Andrews, R. (PI), "ARRA Match: Kentucky Argonne National Battery Manufacturing Research and Development Center", Kentucky Energy and Environment Cabinet, $3,500,000, 7/1/10 – 6/30/12.

Andrews, R. (PI), "ARRA: High Performance Sustainable Energy Research Laboratory (SEP)", Kentucky Energy and Environment Cabinet, $3,500,000, 7/1/10 – 6/30/12.

Andrews, R. (PI), "Matching funding support for CTL Mini-Refinery - Year 3", Kentucky Energy and Environment Cabinet, $677,730, 8/1/10 – 6/30/12.

Andrews, R. (PI), "Short Form Coal Education Videos", Kentucky Energy and Environment Cabinet, $120,000, 7/1/11 – 6/30/12.

Andrews, R. (PI), "University Energy Clubs", Kentucky Energy and Environment Cabinet, $172,289, 8/1/10 – 6/30/12.

Andrews, R. (PI), "Development of an Algae-based System for CO2 Mitigation from Coal-fired Power Plants - Year 3", Kentucky Energy and Environment Cabinet, $629,826, 8/1/10 – 12/31/11.

Andrews, R. (PI), "Carbon Foam-Based Protection Systems", National Institute for Hometown Security, $836,964, 3/9/09 – 9/8/11.

Andrews, R. (PI), "CAER Regional Energy Offices and Energy Policy Analysis", Kentucky Energy and Environment Cabinet, $140,474, 1/1/11 – 6/30/11.

Andrews, R. (PI), "CAER Regional Representatives", Kentucky Energy and Environment Cabinet, $247,725, 7/1/09 – 12/31/10.

Andrews, R. (PI), "Development of an Algae-Based System for CO2 Mitigation from Coal-Fired Power Plants", Kentucky Office of Energy Policy, $2,574,728, 9/16/08 – 6/30/10.

Andrews, R. (PI). "Multifuncational Polymer Composites SBIR Phase II", Materials Sciences Corp, $229,622, 4/3/08 – 2/19/10.

Andrews, R. (PI), "R&D Seed Grant: On-site Thermochemical Densification of Biomass", Kentucky Office of Energy Policy, $133,124, 10/1/07 – 12/31/09.

Pienkowski, D. (PI), Andrews, R. (Co-I), "KSEF KCF: 21st Century Bone Cement", Kentucky Science and Technology Co. Inc., $102,500, 1/1/09 – 12/31/09.

Andrews, R. (PI). Call-off Contract, Defense Science and Technology Laboratory, Ministry of Defense, United Kingdom, $800,000 total, 10/1/05-9/30/09:

"Pleated Activated Carbon Fiber Composites – Phase 1", $36,933

"Regenerable Rotary Adsorption Unit for ColPro", $44,890

"Pleated Activated Carbon Fiber Composites – Phase 2", $44,500

"Nanotube Membrane Materials – Year 1", $100,000

Andrews, R. (PI), "Regional Energy Partnerships - Kentucky Regional Offices", Kentucky Office of Energy Policy, $100,000, 2/1/08 – 6/30/09.

Andrews, R. (PI). "DoD SBIR Phase 2: Carbon Nanotube Composite Epoxy Resins for Improved Thermal Conductivity and Damage Resistance", US Army –AMRDEC (as subcontract from Materials Sciences Corp.), $245,000, 7/1/2007-6/30/2009 (project period may change).

Andrews, R. (PI), "CAER and KGS Advisory Support of State Energy Related Issues", Kentucky Energy and Environment Cabinet, $120,000, 9/15/08 – 6/30/09.

Lumpp, J. (PI), Andrews, R. (co-PI with 7 others). "Advanced Carbon Nanotechnologies Program", Army Research Laboratory (as subcontract from Vanderbilt University), $2,400,000 UK Share, 5/20/04-5/19/09.

Andrews, R. (PI), "Carbon Nanofibers, Testing and Fabrication", Materials Sciences Corp, $20,155, 2/1/08 – 10/15/08.

Andrews, R. (PI). "R&D Seed Grant: Feasibility of Capture and Utilization of CO2 from Kentucky Power Plants by Algal Systems", Kentucky Office of Energy Policy, $47,156, 5/1/07 – 6/30/08.

Andrews, R. (PI), "Consortium for Advanced Power Generation", Kentucky Office of Energy Policy, $110,000, 10/1/07 – 6/30/08.

Andrews, R. (PI). "Development of an Integrated Process for Converting Glycerin to Green Power in a Biodiesel Plant", Kentucky Office of Energy Policy, $160,000, 5/1/07 – 6/30/08.

Andrews, R. (PI). "Workshop on Porous Carbons: Adsorbents for CBRN Protection", Army Research Office, $25,000, 7/1/07 – 6/30/08.

Andrews, R. (PI). "Process Development of Pitch-Based Carbon Fiber Core / Evergreen Solar", Evergreen Solar Inc., $235,669, 10/1/07 – 4/30/08.

Andrews, R.(PI). "DoD SBIR Phase II: High Strength Nanomaterials Fiber for Lightweight Composite Missile Cases", US Army –AMRDEC (as subcontract from Materials Sciences Corp.), $235,996, 10/1/06-2/28/08.

Crocker, M. (PI), Andrews, R. (Co-I). "Novel Concepts for Low Temperature Hydrocarbon SCR Catalysts Development", Coordinating Research Council, $174,135, 2/1/05-1/31/08.

Lipka, S. (PI), Andrews, R. (co-PI). "Active Materials for Capacitors from Coal", US DoE Consortium for Premium Carbon Products from Coal, $100,000, 3/1/06-12/31/07.

Andrews, R. (PI). "Clean Coal: Understanding and Accepting Clean Coal Technologies – Educating the Public about CTL and SNG", Governor's Office of Energy Policy, $45,400, 2/23/07-6/30/07.

Andrews, R. (PI). "Conversion of Illinois Basin Coal to Transportation Fuels", Governor's Office of Energy Policy, $141,443, 1/1/06-6/30/07.

Andrews, R. (PI). “Carbon Materials for Blast Mitigation and IED Containment”, Department of Homeland Security (National Institute for Hometown Security), $1,009,058, 7/1/05-6/30/07.

Andrews, R. (PI). “DoD SBIR Phase 1: Carbon Nanotube Composite Epoxy Resins for Improved Thermal Conductivity and Damage Resistance”, US Army –AMRDEC (as subcontract from Materials Sciences Corp.), $12,000, 1/8/07-5/31/07.

Andrews, R. (PI). “UK Major Research Equipment Grant: TA Instruments AR2000 Rheometer and Q600 Combined TGA/DSC”, University of Kentucky Office of the Vice President for Research, $99,325, 3/2/07-6/30/07.

Andrews, R. (PI), Challman, D. “Clean Coal: Strategy for Coal-to-Liquids Fuels Production in Kentucky”, Governor’s Office of Energy Policy, $100,000, 8/1/06-2/28/07.

Andrews, R. (PI). “Koppers Inc Student Gift”, Koppers Inc., $30,000, 2006.

Andrews, R. (PI). “Pitch/Polymer Blends for CO_2 Adsorbents”, US DoE Consortium for Premium Carbon Products from Coal, $66,800, 7/1/05-12/31/06.

Andrews, R. (PI). “DoD SBIR: Multifunctional Polymers for Composite Structures”, US Army –AMRDEC (as subcontract from Materials Sciences Corp.) $12,000, 7/31/06-9/22/06.

Andrews, R. (PI). “Carbon Nanotube Reinforced Fibers for Cabling and Tethers”, Institute for Scientific Research, $211,561, 9/1/04-8/31/06.

Andrews, R. (PI), Schobert, H. (co-PI, Pennsylvania State University). “Advanced Gasification Byproduct Utilization”, US DoE University Coal Research Program, $379,000, 9/1/03-8/31/06. RA was co-PI until 2006 and PI after original PI, A. Geertsema, left UK.

Andrews, R. (PI). “Mild Coal Extraction for the Production of Anode Coke”, US DoE Consortium for Premium Carbon Products from Coal, $105,700, 3/1/05-6/30/06. RA was co-PI when grant written and then PI when A. Berkovich left UK.

Andrews, R. (PI), Zondlo, J. (co-PI, West Virginia University). “Continued Development of Pitch Derived Fibers and Foams”, US DoE Consortium for Premium Carbon Products from Coal, $79,045, 3/1/05-2/28/06.

Andrews, R. (PI). “Technical and Economic Assessment of Mild Coal Extraction”, US DoE Consortium for Premium Carbon Products from Coal, $74,647, 3/1/04-8/31/05.

Crofcheck, C. (PI), Andrews, R. (co-PI). “Utilization of Nickel Nanoparticles to Facilitate the Recovery of Histidine-tagged Proteins”, Kentucky Science and Engineering Foundation, $15,000, 7/1/04-6/30/05.

Andrews, R. (PI). “Nanocomposite Materials Using Multiwall Carbon Nanotubes and Thermoplastic Elastomers”, Kuraray Co., $25,739, 11/1/04-3/31/05.

Andrews, R. (PI). “Accelerated Processing of Isotropic Carbon Fibers from Coal”, US DoE Consortium for Premium Carbon from Coal, $58,391, 3/1/04-2/28/05.

R. Andrews (PI), M. Meier (co-PI). “Ultrahigh Strength Carbon Nanotube Composite Fibers”, Kentucky Science and Engineering Foundation, $141,080, 7/1/03-6/30/05.

McNeil, S. (PI), Andrews, R. (co-PI). “Conversion of Soybean Oil to Hydrogen by Delayed Coking”, Kentucky Soybean Producers Board, $20,000, 2004.

Selegue, J. (PI), Andrews, R. (co-PI). “MRI: Acquisition of Instrumentation for Thermal Characterization of Materials”, National Science Foundation, $172,063, 8/1/03-7/31/04.

Andrews, R. (PI), Berkovich, A.. “Coal-derived Pitch Fiber Reinforced Fly Ash Concrete”, US DoE Consortium for Premium Carbon Products from Coal, $99,249, 8/1/03-7/31/04.

Andrews, R. (PI). “UK Major Equipment Grant: TePla M4L Plasma Processing System”, University of Kentucky Office of the Executive Vice President for Research, $44,300, 11/14/2004-6/30/2004.

Andrews, R. (PI), Zondlo, J. (co-PI, West Virginia University). “Nanotube Enhancement of Coal Extract Pitches: Fibers and Foams”, US DoE Consortium for Premium Carbon Products from Coal, $224,169, 3/1/03-2/29/04.

Andrews, R. (PI). “Activated Pitch-derived Carbons for Cigarette Filter Applications”, Filtrona Technology Centre, $11,273, 9/1/03-12/31/03.

Andrews, R. (PI). “Integrated Microsensor Devices and Systems”, US DoE EPSCOR (as subcontract from University of Louisville), $32,000, 10/1/01-9/30/03.

Andrews, R. (PI). “Value-Added Carbon Products from PCC and IGCC Byproducts”, US DoE Consortium for Premium Carbon Products from Coal, $140,642, 7/1/02-6/30/03.

Andrews, R. (PI). “Fibers and Composites from Coal-based Precursors”, US DoE Consortium for Premium Carbon Products from Coal, $57,451, 3/1/02-6/30/03.

Andrews, R. (PI). “Development of New Pressure Swing Adsorption Technology to Recover High Valued Products from Chemical Plant and Refinery Waste Streams”, US DoE (as subcontract from Air Products and Chemicals, Inc.), $80,000, 3/15/00-3/14/03.

Andrews, R. (PI), Berkovich, A. “Production of Bulk Carbon Fibers and Activated Carbon Fibers via Centrifugal Melt Spinning (CMS)”, US DoE Consortium for Premium Carbon Products from Coal, $115,839, 3/1/02-3/1/03.

Andrews, R. (PI). “Development of Pitch-derived Activated Carbons for Cigarette Filter Applications”, Filtrona Technology Centre, $7,030, 10/1/02-12/31/02.

Andrews, R. (PI). “A Feasibility Study”, Conoco, Inc., $44,257, 6/1/02-11/30/02.

Grulke, E. (PI), Andrews, R. (co-PI), with 3 other Co-PIs. “NSF-MRSEC: Advanced Carbon Materials Center”, National Science Foundation, $4,164,000, 10/1/98-8/31/02 (RA a co-PI for last 2.5 years of grant).

Andrews, R. (PI). “Separations of CO2 from Flue Gases by Carbon-Multiwall Carbon Nanotube Composites”, US DoE University Coal Research, $65,447, 9/1/00-8/31/01.

Andrews, R. (PI). “Manufacture and Testing of NT/Polymer Composite Fibers”, Materials Electrochemical Research Corporation (US Army SBIR), $23,986, 3/1/01-8/30/01.

Andrews, R. (PI). “MWNT/PS Composites for Electronic Carrier Tape”, TekPak, Inc., $13,941, 9/1/00-7/1/01.

Andrews, R. (PI). “Production of Carbon Fibers and Composites from Coal-Based Precursors”, US DoE Consortium for Premium Carbon Products from Coal, $80,000, 6/1/00-5/30/01.

PATENTS AND INTELLECTUAL PROPERTY

Due to the applied focus of the work at the Center for Applied Energy Research, much of the work carried out is directed toward the generation of intellectual property, with principal metrics being the granting of patents and licensing of technologies.

Granted patents:

7. US Patent 8,167,955 Carbon fiber reinforced carbon foams for repair and reconstruction of bone defects (2012) Marrs, B. H., Andrews, R., Cunningham, L. Jr.
8. US Patent 7,504,078 Continuous production of aligned carbon nanotubes (2009) Jacques, D. N., Andrews, R.
9. US Patent 7,160,531 Process for the continuous production of aligned carbon nanotubes (2007) Jacques, D. N., Andrews, R.
10. US Patent 6,908,572 Mixing and dispersion of nanotubes by gas or vapor expansion (2005) Derbyshire, F. J., Andrews, R., Safadi, B.
11. US Patent 6,872,403 Polymethylmethacrylate augmented with carbon nanotubes (2005) Pienkowski, D. A., Andrews, R.
12. US Patent 6,599, 961 Polymethylmethacrylate augmented with carbon nanotubes (2003) Pienkowski, D. A., Andrews, R.

In-process and published applications:

1. US Patent Application Publication 2011/0111227 A1 (May 12, 2011). Method for Production of Germanium Nanowires Encapsulated within Multi-walled Carbon Nanotubes. Crocker, M., Andrews, R., Pandurangan, A., Qian, D.
2. US Patent Application Publication 2012/0207975 (Aug 16, 2012). Lightweight Fire Resistant Covering for Structures. Andrews, R., Meier, M., Golubic, T., Yeary, P.

Licensing:

1. Patents 2,3, and 4 have been licensed to Xtreme Carbons, llc.
2. Technology for algal photbioreactors has been licensed to several US clients as well as a Chinese client who is pursuing development and marketing in China.

PUBLICATIONS

Refereed Publications

Where given, number of citations is from ***www.Scopus.com*** *or Google Scholar as of June 9th, 2014. * RA is corresponding author.*

1. Duvallet, T., Zhou, Y., Robl, T.L., Andrews, R. Synthesis and Characterization of High-Iron Alite-Calcium Sulfoaluminate-Ferrite Cements produced from Industrial By-Products. (2014) Coal Combustion and Gasification Products Journal. 6, pp.29-34.
2. Wilson, M.H.; Groppo, J.; Placido, A.; Graham, S.; Mortin III, S.A.; Santillan-Jimenez, E.; Shea, A.; Crocker, M.; Crofcheck,C.; Andrews, R. CO2 recycling using microalgae for the production of fuels. (2014) Applied Petrochemical Research. 4, pp. 41-53.
3. Crofcheck, C., Shea, A., Montross, M., Crocker, M., Andrews, R. Influence of flue gas components on the growth rate of chlorella vulgaris and scenedesmus acutus. (2013) Transactions of the ASABE. 56 (6), pp. 1421-1429. *Cited 1 time*.
4. Shi, W., Venkatachalam, K., Gavalas, V., Qian, D., Andrews, R., Bachas, L.G., Chopra, N. The role of plasma treatment on electrochemical capacitance of undoped and nitrogen doped carbon nanotubes. (2013) Nanomaterials and Energy. March/April, 2(2), pp. 71-81. *Cited 1 time.*
5. Bradley, R.H., Cassity, K., Andrews, R., Meier, M., Osbeck, S., Andreu, A., Johnston, C., Crossley, A. Surface studies of hydroxylated multi-wall carbon nanotubes. (2012) Applied Surface Science. 258, pp. 4835-4843. *Cited 14 times.*
6. Crofcheck, C., Shea, S.E.A., Montross, M., Crocker, M., Andrews, R. Influence of media composition on the growth rate of Chlorella vulgaris and Scenedesmus acutus utilized for CO2 mitigation. (2012) Journal of Biochemical Technology. 4, pp. 589-594. *Cited 2 times.*
7. Qian, D., Andrews, R., Weisenberger, M., Meier, M.S. Nitrogen-containing carbon nanotubes and Y-junctions by floating catalytic chemical vapor deposition. (2012) Nanomaterials and Energy. 1(3), pp. 168-179. *Cited 2 times.*
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1. Andrews, R. "Carbon Capture Technologies in Coal-fired Power Plants", 65th Annual Association of Rural Electric Generating Cooperative Conference, Louisville, KY, June 23rd, 2014.
2. Santillan-Jiminez, E.; Andrews, R. "Current Energy Issues in the United States" ESIREM and the University of Burgundy, November 19, 2013.
3. Guarr, T.; Andrews, R. "Materials Needs & Biofuels," Michigan State University Bioeconomy Institute, Holland, MI, October 9-10, 2013.
4. Andrews, R.; Jacques, D. "Chemical Modification of Carbon Nanotube Surfaces," 2012, Oxford Surfaces Meeting, November 28-29, 2012.
5. Andrews, R.; Lipka, S. "Designer Nanotubes: The role of Materials Synthesis in Application Driven Composites Engineering," American Carbon Society Symposium: Carbons for Energy Applications, March 28-29, Atlanta, GA, 2012.
6. Andrews, R. "Current Status of Coal-to-Liquids Technologies," 2011, Congressional Coal Caucus Briefing Update Meeting, CTL & CCUS, March 16, 2011.
7. Andrews, R.; Marrs, B. "Nanomaterials: An Overview and their Application in Dentistry," 2010, Federal University of Uruguay, November 16-21, 2010.
8. Andrews, R. "Clean Coal Technologies,", Council of State Governments, Palm Springs, CA, November 13, 2009.
9. Andrews, R.; Medina, S.; Neathery, J. "CO2 Scrubbing with Algae: CAER Project Status," Cooperative Research Network Translation Group, Washington DC, April 30, 2009.
10. Andrews, R. "CO_2 Capture Technologies," 2009, Carnegie Mellon Electricity Industry Center, April 29, 2009.
11. Andrews, R. (Keynote). "Kentucky's Place in a Carbon-Constrained World." Lexington Coal Exchange, September 7. 2007.
12. Andrews, R. "Coal-to-Liquids and Coal-to-Gas Technologies", Appropriations and Revenue Committee, Newport, KY, June 21, 2007.
13. Andrews, R. "Technical outlook for Coal-to-Liquids and Coal-to-gas plants in KY", Joint Interim Special Subcommittee on Energy, Frankfort, KY, May 30, 2007.
14. Andrews, R. "UK Bioenergy Research Portfolio", presented to the Southeast University Research Association. Washington, DC, February 27-28, 2007.
15. Andrews, R. "UK CAER and the Outlook for Coal-to-Liquids in Kentucky", Briefing to Secretary of Energy Bodman, Ashland, KY, October 27th, 2006.
16. Andrews, R. "Utilizing Kentucky's Energy Resources", Governor's Energy Summit, Louisville, KY, October 20th, 2006.

17. Andrews, R. “Utilizing Kentucky’s Energy Resources: The Outlook for Coal”, Appalachian Regional Commission, Pikeville, KY, October 12th, 2006.

18. Andrews, R. “Energy Technologies for the Future: Research, Development and Educational Needs”, Subcommittee on Postsecondary Education, Versailles, KY, October 9th, 2006.

19. Andrews, R, Weisenberger, M.C., Rantell, T. “Thermomechanical Properties of Carbon Nanotube Composite Materials,” 34th Annual Conference of the North American Thermal Analysis Society, August 5-9, Bowling Green, KY, 2006.

20. Andrews, R. “Multiwalled Carbon Nanotubes: Adsorbents, Supports and Membranes. British Carbon Group Summer School - Nanoporous Carbons Adsorbents: The Key to High Performance Filtration”. Aberdeen, Scotland, July 13-15th, 2006.

21. Weisenberger, M.C., Andrews, R., Jacques, D., Rantell, T., Meier, M., Fiztwater, C. “Multiwall Carbon Nanotubes in PAN-based Carbon Fiber,” Space Exploration 2005, April 4-6, Albuquerque, NM, 2005.

22. Andrews, R., Jacques, D., Lipka, S., Qian, Q., Rantell, T., Anthony, J. “Multiwalled Carbon Nanotubes for Energy Storage and Production Applications”, CESEP’05: Carbon for Energy Storage and Environment Protection, Orleans, France, October 2-6, 2005.

23. Andrews, R.; Jacques, D. "Multiwall Carbon Nanotubes for Energy Production and Storage," Carbons for Energy Storage and Environmental Protection, October 2-6, Orleans, France, 2005.

24. Andrews, R.; Rantell, T.; Jacques, D.; Meier, M.; Fitzwater, C.; Qian, D. "MWNT-Polymer Composites For Structural, Thermal and EMI Shielding Applications," Carbons for a Green Planet Workshop, May 22, State College, PA, 2005.

25. Andrews, R., Chopra, N., Crocker, M., Gonzalez, R., Graham, D., Hinds, B., Jacques, D., Likpa, S., Qian, D., Rantell, T., Shafer, W. “Multiwalled Carbon Nanotubes as Porous Carbons: Adsorbents, Supports and Membranes,” Workshop on Porosity & Adsorption in Carbons, Apr. 28-29, Aberdeen, Scotland, 2004.

26. Andrews, R. “Nanotube Composite Fibers,” Second International Space Elevator Conference, September 12-15, Santa Fe, NM, 2003.

27. Andrews, R. “Synthesis and Properties of MWNT Composite Materials”, Space Elevator Conference, August 10-14, Seattle, WA, 2002

28. Andrews, R. “Multiwall Carbon Nanotubes: Synthesis and Composite Applications”, Foresight Conference on Nanotechnology, Bethesda MD, October 11-13th, 2002.

29. Andrews, R. “Processing & Properties of Functionalized Nanotube Composite Material”, Materials Research Society Annual Meeting, November 25-28, Boston, MA, 2001.

30. Andrews, R. “Processing & Properties of Nanotube Composite Materials”, The Metals, Minerals and Materials Society Fall Meeting, November 5-7, Indianapolis, IN, 2001.
31. Andrews, R. “Synthesis and Processing of Nanotube Composite Materials”, American Carbon Society Workshop on Future Directions for Carbon Fibers, Clemson University, October, 2000.
32. Andrews, R., Jacques, D., Rao, A. M., Derbyshire, F. J., Qian, D, Fan, X., Dickey, E. C., Chen, J. “Continuous Production of Aligned Carbon Nanotubes”, Commercialization Advances in Large-scale Production of Carbon Nanotubes, Apr. 22-23, Washington, DC, 1999.

Selected Conference Papers and Presentations

1. Andrews, R. “Energy Technologies: Opportunities for Study at the University of Kentucky,” Charles de Gaulle High School, Dijon, France, November 20, 2013.
2. Andrews, R. “Status of Carbon Capture Technologies,” Special Legislative Subcommittee on Energy, November 15, 2013.
3. Andrews, R. “Renewable Energy Projects,” Winchester Rotary Club, Winchester, KY, July 6, 2013.
4. Andrews, R. "Energy Storage Options," KAM Energy Conference, May 14, Lexington, KY, 2013.
5. Andrews, R.; Medina, S. “The Changing Energy Landscape,” Gray Construction Risk Management Seminar, Lexington, KY, April 12, 2013.
6. Andrews, R. “Long-Range Outlook for Coal,” 2012, Lexington Coal Exchange, Inc., December 14, 2012.
7. Andrews, R. “Future of Coal,” 2012, 2nd Annual Kentucky Energy Management Conference, Lexington, KY, December 11-12, 2012.
8. Andrews, R. “University of Kentucky Research Activities,” Association of Public & Land-Grant Universities Conference on Future of Energy, Columbus, OH, April 29-30, 2012.
9. Andrews, R.; Crocker, M.; DeBolt, S.; Meier, M.; Morton, S.A. "Lignin deconstruction for the production of liquid fuels and chemicals," 244th American Chemical Society Meeting, August 19-23, Philadelphia, PA, 2012.
10. Andrews, R. “Energy Research at the University of Kentucky” Southeast Biofuels & Renewable Energy Conference, Jackson, MS, August 8-9, 2012.
11. Crofcheck, C.; Monstross, M.; Xinyi, E.; Shea, A.; Crocker, M.; Andrews, R. "Influence of media composition on the growth rate of Chlorella vulgaris and Scenedesmus acutus utilized for CO2 mitigation," American Society of Agricultural and Biological Engineers Annual International Meeting, July 29-Aug. 1, Dallas, TX, 1, 532-549, 2012.

12. Andrews, R. "New Coal Technologies," Kentucky Association of Manufacturers, KAM, Energy Conference, June 13, Louisville, 2012.
13. Andrews, R.; Liu, K. Briefing on Outcomes of Visit to China with President Capilouto, Board of Trustees Meeting, June 18, 2012.
14. Andrews, R. “Presentation on Technologies for Biomass Use for Fuels and Power,” Department of Forestry’s Bioenergy Seminar, February 24, 2012.
15. Andrews, R. “Clean Coal Technology Research in Kentucky,” CCTR Board Meeting, December 18, 2011.
16. Andrews, R. “Technologies for CTL/CBTL,” Governor’s Conference on Energy & the Environment, September 26-27, 2011.
17. Andrews, R. “Current Activities at the Center for Applied Energy Research,” Kentucky Special Subcommittee on Energy, August 19, 2011.
18. Andrews, R. “Petroleum Pricing and Alternative Fuels,” Patterson School of Diplomacy, Spring 2011.
19. Andrews, R. “Present on current energy issues for KY”, Senate Democratic Caucus, December 13, 2010.
20. Andrews, R. “Biomass Energy Opportunities for Kentucky,” KAC Agri-Energy Committee Meeting, Division of Conservation Offices, December 7, 2010.
21. Andrews, R. “Energy Issues,” Power & Energy Institute of Kentucky, November 12, 2010.
22. Andrews, R.; Crocker, M.; DeBolt, S.; Meier, M.; Morton, S. "Lignin Deconstruction for the Production of Liquid Fuels," Strategic Initiative Workshop: Sustainable production of transportation fuels and chemicals: challenges and opportunities, April 26-28, Ostende, Belgium, 2010.
23. Andrews, R.; Crocker, M.; DeBolt, S.; Meier, M.; Morton, S.A. "Lignin Deconstruction for the Production of Liquid Fuels," 240th ACS National Meeting, August 22-26, Boston, MA, 2010.
24. Wilson, M.; Fisk, C.A.; Groppo, J.; Morton, S.; Antonson, E.; Crocker, M.; Andrews, R.; Crofcheck, C.; Montross, M. "Development of an Algae-Based System for CO2 Mitigation from Coal-Fired Power Plants," 2010 Annual International Meeting for the American Society of Agricultural and Biological Engineers, June 20-23, Pittsburgh, PA, 2010.
25. Andrews, R. "Energy supply and demand - the current outlook," Biomass to Energy an overview short course, Apr. 14, West Liberty, KY, 2010.
26. Andrews, R. "Syngas conversion to liquid fuels," Biomass to Energy an overview short course, Apr. 14, West Liberty, KY, 2010.
27. Andrews, R. “Panel Discussion on World Energy Demand with former President of India Kalam,” Gatton College of Business and Economics, University of Kentucky, Lexington, KY, April 13, 2010.

28. Andrews, R. “Kentucky’s Energy Outlook,” Lexington/Louisville Meeting of IEEE, December 17, 2009.
29. Andrews, R. “Testimony on CO2 Technologies and Impact for KY,” Natural Resources & Environment Committee, October 22, 2009.
30. Andrews, R. “Kentucky’s Place in a Carbon-Constrained World,” 33rd Governor’s Conference on the Environment – Energy & Environment Empowering our Future, September 30, 2009.
31. Andrews, R. “The Impact of Cap and Trade,” Commerce of Lexington Meeting, Lexington, KY, September 3, 2009.
32. Andrews, R. “New Energy Economy for Kentucky,” Economic Success Through Diversity Summit, August 27, 2009.
33. Andrews, R. “Kentucky’s Place in a Carbon-Constrained World,” Shelbyville Rotary Club, Shelbyville, KY, August 18, 2009.
34. Andrews, R. “Biomass Energy Opportunities,” Kentucky Forest Industries Association, Lexington, KY, April 3, 2009.
35. Andrews, R. “CO2 Capture Technologies and Costs,” Kentucky Industrial Utilities Customers Assoc., Lexington, KY, March 26, 2009.
36. Andrews, R. “Coal Gasification for Power and Fuels,” Kentucky Chapter of the Sierra Club, Covington, KY, December 6, 2008.
37. Andrews, R.; Verclos, O.; Jacques, D.; Gonzalez, R.; Qian, D. "Etching of Carbon Nanotubes by steam Activation," MRS International Materials Research, June 9-12, Chongqing, China, 2008.
38. Andrews, R. “Natural Gas for CO2 Reductions,” House Natural Resources Committee Kentucky Legislation, June 11, 2008.
39. Andrews, R. “Carbon Capture Technologies Briefing,” Kentucky Public Service Commission, 2008.
40. Bortz, D.; Weisenberger, M.; Andrews, R. "Temperature Dependant Creep Performance of Multiwall Carbon Nanotube - Polymer Composites," ACS, Division of Polymeric Materials, Apr. 6-10, 2008, New Orleans, LA, 2008.
41. Bortz, D.; Weisenberger, M.; Marrs, B.; Andrews, R. "Fatigue Performance of Multiwall Carbon Nanotube Composite PMMA and ABS," ASME International Mechanical Engineering Congress (IMECE 2008) Oct 31-Nov. 6, Boston, MA, Proceedings, IMECE2008-67578, 2008.
42. Kunadian, I.; Andrews, R.; Menguc, M.P.; Qian, D. "Deposition profiles of multiwalled carbon naotubes inside a CVD reactor," University of Kentucky Graduate Student Interdisciplinary Conference, Mar. 28, Lexington, Ky, 2008.
43. Qian, D.; Andrews, R.; Jacques, D. "CVD Synthesis and Thermal Structural Stability of N-doped Carbon Nanotubes," MRS International Materials Research Conference, June 9-12, Chongqing, China, 2008.

44. Gardner, J. S.; Andrews, R. J.; Hower, J. C.; Amick, M. "Blue Gem Coal, Southeastern Kentucky: a Prime Resource for the Production of Silicon Metals and Anode Coke for Aluminum," Geological Society of America, Southeastern Section, Mar. 30, Savannah, GA, Geological Society of America, Abstracts with Programs, 39, 2007.

45. Hower, J.C.; Andrews, R.J.; Rantell, T.; Gardner, J.S.; Amick, M. "Utilization of coal for production of silicon metals and aluminum: Example of the Blue Gem coal, southeastern Kentucky," 2007 Annual Meeting of the Geological Society of America, Oct. 28-31, Denver, CO, Abstracts with Programs, 39(7) 174, 2007.

46. Kunadian, I.; Andrews, R. "Thermoelectric power generation using carbon nanotubes.," University of Kentucky Graduate Student Interdisciplinary Conference, Apr. 13, Lexington, KY, 2007.

47. Kunadian, I.; Andrews, R. "Growth kinetics of carbon nanotubes synthesized via floating catalyst chemical vapor deposition (CVD) method," University of Kentucky Graduate Student Interdisciplinary Conference, Apr. 13, Lexington, Ky, 2007.

48. Kunadian, I.; Andrews, R.; Qian, D.; Menguc, M.P. "CFD analysis of the effect of substrates on carbon nanotube production rate in a chemical vapor deposition (CVD) reactor," ASME International Mechanical Engineering Congress and Expostion, Nov. 10-16, Seattle, WA, 2007.

49. Kunadian, I.; Andrews, R.; Menguc, M.P. "Thermoelectric power generation using semi-conducting multiwall carbon nanotubes," ASME International Mechanical Engineering Congress and Expostion, Nov. 10-16, Seattle, WA, 2007.

50. Kunadian, I.; Andrews, R.; Qian, D.; Menguc, M.P. "Growth kinetics of carbon nanotubes synthesized via floating catalyst chemical vapor depostion method," ASME International Mechanical Engineering Congress and Expostion, Nov. 10-16, Seattle, WA, 2007.

51. Lipka, S.; Swartz, C.; Gonzales, R.; Andrews, R. "Noven Electrochemical Capacitors Using Coal dervied Carbons," CPCPC, Nov. 13-14, Morgantown, WV, 2007.

52. Montross, M.; Taulbee, D.; Andrews, R.; Shearer, S. "Prodution of Biomass Briquettes as an Alternative FuelSource," KREC, Nov. 29, Louisville, KY, 2007.

53. Weisenberger, M.; Meier, M.S.; Andrews, R. J. "Developments in Nanotube-reinforced Carbon Fiber," 2007 SAMPE Fall Technical Conference and Exhibition, Oct. 29 - Nov. 1, Cincinnati, OH, Proceedings 52 ITAR, 2007.

54. Qian, D.; Andrews,R.; Jacques, D.; Rantell, T. "Synthesis of N-doped carbon nanotubes and Y-junctions by catalytic chemical vapor deposition," 15th International Conference on Composites/Nano Engineering (ICCE-15) July 15-21, Haikou, China, 2007.

55. Rubel, A.; Andrews, A.; Groppo, J.; Huggins, F. "Gasifier Slag Carbons for Mercury and NOX Capture," 2007 International Conference on Coal Science and

Technology, Aug. 28-31, Nottingham, United Kingdom, Proceedings CD, Paper 8B5, 2007.

56. Andrews, R; Weisenberger, M.C.; Rantell, T. "Thermomechanical properties of carbon nanotube composite materials," 34th Annual Conference of the North American Thermal Analysis Society, Aug. 5-9, Bowling Green, KY, 2006.

57. Andrews, R. "Carbon Nanotube Enhanced Pitch: Fibers and Foams," CPCPC Spring Meeting, May 17-19, Hershey, PA, 2004.

58. Andrews, R.; Weisenberger, M. "Mild Solvent Extraction of Wood Waste," Kentucky Innovations Workshop, Mar. 3, Louisville, KY, 2004.

59. Weisenberger, M.; Andrews, R. "Ultrahigh Strength Carbon Nanotube Composite Fibers," Kentucky Innovations Workshop, Mar. 3, Louisville, KY, 2004.

60. Aslan, M.M., Kunadian, I., Andrews, R., Mengüç, M.P. “Bidirectional Evanescent and Transmitted Light Scattering Profiles of CVD synthesized Carbon Nanotubes (CNTs) for Ex-situ Characterization of Structural Formation”, NSTI Nanotech 2006, May 7-11, Boston, MA, 2006.

61. Lipka, S.M., Schwartz, C.R., Harris, T.J., Andrews, R., Crocker, M. “Alternative Material Chemistries for Hybrid Aqueous Electrochemical Capacitors”, International Seminar on Double Layer Capacitors & Hybrid Energy Storage Devices, Dec. 4-6, Ft. Lauderdale, FL, 2006.

62. Lipka, S.M., Swartz, C.R., Harris, T.J., Andrews, R., Crocker, M. “Alternative Material Chemistries for Hybrid Aqueous Electrochemical Capacitors”, International Seminar on Double Layer Capacitors & Hybrid Energy Storage Devices, Dec. 3-7, Ft. Lauderdale, FL, 2006.

63. Andrews, R., Meier, M., Weisenberger, M., Fitzwater, C., Qian, D. “Ultra-high Strength Carbon Nanotube Composite Fibers”, 3rd Annual Kentucky Innovation & Enterprise Conference, Mar. 31, Louisville, KY, 2005.

64. Andrews, R., Rubel, A., Groppo, J., Graham, D., Geertsema, A., Maroto-Valer, M.M., Lu, Z., Schobert, H. “Advanced Gasification By-Product Utilization”, 2005 Conference University Coal Research / Historically Black Colleges and Universities & Other Minority Institutions Contractors Review Meeting, June 6-8, Pittsburgh, PA, 2005.

65. Weisenberger, M.C., Andrews, R., Jacques, D., Rantell, T., Meier, M., Fitzwater, C. “Multiwall Carbon Nanotubes in PAN-based Carbon Fiber”, Carbon Nanotube Reinforced Composites Workshop, Jan. 11-12, Lexington, KY, 2005.

66. Weisenberger, M., Andrews, R., Meier, M., Fitzwater, C., Rantell, T., Jacques, D. “Carbon/Multi-Wall Carbon Nanotube Composite Fibers”, 3rd Annual Kentucky Innovation & Enterprise Conference, Mar. 31, Louisville, KY, 2005.

67. Weisenberger, M., Andrews, R. “Ultrahigh Strength Carbon Nanotube Composite Fibers”, Kentucky Innovations Workshop, Mar. 3, Louisville, KY, 2004.

68. Andrews, R., Berkovich, A., Crofcheck, C., Montross, M.. “Mild Solvent Extraction of Wood Waste”, Kentucky Innovations Workshop, Mar. 3, Louisville, KY, 2004.

69. Lipka, S., Thiebaut, N., Andrews, R., Shafer, W. “Charge Storage in Electrochemical Capacitors using Nanoscale and Nanostructured Materials”, International Workshop on Nanomaterials (NanoMat) Sept. 20-21, Lexington, KY, 2004.

70. Marrs, B., Andrews, R., Rantell, T., Pienkowski, D. “Multiwall Carbon Nanotubes Improve the Fatigue Performance of Acrylic Bone Cement”, International Workshop on Nanomaterials (NanoMat) Sept. 20-21, Lexington, KY, 2004.

71. Rubel, A.M., Andrews, R., Gonzalez, R., Groppo, J.G., Robl, T.L. “Mercury Adsorption on Combustion and Gasifier By-Products”, 56th Southeastern Meeting of the American Chemical Society, Nov 11-12, Research Triangle Park, NC, 2004.

72. Weisenberger, M.C., Andrews, R., Jacques, D., Rantell, T., Grulke, E., Meier, M. “MWNT Reinforcement of PAN-based carbon fibers”, Carbon 2004 Conference, July 11-16, Providence, RI, Proceedings, 2004.

73. Weisenberger, M.C., Andrews, R., Meier, M., Fitzwater, C. “Carbon-Carbon Nanotube Composite Fiber”, International Workshop on Nanomaterials (NanoMat) Sept. 20-21, Lexington, KY, 2004.

74. Andrews, R., Gonzalez, R., Rubel, A., Berkovich, A., Jacques, D. “Value -added Carbons from Gasifier By-Products”, 28th International Technical Conference on Coal Utilization & Fuel Systems, Mar. 12, Clearwater, FL, 2003.

75. Berkovich, A, Andrews, R., Jacques, D., Rantell, T. “Continued Development of Bulk Carbon Fiber Production using High QI Coal Tar Pitches”, 28th International Technical Conference on Coal Utilization and Fuel Systems, Mar. 12, Clearwater, FL, 2003.

76. Rubel, A., Andrews, R., Gonzalez, R., Groppo, J.G., Robl, T.L. “Adsorption of Hg and NOx on Gasifier Char Products”, 12th International Conference on Coal Science, Nov. 2-6, Cairns, Australia, Proceedings CD, Paper 14B3, 2003.

77. Weisenberger, M., Qian, D., Jacques, D., Berkovich, A., Andrews, R. “Synthesis and Applications of Multiwall Carbon Nanotubes”, KY Nanomat Workshop, Sept. 25-26, Louisville, KY, 2003.

78. Kichambare, P.K., Qian, D., Jacques, D., Andrews, R. “Microstructure and Field Emission Behavior of Undoped and Doped Multiwall Carbon Nanotubes”, MRS Conference, Apr. 1-5, San Francisco, CA, 2002.

79. Andrews, R.; Hanel, M.; Jacques, D. "Time-temperature optimization for CVD production of multiwalled carbon nanotubes," ACS, Division of Industrial and Engineering Chemistry, Aug. 26-30, Chicago, IL, 2001.

80. Andrews, R.; Anthony, J.; Bergosh, R.; Haddon, R.; Hu, H.; Landis, C.; Mier, M.; McKenzie, F.; Palmer, G.; Rantell, T.; Selegue, J. "Modified nanotubes in composite materials," ACS, Division of Industrial and Engineering Chemistry, Aug. 26-30, Chicago, IL, 2001.

81. Andrews, R. "Processing & Properties of Nanotube Composite Materials," Metals, Minerals and Materials Society Fall Meeting, Nov. 5-7, Indianapolis, IN, 2001.

82. Andrews, R. "Processing & Properties of Functionalized Nanotube Composite Material.," Materials Research Society Annual Meeting, Nov. 25-28, Boston, MA, 2001.

83. Andrews, R., Anthony, J., Bergosh, R., Haddon, R., Hu, H., Landis, C., Mier, M., McKenzie, F.; Palmer, G.; Rantell, T.; Selegue, J. “Modified Nanotubes in Composite Materials”, ACS, Division of Industrial and Engineering Chemistry, Aug. 26-30, Chicago, IL, 2001.

84. Andrews, R., Hanel, M., Jacques, D. “Time-temperature Optimization for CVD Production of Multiwalled Carbon Nanotubes”, ACS, Division of Industrial and Engineering Chemistry, Aug. 26-30, Chicago, IL, 2001.

85. Berkovich, A.J., Andrews, R., Jacques, D., Grinter, C. “Isotropic Pitch - Carbon Nanotube Fiber Composites”, ACS, Division of Industrial and Engineering Chemistry, Aug. 26-30, Chicago, IL, 2001.

86. Berkovich, A.J., Andrews, R., Jacques, D., Rantell, T. “Low-Severity Extraction of Pitch from Coal for Production of Value-added Carbon Materials”, Carbon'01 International Conference on Carbon. July 14-19, Lexington, KY, 2001.

87. Presler, A.P., Andrews, R., Rantell, T. “Synthesis and Properties of Multiwall Carbon Nanotube Reinforced Polymer Composite Fibers.” ACS, Division of Chemical Education, Apr. 1-5, San Diego, CA, 2001.

88. Selegue, J.P., Chen, B.L., Wijeratne, L., Meier, M.S., Wang, Z.W., Haddon, R.C., Hu, H., Andrews, R. “Field-Flow Fractionation of Single- and Multi-Walled Carbon Nanotubes”, ACS, Division of Industrial and Engineering Chemistry, Aug. 26-30, Chicago, IL, 2001.

89. Andrews, R., Jacques, D., Rantell, T., Jagtoyen, M., Derbyshire, F. “Isotropic Carbon Fibers and Activated Carbon Fibers from Non-Conventional Pitch Precursors”, ACS, Division of Industrial and Engineering Chemistry, Mar. 26-30, San Francisco, CA, 2000.

90. Andrews, R., Jacques, D., Minot, M., Rantell, T. “Fabrication of Carbon Multiwalled Nanotubes/Polymer Composites”, 7th International Conference on Composites Engineering, July 2-8, Denver, CO, Proceedings, 35-36, 2000.

91. Presler, A.P., Andrews, R., Rantell, T. “Effect of Spinning Temperature on the Production of Coal-derived Carbon Fibers”, ACS, Division of Chemical Education, Mar. 26-30, San Francisco, CA, 2000.

92. Andrews, R.; Dickey, B.; Qian, D.; Knuston, B.; Safadi, B.; Moore, B.; Derbyshire, F.J. "Preparation of multiwalled carbon nanotube polymer comcposites," Sixth Annual International Conference on Composites Engineering, June 27-July 3, Orlando, FL, ICCR/6, 39-40, 1999.

93. Andrews, R.; Jacques, D.; Rao, A.M.; Rantell, T.; Derbyshire, F.J.; Chen, Y.; Chen, J.; Haddon, R.C. "Composite fibers drawn from nanotube-pitch mixtures," Sixth Annual International Conference on Composites Engineering, June 27-July 3, Orlando, FL, ICCR/6, 39-40, 1999.

94. Andrews, R., Dickey, B., Qian, D., Knuston, B., Safadi, B., Moore, B., Derbyshire, F.J. "Preparation of Multiwalled Carbon Nanotube Polymer Composites", 6th Annual International Conference on Composites Engineering, June 27-July 3, Orlando, FL, ICCR/6, 39-40, 1999.

95. Andrews, R., Jacques, D., Rao, A.M., Rantell, T., Derbyshire, F.J., Chen, Y., Chen, J., Haddon, R.C. "Composite Fibers Drawn from Nanotube-Pitch Mixtures", 6th Annual International Conference on Composites Engineering, June 27-July 3, Orlando, FL, ICCR/6, 39-40, 1999.

96. Andrews, R., Jacques, D., Rao, A.M., Rantell, T., Derbyshire, F. J., Chen, Y., Chen, J., Haddon, R. C. "Nanotube Composite Carbon Fibers", American Physical Society March Meeting, Mar. 22-26, Atlanta, GA, 1999.

97. Derbyshire, F.J., Andrews, R., Jacques, D., Jagtoyen, M., Kimber, G., Rantell, T. "Stabilization and Carbonization of Pitches for Caron Fiber Production", AIChE Spring National Meeting, Mar. 14-18, Houston, TX, 1999.

98. Jacques, D., Villain, S., Rao, A.M., Andrews, R., Derbyshire, F., Dickey, B., Qian, D. "Synthesis and Growth Mechanism of Multiwalled Nanotubes", 1999 Fall Meeting of the Materials Research Society, Nov. 29 - Dec. 3, Boston, MA. 1999.

99. Qian, D., Dickey, E., Rantell, T., Andrews, R., Derbyshire, F, "In-situ TEM studies of Polymer-Carbon Nanotube Composite Deformation", Fall Meeting of the Materials Research Society, Nov. 29 - Dec. 3, Boston, MA. 1999.

100. Derbyshire, F.J., Andrews, R., Jagtoyen, M, Kimber, G, Rantell, T, Vego, A. "Carbon Fibers and Activated Carbon Fibers from Non-Conventional Pitch Precursors", Australian Coal Science Conference, Dec. 7-9, Sydney, Australia, Proceedings, 1998.

Trade Journals, Editorials and Other Press

1. Mussler, Kevin. Test Case for Universities. (Winter 2014) High Performing Buildings, ASHRAE publications.
2. Gregory, Alicia P. Green Energy. (2007) Odyssey, University of Kentucky Research. Winter edition. (highlights biofuels and photovoltaic work).
3. Andrews, R. Commentary: Change is Good. (2006) Energeia, 17(6), p. 5.

4. Andrews, R. and Hinds, B., Nanotube Membranes: Super Fast Flow in Very Small Pipes. (2006) Energeia, 17(2), p. 1-3.
5. UK Special Supplementary, Biofuels. (2006) Lane Report, July edition.
6. Andrews, R.J. Process technology: Carbon nanotubes channel fluids nearly friction free. (2006) Advanced Materials and Processes, 164 (1), p. 26.
7. Lane Report – Research Kentucky. (2004) Mass Produced Nanotubes, pg 10.
8. Andrews, R., Jacques, D. Good Guesses and Casual Comments: Twists and Turns on the Road to Making Nanotubes. (2001) Energeia, 12(6), p. 1-3.

GRADUATE STUDENTS AND COMMITTEES

Current Students

Student Name	Degree	Major	Final Exam Date
Placido, Andrew	PhD	Chemical Engineering	Not yet scheduled
Wilson, Michael	PhD	Chemical Engineering	Not yet scheduled

Completed Students

Student Name	Degree	Major	Final Exam Date
Duvallet, Tristana	PhD	Materials Science and Engineering	2/14/2014
Etheredge, Darrell	MS	Mechanical Engineering	4/18/2012
Taylor, Mark	MS	Mechanical Engineering	4/17/2012
Morris, Elizabeth	MS	Mechanical Engineering	4/19/2011
Russell, Carissa	MS	Mechanical Engineering	11/29/2010
Placido, Andrew	MS	Chemical Engineering	4/12/2010
Bortz, Daniel	MS	Manufacturing Systems Engineering	4/23/2009
Toon, Bradley	MS	Mechanical Engineering	4/14/2008
Kunadian, Illayathambi	PhD	Mechanical Engineering	4/2/2008
*Weisenberger, Matthew	PhD	Materials Science and Engineering	11/26/2007
*Marrs, Brock	PhD	Biomedical Engineering	4/16/2007
Graham, David	MS	Chemical Engineering	11/1/2004

*Supervised work, but could not serve as advisor due to faculty status.

Committee Service

Student Name	**Degree**	**Major**	**Final Exam Date**
Fitzwater , Christopher	PhD	Chemistry	Did not complete
Xu, Jiagang	PhD	Materials Science and Engineering	Not yet scheduled
Linck, Nicolas	MS	Materials Science and Engineering	7/14/2014
Borgohain, Rituraj	PhD	Chemistry	8/23/2013
Graham, Tabitha	MS	Biosystems and Agricultural Engineering	7/9/2013
Sreeramoju, Mahendra	PhD	Chemistry	4/29/2013
Kaur, Aman	PhD	Chemistry	4/15/2013
Cassidy, Keelin	MS	Biosystems and Agricultural Engineering	11/4/2011
Shu, Ying	PhD	Chemistry	12/6/2010
Rivas, Juan	MS	Biosystems and Agricultural Engineering	11/30/2010
Cassity, Kelby	PhD	Chemistry	8/23/2010
Fitzwater, Christopher	MS	Chemistry	4/6/2010
Tickle, Alison	MS	Biomedical Engineering	4/1/2010
Santillan-Jimenez, Eduardo	PhD	Chemistry	11/26/2008
Ma, Ning	PhD	Electrical Engineering	11/16/2007
Fisk, Courtney	MS	Biosystems and Agricultural Engineering	7/23/2007
Landis, Chad	PhD	Chemistry	8/23/2005
Marrs, Brock	MS	Biomedical Engineering	8/22/2003
Trinkle, Christy	MS	Mechanical Engineering	8/14/2003

POST-DOCTORAL SCHOLARS

Dali Qian, 2002-2005

Padmakar Kichambare, 2002-2004

Chris Schwartz, 2006-2007 (50% with Dr. Steve Lipka)

TEACHING

My appointments have assigned 0% DoE for teaching since 2007. However, I value the opportunity to teach, and the perspectives students can bring to many of the areas in which I work. Beginning in 2009, I developed the content and lecture materials for CME 599 Energy Systems. Later, with the College's receipt of the PEIK grant, this was modified to CME 542 Power Generation Technologies (and cross-listed as ENG and EE courses). Due to the requirements of my position (primarily travel), I have been required to use co-instructors for this course, where I have taught between 30 and 40% of the course directly. However, I have remained responsible for course content, materials used, and overall direction. As such, the course has been changed with student input to include more information on nuclear, and will have the natural gas sections expanded in the upcoming semester.

Semester	Course	Title	Enrollment	Overall Value	Quality of Teaching
S 2009	CME 599	Energy Systems	35	3.3	3.4
S 2010	CME 599	Energy Systems	45	3.7	3.6
F 2011	CME 599 EGR 542 EE 599	Power Generation Technologies	50 (21 / 5 /24)	3.8	3.8
F 2012	CME 542 EGR 542	Power Generation Technologies	46 (12 / 34)	3.9	4.0
F2013	CME 542 EGR 542	Power Generation Technologies	74 (35 / 39)	3.8	3.9

Undergraduate Student Research Opportunities

I have provided undergraduate research experience or engineering co-op positions for ~approximately 30 undergraduate students. Eight of these students were international exchange students from ESIREM, University of Burgundy, France. Several were chemistry students from Transylvania University (Lexington, Kentucky). I have consistently and successfully emphasized attracting students from underrepresented groups for these positions (e.g., 10 students were female; several were from the Appalachia region). Several of these undergraduates have gone on to pursue graduate studies in materials science or engineering.

SERVICE

Center for Applied Energy Research

Leadership Team, 2003-2007
Safety Committee, 2006-2007 (ex officio 2007- current)
Space Committee, 2004
Social Committee, 2004-2006

University

Co-chair, Research Working Group of the UK Strategic Planning Cmte, 2013-2014

Provost Search Committee, 2013

College of Design Review Committee, 2012

Chair, Kentucky Geological Survey Review Committee, 2012

UK Mining Engineering Foundation Board

UK Representative, Planning Committee, Inaugural SEC Academic Conference.

Power and Energy Institute of Kentucky Board within the College of Engineering.

Review Committee, Intellectual Property Office, 2006

Executive Committee, NSF-MRSEC Advanced Carbon Materials Center, 2000-2002

Proposal reviewer for Vice President Research internal grant support program

Professional Societies

American Chemical Society

American Carbon Society

American Institute of Chemical Engineers

Kentucky Society of Professional Engineers

Materials Research Society (past member)

Manuscript Reviews

Carbon

Fuel

Journal of Physical Chemistry B

Journal of Materials Chemistry

Journal of Materials Science

Advanced Functional Materials

Nature Materials

Chemical Communications

Journal of Applied Polymer Science

Journal of Nanoscience and Nanotechnology

Proposal Reviews

US Department of Energy (SBIR, UCR, Hydrogen Initiative)

National Science Foundation (Manufacturing, Materials, Nanoscale)

Consortium for Premium Carbon Products from Coal (~10-12 proposals/yr)

Petroleum Research Fund

US Department of Agriculture (SBIR, STTR)

Oak Ridge National Lab (Internal grants program)

US Army Corp of Engineers

Center for Nanophase Materials Science, Oak Ridge National Laboratory (user proposals)

W M Keck Foundation

US Department of State (U.S. Civilian Research & Development Foundation)

Netherlands Organisation for Scientific Research (NWO)

Swiss National Science Foundation

Viney Aneje Resume

B. Tech. 1971 Indian Institute of Technology, Kanpur, India
Major: Chemical Engineering

M.S. 1975 North Carolina State University, Raleigh, NC
Major: Chemical Engineering

PhD 1977 North Carolina State University, Raleigh, NC
Major: Chemical Engineering
Minor: Polymer Science and Operations Research

MBA 1986 Union College, Schenectady, NY
Major: Planning and Control

TEACHING AND RESEARCH AREAS

Air Quality and Atmospheric Chemistry: Transport, transformation and fate of pollutants; Natural emissions of trace gases (Nitrogen, Sulfur, and Hydrocarbons); biogeochemical cycling of pollutants; atmospheric monitoring of trace gases; biospheric-atmospheric interactions; photochemical oxidants and gas-to-particle conversion.

Dr. Aneja teaches two undergraduate courses in Introduction to Weather and Climate and Fundamentals of Air Pollution; and a graduate course in Advanced Air Quality. He also teaches numerous short courses. He has advised many undergraduate and graduate (MS and PhD) students in air quality and atmospheric sciences. He has published more than 250 papers, articles, and book chapters and one book.

SELECTED PUBLICATIONS:

Mohamed, M.F., D. Kang, and V.P. Aneja, 2002, "Volatile organic compounds in some urban locations in the United States," Chemospere, vol. 47, pp. 863-882.

Roelle, P.A., and V.P. Aneja, 2001,"Characterization of ammonia emissions from soils in the upper coastal plain, North Carolina," Atmospheric Environment, Vol. 36, pp. 1087-1097.

Roelle, P.A., and V.P. Aneja, 2001, "Nitric oxide emissions from soils amended with municipal-waste biosolids," Atmospheric Environment, Vol. 36, pp. 137-147.

Aneja, V.P., J.M. Overton, B.P. Malik, Q. Tong, and D. Kang, 2001, "Measurement and modeling of ammonia emissions at waste treatment lagoon–atmospheric interface", Journal of Water, Air, and Soil Pollution, Vol.1, pp. 177-188.

Roelle, P.A., B.H. Baek, S. Aneja, V.P. Aneja, 2001, Nitric oxide emissions from biosolid amended soils," Hydrological Science and Technology Journal, Vol. 17, pp. 306-316.

Aneja, V.P., A. Agarwal, P. A. Roelle, S.B. Phillips, Q. Tong, N. Watkins, and R. Yablonsky, 2001, "Measurements and Analysis of Criteria Pollutants in New Delhi, India", Environment International, Vol. 27, pp. 35-42.

Aneja, V.P., P. A. Roelle, and Y. Li, 2001, "Effect of Environmental Variables on NO Emissions from Agricultural Soils", Phyton, Vol. 41, pp. 27-38.

Kang, D., V.P. Aneja, R.G. Zika, C. Farmer, and J.D. Ray, 2001, "Non-methane hydrocarbons in the rural Southeast United States National Parks", Journal of Geophysical Research–Atmospheres, Vol. 105, pp. 3133-3155.

Aneja, V.P., P. A. Roelle, G. C. Murray, J. Southerland, J. W. Erisman, D. Fowler, W. A. H. Asman, and N. Patni, 2001, "Atmospheric Nitrogen Compounds II: Emissions, Transport, Transformation, Deposition and Assessment", Atmospheric Environment, Vol. 35, pp. 1903-1911.

Moore, T.C., L.J. Sullivan, P.A. Roelle and V.P. Aneja, 2001, "Vertical Distribution of Oxides of Nitrogen in the Semi-Urban Planetary Boundary Layer: Mixing Ratios, Sources and Transport," Chemosphere, Vol. 3, pp. 7-23.

Aneja, V.P., B.J. Bunton, J.T. Walker, and B.P. Malik, 2001, "Measurements and Analysis of Atmospheric Ammonia Emissions from Anaerobic Lagoons," Atmospheric Environment, Vol. 35, pp. 1949-1958.

Roelle, P.A., V.P. Aneja, B. Gay, C. Geron, and T. Pierce, 2001, "Biogenic Nitric Oxide Emissions from Cropland soils," Atmospheric Environment, Vol. 35, pp. 115-124.

Walker, J.T., D. Nelson, and V.P. Aneja, 2000, "Trends in ammonium concentration in precipitation and atmospheric ammonia emissions at a coastal plain site in North Carolina, USA," Environmental Science & Technology, Vol. 34. pp. 3527-3534.

Aneja, V.P., Chauhan J.P., Walker J.T., 2000, "Characterization of atmospheric ammonia emissions from swine waste storage and treatment lagoons." Journal of Geophysical Reseach, Vol. 105, pp. 11,535-11,545.

Aneja, V.P., R. Mathur, S.P. Arya, Y. Li, G.C. Murray, T.L. Manuszak, 2000,"Climatology of dinurnal trends and vertical distribution of ozone in the amospheric boundary layer in urban North Carolina" Air & Waste Manage. Assoc. Vol. 50, pp. 54-64.

Aneja, V.P., R. Mathur, S.P. Arya, Y. Li, G.C. Murray, T.L. Manuszak, 2000, "Coupling the vertical distribution of ozone in the atmospheric boundar layer. " Environ. Sci. Technol., Vol. 34, pp. 2324-2329.

Walker J.T., Aneja, V.P., Dickey D.A., 2000, "Atmospheric transport and wet deposition of ammonium in North Carolina" Atmos. Environ, Vol. 34, pp. 3407-3418.

Aneja, V.P., P.A. Roelle, W.P. Robarge, 1998, "Characterization of biogenic nitric oxide source strength in the southeast United States" Environ. Pollut., Vol. 102, pp. 211-218.

MARK O. BARNETT, PH.D., P.E., BCEE

203 Harbert Engineering Center
Department of Civil Engineering
Auburn University, AL 36849-5337

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Cellular [redacted]
mark.barnett@auburn.edu

BIOGRAPHICAL SKETCH

Mark Barnett is a Professor of Environmental Engineering and Associate Chair in the Department of Civil Engineering at Auburn University. He also serves as an administrative judge for the U. S. Nuclear Regulatory Commission, where he was appointed to a nine-judge panel conducting the initial hearings on the nation's first spent nuclear fuel repository in Yucca Mountain, Nevada. Dr. Barnett has a B.S. in Chemical Engineering and an M.S. in Environmental Engineering from the University of Tennessee and a Ph.D. in Environmental Sciences and Engineering from the University of North Carolina. Dr. Barnett has over twenty-five years of national and international environmental engineering and science experience in industry, government, and academia. His technical research focuses on the chemical processes controlling water quality and contaminant behavior in natural and engineered systems. He has been a principal or co-principal investigator on fifteen grants totaling over $7.5 million, and he has published over fifty peer-reviewed journal articles, several book chapters, and a book that collectively have received over two thousand citations (h-index=24). He is a licensed professional engineer and a board certified member of the American Academy of Environmental Engineers and Scientists with technical experience in potable water and industrial wastewater treatment; site assessment and remediation; soil and groundwater contamination; human-health risk assessments; contaminant bioavailability; environmental forensics; environmental and aquatic chemistry; low-level radioactive and hazardous waste management; and nuclear environmental engineering. Dr. Barnett has taught fundamental and applied courses in environmental and aquatic chemistry; drinking water supply, treatment, and distribution; environmental engineering principles and design; and sustainable design and development. His work has been supported by industry, the National Science Foundation, the Department of Energy, the Department of Defense, the Environmental Protection Agency, and the Water Research Foundation. His current interests are in environmental policy; sustainable development; and water, sanitation, and health in underserved communities.

EDUCATION

Ph.D. in Environmental Sciences and Engineering — 1998
University of North Carolina at Chapel Hill

M.S. in Environmental Engineering — 1991
University of Tennessee, Knoxville

B.S. in Chemical Engineering — 1985
University of Tennessee, Knoxville

PROFESSIONAL BACKGROUND

Professor and Associate Chair	2014 – Current
Malcolm Pirnie Professor	2009 – 2014
Malcolm Pirnie Associate Professor	2007 – 2009
Associate Professor and Brasfield & Gorrie Scholar	2004 – 2007
Assistant Professor and Brasfield & Gorrie Scholar	2001 – 2004
Assistant Professor	1999 – 2001

Department of Civil Engineering
Auburn University, Auburn, AL

Administrative Judge — 2007 – Present
U. S. Nuclear Regulatory Commission

Visiting Scientist — January - June 2005
Department of Environmental Sciences
Sectie Bodemkwaliteit
Wageningen University and Research Centre
Wageningen, The Netherlands

Research Associate — 1993 – 1999
Environmental Sciences Division
Oak Ridge National Laboratory, Oak Ridge, TN

Adjunct Faculty Member — 1994 – 1996
Department of Civil and Environmental Engineering
Oak Ridge Resident Graduate Program
University of Tennessee, Knoxville

Doctoral Fellow — 1991 – 1993
Department of Environmental Sciences and Engineering
University of North Carolina at Chapel Hill

Graduate Research Assistant — 1989 – 1991
Department of Civil and Environmental Engineering
University of Tennessee, Knoxville

Engineer — 1985 – 1989
Newport News Shipbuilding, Newport News, VA

AWARDS AND HONORS

Recognized as one of the "Twenty Top Professors of Civil Engineering" by onlineengineeringprograms.com	2016
Malcolm Pirnie Professorship	2007-2014
Appointed Nuclear Regulatory Commission Administrative Judge	2007
AU College of Engineering Faculty Research Award	2002
Brasfield & Gorrie Scholar in Civil Engineering	2001-2007
ORNL Corporate President's Award	1995
United States Department of Education Doctoral Fellowship	1991

Tau Beta Pi, the National Engineering Honor Society 1991
Chi Epsilon, the National Civil Engineering Honor Society 1990

PROFESSIONAL CREDENTIALS

Professional Engineer, State of Alabama
Board Certified Environmental Engineer, American Academy of Environmental Engineers & Scientists
Top Secret Security Clearance

COURSES TAUGHT

Auburn University
Introduction to Environmental Engineering
Water Supply, Treatment, and Distribution
Environmental Engineering Design
Human Odyssey
Chemical Principles of Environmental Engineering
Advanced Chemical Principles of Environmental Engineering
Sustainable Design and Development

University of Tennessee
Aquatic Chemistry
Environmental Engineering Chemistry

RESEARCH SUPPORT RECEIVED

Understanding the Subsurface Reactive Transport of Transuranic Contaminants at DOE Sites. M. O. Barnett (PI/PD), T. E. Albrecht-Schmitt, J. E. Saiers, D. K. Shuh. U. S. Department of Energy Environmental Remediation and Science Program (ERSP), FY 10-13, $978,000.

Development of Modeling Methods and Tools for Predicting Coupled Reactive Transport Processes in Porous Media under Multiple Scales. T. P. Clement, M. O. Barnett, N. Jones and C. Zheng. DOE Environmental Management and Science Program (EMSP), FY 06-08, $950,000.

The Effect of Soil Properties on Decreasing Toxic Metal Bioavailability: Field Scale Validation to Support Regulatory Acceptance. A. L. Hawkins, M. O. Barnett, et al. DOD-EPA-DOE Environmental Security Technology Certification Program (ESTCP), FY 06-08, $112,600 (AU).

Sequestration of Subsurface Elemental Mercury. M. O. Barnett, W. P. Hamilton, W. H. Harper, and K. S. Savage. Environmental Protection Agency STAR Program. March 1, 2005 – February 28, 2008, $324,342.

Development and Application of an Innovative Nanotechnology for in-situ Remediation of Mercury-Contaminated Alabama Soils and Sediments. D. Zhao and Mark O. Barnett. USGS-Alabama Water Resources Research Institute, March 1 2005-February 29, 2006, Amount: $75,103.

Developing a new class of ion exchangers for selective removal of arsenic and exploring an engineered approach for treatment and reuse of spent regenerant. D. Zhao, M. O. Barnett, and T. A. Kramer. American Water Works Association Research Foundation (AwwaRF), August 1, 2004-June 15, 2005, $148,074.

A Novel Ion Exchange Process for Selective Removal of As(V) and Enhanced Stability of Process Residuals. D. Zhao and M. O. Barnett. NSF-EPA Partnership for Environmental Research New Technology for the Environment (NTE) Program, FY 04-05, $99,452.

Decreasing Toxic Metal Bioavailability with Novel Soil Amendment Strategies. P. M. Jardine, M. O. Barnett, and S. E. Fendorf. DOD-EPA-DOE Strategic Environmental Research and Development Program (SERDP), FY 03–05, $361,000 (AU).

In-situ Destruction of PCBs, PCE, and TCE in Alabama Soils and Groundwater using a New Nanoscale Sorptive Catalyst. D. Zhao, C. R. Lange and M. O. Barnett. United States Geological Survey (USGS)-Alabama Water Resources Institute. FY 03. $24,951.

Quantifying the Bioavailability of Toxic Metals in Soils. M. O. Barnett and P. M. Jardine. DOD-EPA-DOE Strategic Environmental Research and Development Program (SERDP), FY 00–02, $880,000 (total), $329,000 (AU).

Reductive Immobilization of U(VI) in Fe(III) Oxide-Reducing Subsurface Sediments: Analysis of Coupled Microbial-Geochemical Processes in Experimental Reactive Transport Systems. E. E. Roden, M. O. Barnett, and C. R. Lange. DOE Environmental Management and Science Program (EMSP), FY 01-03, $338,000 (AU).

Retention of Copper in Sediment of Aquaculture Ponds Treated with Copper Sulfate. C. Boyd, D. Zhao, and M. O. Barnett. Auburn University Environmental Institute, AY 02-03, $80,000.

An Investigation into the use of Powdered Activated Alumina for the Removal of Toxic Metals from Contaminated Water. Alabama Legacy for Environmental Research Trust Awards. $80,809 ($39,581 external) for one year. T. A. Kramer and M. O. Barnett.

Particle and Transport Dispersion in Atmospheric Boundary Layers. Auburn College of Engineering Research Infrastructure Program. A. Ahmed, M. O. Barnett, and R. J. Hartfield. AY 02-03, $98,496.

Fate and Transport of Radionuclides Beneath the Hanford Tank Farm: Unraveling Coupled Geochemical and Hydrological Processes in the Vadose Zone. P. M. Jardine, S. E. Fendorf, C. C. Ainsworth, S. C. Brooks, I. L. Larsen, and M. O. Barnett. DOE Environmental Management and Science Program (EMSP), FY 00-02, $1,275,000 (total).

RESEARCH STAFF SUPERVISED

J. Zhuang, M.S.	Research Associate	2000 – 2009
T. Cheng, Ph.D.	Postdoctoral Research Fellow	2003 – 2004
J. Y. Choi, Ph.D.	Postdoctoral Research Fellow	2002 – 2003
J. K. Yang, Ph.D.	Postdoctoral Research Fellow	2000 – 2002

GRADUATE STUDENTS SUPERVISED

Ryan Bock	M.C.E. 2014
Daniel B. Gingerich	M.S. 2013
Hangping Zheng	M.S. 2013
Brian P. Haliena	M.S. 2012
Dominick M. Viruleg	M.C.E. 2012
Nick D. Freeman	M.C.E. 2012
N. H. Melson	M.S. 2011
V. A. Loganathan	Ph.D. 2010
J. T. Dove	M.S. 2009
O. K. Hartzog	M.S. 2008
T. Radu (Co-advisor with T. P. Clement)	Ph.D. 2007
J. E. Snelling	Ph.D. 2007
J. M. Bower-Green	M.S. 2007
D. W. Kilgour	M.S. 2007
S. M. Sanders (Co-advisor with P. Srivastava)	M.S. 2007
Y. Wang	M.S. 2005
R. A. Bevis-Moseley	M.S. 2005
M. Romero	M.S. 2004
J. M. Phillippi (Co-advisor with T. P. Clement)	M.S. 2004
J. L. Subacz	M.S. 2004
M. J. McIndoe	M.S. 2003
S. A. Butler	M.C.E. 2002
D. T. Tackett-McLemor (Co-advisor with S. E. Taylor)	M.S. 2002
L. M. Veal-Montgomery (Co-advisor with S. E. Taylor)	M.S. 2002
D. C. Stejskal (Co-advisor with T. A. Kramer)	M.S. 2001
J. C. Hilliard	M.S. 2001
L. E. Derrick-Williams	M.S. 2000
D. E. Zimmerman	M.S. 1995

PROFESSIONAL MEMBERSHIPS

American Chemical Society
American Geophysical Union
American Society of Civil Engineers
American Water Works Association
Association of Environmental Engineering and Science Professors
Engineers Without Borders

CURRENT SERVICE AND PROFESSIONAL ACTIVITIES

Department
Executive Committee

College
Faculty Mentor, Auburn University Student Chapter, Engineers Without Borders
Mentorship Committee, Samuel Ginn College of Engineering

University
New Faculty Colleague Circle

National
Atomic Safety and Licensing Board, Powertech (USA) Inc. (Dewey-Burdock In Situ Uranium Recovery Facility) [75 Fed. Reg. 13141 (March 18, 2010)]
Government Affairs Committee, Association of Environmental Engineering and Science Professors
State Representative, American Academy of Environmental Engineers and Scientists

PEER-REVIEWED SCIENTIFIC JOURNAL ARTICLES

Gingerich, D. B., A. Sengupta, and M. O. Barnett (2017). "Is the Arsenic Rule affordable?" *Journal American Water Works Association* (in press).

Haliena*, B., H. Zheng*, N. Melson*, D. I. Kaplan and M. O. Barnett† (2016). "Decreased Salinity and Actinide Mobility: Colloid-Facilitated Transport or pH Change?" *Environmental Science & Technology*. **50**(2): 625-632.

Jardine, P. M., Stewart, M. A., Barnett, M. O., Basta, N. T., Brooks, S. C., Fendorf, S., Mehlhorn, T. L. (2013) "Influence of Soil Geochemical and Physical Properties on Chromium(VI) Sorption and Bioaccessibility" *Environmental Science & Technology*. **47**(19): 11241-11248

Yang, Y., S. Wang, M.J. Polinski, Y. Liu, M.O. Barnett, and T.E. Albrecht-Schmitt (2013). "Dissolution of uranyl and plutonyl borates: Influences of crystalline structures and aqueous ligands." *Chemical Geology*. **357**: 67-74.

Chattanathan, S.A., T.P. Clement, S.R. Kanel, M.O. Barnett, and N. Chatakondi (2013). "Remediation of Uranium-contaminated Groundwater by Sorption onto Hydroxyapatite Derived from Catfish Bones." *Water Air and Soil Pollution*. **224**(2) 1429.

Yang, Y., J.E. Saiers, and M.O. Barnett (2013). "Impact of Interactions between Natural Organic Matter and Metal Oxides on the Desorption Kinetics of Uranium from Heterogeneous Colloidal Suspensions." *Environmental Science & Technology*. **47**(6): 2661-2669.

Melson*, N.H., B.P. Haliena*, D.I. Kaplan, and M.O. Barnett† (2012). "Adsorption of tetravalent thorium by geomedia." *Radiochimica Acta* **100**(11): 827-832.

Yang, Y., J. E. Saiers, N. Xu, S. G. Minasian, T. Tyliszczak, S. A. Kozimor, D. K. Shuh, M. O. Barnett (2012). "Impact of Natural Organic Matter on Uranium Transport through Saturated Geologic Materials: From Molecular to Column Scale." *Environmental Science & Technology* **46**(11): 5931-5938.

Jeppu*, G. P., T. P. Clement, M. O. Barnett, and K. K. Lee (2012). "A modified batch reactor system to study equilibrium-reactive transport problems." *Journal of Contaminant Hydrology* **129-130**: 2-9.

Barnett†, M O., V. A. Loganathan*, D. W. Kilgour*, O. K. Hartzog*, J. Zhuang*, Y. Wang, P. M. Jardine (2011). "Formation of Chloropyromorphite during the Physiologically Based Extraction Test: Experimental Artifact?" *Environmental Engineering Science* **28**(10): 719-724.

Kumar*, S., V. A. Loganathan*, R. B. Gupta and M. O. Barnett† (2011). "An Assessment of U(VI) removal from groundwater using biochar produced from hydrothermal carbonization." *Journal of Environmental Management* **92**(10): 2504-2512.

Kanel, S. R., T. P. Clement, M. O. Barnett and M. N. Goltz (2011). "Nano-Scale Hydroxyapatite: Synthesis, Two-Dimensional Transport Experiments, and Application for Uranium Remediation." *Journal of Nanotechnology*. Article ID 462382, 5 pages, doi:10.1155/2011/462382.

Jeppu, G. P., T. P. Clement, M. O. Barnett and K. K. Lee (2010). "A scalable surface complexation modeling framework for predicting arsenate adsorption on goethite-coated sands." *Environmental Engineering Science* **27**(2): 147-158.

Xiong, Z., F. He, D. Y. Zhao and M. O. Barnett (2009). "Immobilization of mercury in sediment using stabilized iron sulfide nanoparticles." *Water Research* **43**(20): 5171-5179.

Hartzog*, O. K., V. A. Loganathan*, S. R. Kanel*, G. R. Jeppu* and M. O. Barnett† (2009). "Normalization, comparison, and scaling of adsorption data: Arsenate and goethite." *Journal of Colloid and Interface Science* **333**(1): 6-13.

Srivastava, P., S. M. Sanders*, J. H. Dane, Y. Feng, J. Basile and M. O. Barnett (2009). "Fate and Transport of Sulfadimethoxine and Ormetoprim in Two Southeastern United States Soils." *Vadose Zone Journal* **8**(1): 32-41.

Loganathan*, V. A., M. O. Barnett†, T. P. Clement and S. R. Kanel* (2009). "Scaling of adsorption reactions: U(VI) experiments and modeling." *Applied Geochemistry* **24**(11): 2051-2060.

Moseley*, R. A., M. O. Barnett†, M. A. Stewart*, T. L. Mehlhorn, P. M. Jardine, M. Ginder-Vogel and S. Fendorf (2008). "Decreasing Lead Bioaccessibility in Industrial and Firing Range Soils with Phosphate-Based Amendments." *Journal of Environmental Quality* **37**(6): 2116-2124.

Bower*, J., K. S. Savage, B. Weinman*, M. O. Barnett†, W. P. Hamilton and W. F. Harper (2008). "Immobilization of mercury by pyrite (FeS_2)." *Environmental Pollution* **156**(2): 504-514.

Kilgour*, D. W., R. B. Moseley*, M. O. Barnett†, K. S. Savage and P. M. Jardine (2008). "Potential negative consequences of adding phosphorus-based fertilizers to immobilize lead in soil." *Journal of Environmental Quality* **37**(5): 1733-1740.

Kanel*, S. R., R. R. Goswami*, T. P. Clement, M. O. Barnett and D. Zhao (2008). "Two dimensional transport characteristics of surface stabilized zero-valent iron nanoparticles in porous media." *Environmental Science & Technology* **42**: 896-900.

Radu*, T.**,** A. Kumar*, T. P. Clement, G. Jeppu* and M. O. Barnett (2008). "Development of a scalable model for predicting arsenic transport coupled with oxidation and adsorption reactions." *Journal of Contaminant Hydrology* **95**: 30-41.

Sanders*, S. M., P. Srivastava, Y. Feng, J. H. Dane, J. Basile and M. O. Barnett (2008). "Sorption of the veterinary antimicrobials sulfadimethoxine and ormetoprim in soil." *Journal of Environmental Quality* **37**(4): 1510-1518.

Cheng*, T., M. O. Barnett†, E. E. Roden and J. L. Zhuang (2007). "Reactive transport of uranium(VI) and phosphate in a goethite-coated sand column: An experimental study." *Chemosphere* **68**(7): 1218-1223.

Hiemstra, T., M. O. Barnett and W. H. van Riemsdijk (2007). "Interaction of silicic acid with goethite." *Journal of Colloid and Interface Science* **310**(1): 8-17.

Phillippi*, J. M., V. A. Loganathan*, M. J. McIndoe*, M. O. Barnett†, T. P. Clement and E. E. Roden (2007). "Theoretical solid/solution ratio effects on adsorption and transport: Uranium(VI) and carbonate." *Soil Science Society of America Journal* **71**(2): 329-335.

Romero-Gonzalez*, M. R., T. Cheng*, M. O. Barnett† and E. E. Roden (2007). "Surface complexation modeling of the effects of phosphate on uranium(VI) adsorption." *Radiochimica Acta* **95**(5): 251-259.

Snelling*, J., M. O. Barnett†, D. Zhao and J. S. Arey (2007). "Methyl-tert-hexyl ether and methyl-tert-octyl ether as gasoline oxygenates: Anticipating widespread risks to community water supply wells." *Environmental Toxicology and Chemistry* **26**(11): 2253-2259.

Subacz*, J. L., M. O. Barnett†, P. M. Jardine and M. A. Stewart (2007). "Decreasing arsenic bioaccessibility/bioavailability in soils with iron amendments." *Journal of Environmental Science and Health Part A-Toxic/Hazardous Substances & Environmental Engineering* **42**(9): 1317-1329.

Cheng*, T., M. O. Barnett†, E. E. Roden and J. Zhuang (2006). "Effects of solid-to-solution ratio on uranium(VI) adsorption and its implications." *Environmental Science and Technology* **40**(10): 3243-3247.

Liu*, R. Q., D. Y. Zhao and M. O. Barnett (2006). "Fate and transport of copper applied in channel catfish ponds." *Water Air and Soil Pollution* **176**(1-4): 139-162.

Snelling*, J., M. O. Barnett†, D. Y. Zhao and J. S. Arey (2006). "Methyl tertiary hexyl ether and methyl tertiary octyl ether as gasoline oxygenates: Assessing risks from atmospheric dispersion and deposition." *Journal of the Air & Waste Management Association* **56**(10): 1484-1492.

Jeon, B. H., B. A. Dempsey, W. D. Burgos, M. O. Barnett and E. E. Roden (2005). "Chemical reduction of U(VI) by Fe(II) at the solid-water interface using natural and synthetic Fe(III) oxides." *Environmental Science & Technology* **39**(15): 5642-5649.

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†Notes where I am the corresponding author.

POLICY PUBLICATIONS

Barnett, M. O. (2010). "Biofuels and Greenhouse Gas Emissions: Green or Red?" *Environmental Science & Technology* **44**(14): 5330-5331.

Barnett, M. O. (2010). "The History of Weapons of Terror: An exploration of the myths and realities of chemical and biological warfare." Review of A History Of Chemical and Biological Weapons by Edward M. Spiers, *Chemical & Engineering News* **88**(29): 40-41.

PATENTS

Zhao, D., Z. Xiong, M. Barnett, R. Liu, W. F. Harper, F. He (2009) In situ immobilization of metals in contaminated sites using stabilized iron phosphate nanoparticles. Pat. No. US 7,581,902 B2.

BOOKS AND BOOK CHAPTERS

Barnett, Mark O. and Douglas B. Kent, (eds.) (2008). Adsorption of Metals by Geomedia II: Variables, Mechanisms, and Model Applications. Developments in Earth and Environmental Sciences. Amsterdam, Elsevier.

Radu, T., J. C. Hilliard, J. K. Yang and M. O. Barnett† (2005). Transport of As(III) and As(V) in experimental subsurface systems. Advances in Arsenic Research: Integration of Experimental and Observational Studies and Implications for Mitigation, ACS Symposium Series Vol. 915. P. A. O'Day, D. Vlassopoulos, X. Meng and L. G. Benning. Washington, DC, American Chemical Society**:** 91-103.

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Kim, K., P. J. Hanson, M. O. Barnett and S. E. Lindberg (1997). Biogeochemistry of Mercury in the Air-Soil-Plant System. Mercury and Its Effects on Environment and Biology. H. Sigel and A. Sigel. New York, Marcel Dekker**:** 185-212.

PRESENTATIONS, ABSTRACTS, AND PROCEEDINGS

Barnett, M. O. (2017). Radionuclides, Colloids, and Virtual Water. Invited presentation, Department of Geological Sciences, University of North Carolina, March 23, Chapel Hill, NC.

Barnett, M. O. (2016). Water Supply and Distribution in Underserved Communities. Alabama/Mississippi Section American Water Works Association 69th Annual Conference, October 9-11, Montgomery, AL.

Barnett, M. O. (2015). History of Environmental Engineering in the U.S.. Invited presentation, School of Environment and Energy Engineering, Beijing University of Civil Engineering and Architecture, May 20, Beijing, China.

Barnett, M. O. (2015). Civil and Environmental Engineering: Grand Challenges and a New Vision for an Old Profession. Invited presentation, Department of Civil and Environmental Engineering, University of Tennessee, February 5, Knoxville, TN.

Barnett, M. O. (2014). Civil and Environmental Engineering: Grand Challenges and a New Vision for an Old Profession. Invited presentation, Department of Civil Engineering, University of Kentucky, March 12, Lexington, KY.

Barnett, M.O. (2014). Science and Leadership. Invited presentation, Ground Water and Ecosytem Restoration Division, Environmental Protection Agency. January 15. Ada, OK.

Gingerich, D. and M.O. Barnett (2013). Incorporation of Income Distribution into the EPA's Affordability Metrics. American Water Works Association Annual Conference & Exhibition. June 9-13. Denver, CO.

Barnett, M. O. (2012). Civil and Environmental Engineering: Grand Challenges and a New Vision for an Old Profession. Invited presentation, Department of Civil and Environmental Engineering, Michigan State University, June 12, East Lansing, MI.

Barnett, M. O. (2012). Meeting Grand Challenges, Preparing Engineers for 2025 and Beyond. Invited presentation, Department of Civil and Environmental Engineering, Tennessee Technological University, June 8, Cookeville, TN.

Yang, Y., J.E. Saiers, N. Xu, T. Tyliszczak, D. Shuh, and M.O. Barnett (2011). Impact of Natural Organic Matter on Uranium Transport through Saturated Geologic Materials: From Molecular to Column Scale. American Geophysical Union Fall Meeting, December 5-9, San Francisco, CA.

Loganathan, V. A., M. O. Barnett and T. P. Clement (2010). An Assessment of U(VI) Adsorption at Multiple Scales. 239th American Chemical Society Conference, March 21-25, San Francisco, CA.

Barnett, M. O. (2010). Environmental research: Where have we been, where are we, and where are we going? Invited presentation, Department of Civil, Construction, and Environmental Engineering, University of Alabama, Tuscaloosa, AL.

Kanel, S. R., M. O. Barnett and T. P. Clement (2008). Removal of uranium from groundwater using different types of synthetic and natural hydroxyapatite material. 235th American Chemical Society Meeting, April 6-10, New Orleans, LA.

Jeppu, G., K. Hartzog, S. R. Kanel, T. P. Clement and M. O. Barnett (2008). Scaling of U(VI) and As(V) Interactions with Synthetic Iron Oxide-Coated Sands. 236th ACS National Meeting, August 17 – 21, Philadelphia, PA.

Barnett, M. O., K. Hartzog, D. Kilgour, C. Luo, R. Moseley, T. Radu, J. L. Subacz, J. K. Yang and D. Zhao (2008). Arsenic Research at Auburn University (invited). Electric Power Research Institute Arsenic Workshop, July 22, Pensacola, FL.

Clement, T. P., S. Kanel, R. Goswami, F. He, D. Zhao and M. Barnett (2008). Two Dimensional Transport Characteristics of Iron Nano-particles in Porous Media. MODFLOW and More 2008, May 19-21, Golden, CO.

Kanel, S. R., R. Goswami, T. P. Clement, M. O. Barnett and D. Zhao (2008). Transport of Surface Stabilized Zero-Valent Iron Nano Particles in Two-Dimensional Flow Container Packed with Porous Media. 235th American Chemical Society Meeting, April 6-10, New Orlean, LA.

Hartzog, K., G. Jeppu, S. R. Kanel, V. A. Loganathan, M. O. Barnett and T. P. Clement (2007). Scaling Arsenate Adsorption on Goethite-Coated Sand: Laboratory Experiments and Surface Complexation Modeling. Alabama Water Resources Conference and Symposium, September 5-7, Orange Beach, AL.

Kanel, S. R., V. A. Loganathan, G. Jeppu, A. Kumar, V. Srinivasan, T. Radu, K. Hartzog, J. McLaughlin, A. Shrestha, A. S. Sunder, J. Torlapati, M. O. Barnett, C. Zheng, N. L. Jones and T. P. Clement (2008). Development of Modeling Methods and Tools for Predicting Coupled Reactive Transport Processes in Porous Media at Multiple Scales. DOE-Environmental Remediation Science Program Annual PI Meeting, April 7-9, Lansdowne, VA.

Luo, C., J. Zhuang, D. Zhao and M. O. Barnett (2008). Pilot-scale Demonstration of a Selective Ion Exchange Process for the Removal of Arsenic from Groundwater Alabama-Mississippi Section, American Water Works Association, 61st Annual Conference, October 5-7, Montgomery, AL.

Dove, J. T., J. M. Bower and M. O. Barnett (2008). Subsurface Reactive Barriers to Mercury Mobilization. Alabama Water Resources Conference and Symposium, September 3-5, Orange Beach, AL.

Hawkins, A. and M. Barnett (2007). The Effect of Soil Properties on Toxic Metal Bioavailability: Field Scale Validation. 22nd Annual EPA Risk Assessors Conference, July 9-12, Brooklyn, NY.

Xiong, Z., F. He, D. Zhao, M. O. Barnett and W. F. Harper (2007). In-situ Immobilization of Mercury in Sediment and Soil by A New Class of Stabilized Iron Sulfide Nanoparticles. Alabama Water Resources Conference and Symposium, September 5-7, Orange Beach, AL.

Barnett, M. O. (2006). Estimating and reducing the relative bioavailability of arsenic in soil Invited presentation at the Electric Power Research Institute's Arsenic Bioavailability Workshop, November 28, Tampa, FL.

Barnett, M. O. (2006). Adsorption and Transport of Metals and Radionuclides in the Subsurface. Invited presentation at Imperial College, University of London, May 8, London, UK.

Barnett, M. O. (2006). Adsorption, Transport, and Bioavailability of Metals and Radionuclides in the Subsurface. Invited presentation, Henry Hunter Lecture, Department of Chemical Engineering, Mississippi State University, April 25, Starkville, MS.

Barnett, M. O., D. Zhao, W. F. Harper, J. Bower, Z. Xiong, W. P. Hamilton, K. Savage and R. R. Turner (2006). Interactions of mercury with sulfur and its implications to mercury cycling Invited presentation at U.S. Army Engineer Research and Development Center, April 24, Vicksburg, MS.

Barnett, M. O., D. Zhao, W. F. Harper, J. Bower, Z. Xiong, W. P. Hamilton, K. Savage and R. R. Turner (2006). Immobilization of Hg by Sulfide Minerals. Invited presentation at EPA Region 4 Headquarters, February 28, Atlanta, GA.

Bower, J., M. O. Barnett, W. P. Hamilton, W. F. Harper and K. Savage (2006). Immobilization of Mercury by Sulfide Minerals. Alabama Water Resources Conference and Symposium, September 6-8, Orange Beach, AL.

Cheng, T., M. O. Barnett, M. Romero, J. M. Phillippi, M. J. McIndoe, T. P. Clement and E. E. Roden (2006). Adsorption and transport of uranium(VI) and phosphate: An examination of the applicability of batch experiments to porous media transport. 231st American Chemical Society National Meeting, March 26-30, Atlanta, GA.

Kilgour, D., R. Moseley, M. O. Barnett and P. M. Jardine (2006). The Potential Negative Effects of Phosphate Amendments to Lead Contaminated Soils. Alabama Water Resources Conference and Symposium, September 6-8, Orange Beach, AL.

Steinwinder, T. R., D. Zhao, M. O. Barnett and B. An (2006). Stabilizing arsenic-laden residuals from ion exchange processes. 231st American Chemical Society National Meeting, March 26-30, Atlanta, GA.

Xie, L., D. E. Giammar, Y. Wang and M. O. Barnett (2006). Chemical interactions of lead and phosphate at mineral-water interfaces. 231st American Chemical Society National Meeting, March 26-30, Atlanta, GA.

Xiong, Z., D. Zhao and M. O. Barnett (2006). Immobilization of mercury from water and soils by stabilized iron sulfide nanoparticles. 232nd American Chemical Society National Meeting, September 10-14, San Franciso, CA.

Zhao, D., Z. Xiong, M. O. Barnett and W. F. Harper (2006). In-situ immobilization/containment of mercury in soils and sediments using a new class of

stabilized metal sulfide nanoparticles. Invited presentation at EPA Region 4 Headquarters, February 28, Atlanta, GA.

Steinwinder, T., B. An, D. Zhao and M. O. Barnett (2005). Engineered Treatment of As-Laden Regeneration Brine for Enhanced Stability of Process Waste Residuals. 19th Annual Alabama Water Resources Conference and Symposium, September 8-9, Orange Beach, AL.

Zhao, D., B. An, T. Steinwinder, M. O. Barnett and T. Kramer (2005). Selective removal of arsenate from drinking water using a polymeric ligand exchanger. 230th ACS National Meeting, Aug. 28 - Sept. 1, Washington, DC.

Steinwinder, T. R., D. Zhao, M. O. Barnett and B. An (2005). A novel ion exchange process for arsenic removal from drinking water. American Water Works Association 124th Annual Conference and Exposition, June 12-16, San Francisco, CA.

Jardine, P. M., J. C. Parker, M. O. Barnett, S. E. Fendorf and M. Stewart (2005). Decreasing Toxic Metal Bioavailability with Various Soil Amendment Strategies. SERDP-ESTCP Symposium and Workshop, Nov. 29 - Dec. 1, Washington, DC.

Jones, S. A., M. Barnett, A. Bhandari and T. LaPara (2005). An Initial Effort to Count Environmental Engineers in the U.S.A. Association of Environmental Engineering and Science Professors First Biennial Research and Education Conference, July 23-27, Clarkson University, Potsdam, NY.

Stewart, M. A., P. M. Jardine, S. E. Fendorf and M. O. Barnett (2005). Use of soil amendments to reduce bioaccessibility of heavy metal contaminated soils (invited). 8th International Conference on the Biogeochemistry of Trace Elements, April 3-7, Adelaide, Australia.

Stewart, M. A., P. M. Jardine, S. E. Fendorf and M. O. Barnett (2005). Evaluation of soil properties to reduce bioaccessibility of heavy metals. International Conference on the Remediation of Contaminated Sediments, January 24-27, New Orleans, LA.

Subacz, J. L., J. K. Yang, J. Zhuang, M. O. Barnett, P. M. Jardine and S. E. Fendorf (2005). Estimating and Reducing As Bioaccessibility -Bioavailability in Soils in the U.S. Invited presentation at the Dutch National Institute for Public Health and the Environment (RIVM), April 28, Bilthoven, The Netherlands.

Barnett, M. O. (2004). Adsorption, Transport, and Bioavailability of Metals and Radionuclides in the Subsurface. Invited presentation at Washington University, October 15, St. Louis, Mo.

Barnett, M. O. (2004). Adsorption, Transport, and Bioavailability of Metals and Radionuclides in the Subsurface. Invited presentation at Texas A&M University, October 15, College Station, TX.

Subacz, J. L., Z. Zhuang, M. O. Barnett, M. A. Stewart, P. M. Jardine and J. Drexler (2004). Decreasing arsenic bioavailability in soil with iron amendments. 20th International Conference on Soils, Sediments, and Water, October 18-21, Amherst, MA.

Brooks, S. C., P. M. Jardine, M. O. Barnett and S. Fendorf (2004). "Assessing the effects of peat amendments on the mobility of cadmium in soils." *Abstracts of Papers of the American Chemical Society* **227**: U1106-U1106.

Cheng, T., M. O. Barnett and E. E. Roden, 2004. (2004). Uranium (VI) adsorption to goethite-coated sand: Effects of phosphate. 227th American Chemical Society National Meeting, March 28-April 1, Anaheim, CA.

Cheng, T., M. O. Barnett and E. E. Roden (2004). The effects of phosphate on uranium adsorption to goethite-coated sand. International Workshop on Sorption Processes at Oxide and Carbonate Mineral Water Interfaces, March 25-26, Karlsruhe, Germany.

Radu, T. and M. O. Barnett (2004). Transport of As(III) and As(V) in Experimental Subsurface Systems containing MnO_2(s). Alabama Water Environment Association Conference, April 25-28, Orange Beach, AL.

Stewart, M. A., P. M. Jardine, S. E. Fendorf and M. O. Barnett (2004). Decreasing the bioaccessibility of Pb, Cd, and Cr(VI) with novel soil amendment strategies. Soil Science Society of America Annual Meetings, October 31-November 4, Seattle, Washington.

Subacz, J. L., Z. Zhuang, M. O. Barnett, M. A. Stewart, P. M. Jardine and J. Drexler (2004). Decreasing arsenic bioavailability in soil with iron amendments. Book of Abstracts, 20th International Conference on Soils, Sediments, and Water, October 18-21, Amherst, MA.

Barnett, M. O., J. Y. Choi, T. R. Gautam, M. J. McIndoe, J. M. Phillippi, T. P. Clement, C. R. Lange and E. E. Roden (2003). Subsurface reactive transport of U(VI). Biogeochemical Controls on the Mobility and Bioavailability of Metals in Soils and Groundwater International Conference, March 2-7, Monteverita, Switzerland.

Barnett, M. O., T. Radu, J. K. Yang and J. C. Hilliard (2003). Transport of As(III) and As(V) in experimental subsurface systems. 225th ACS National Meeting, September 7-11, New York, NY.

Barnett, M. O., J. K. Yang, J. L. Subacz, P. M. Jardine and S. E. Fendorf (2003). Estimating the oral bioavailability of arsenic in soil. U.S. EPA Bioavailability Workshop, April 15-16, Tampa, FL.

Jardine, P. M., J. C. Parker, M. O. Barnett and S. E. Fendorf (2003). Decreasing toxic metal bioavailability with novel soil amendment strategies. Partners in Environmental Technology Technical Symposium and Workshop, Washington, D.C.

Liu, R., D. Zhao, M. O. Barnett and C. Boyd (2003). Retention and speciation of copper in sediments of aquaculture ponds treated with copper sulfate. Alabama Water Resources Conference, September 3-5, Orange Beach, AL.

Phillippi, J. M., T. R. Gautam, T. P. Clement, M. O. Barnett, M. J. McIndoe and E. E. Roden (2003). Reactive transport of U(VI) in the subsurface. Alabama Water Resources Conference, September 3-5, Orange Beach, AL.

Phillippi, J. M., T. R. Gautam, T. P. Clement, M. J. McIndoe, M. O. Barnett and E. E. Roden (2003). "Reactive transport of U(VI) in groundwater." *Proceedings MODFLOW and More 2003: Understanding through modeling* **1**: 280.

Stewart, M. A., P. M. Jardine, S. E. Fendorf and M. O. Barnett (2003). Influence of soil properties on the bioaccessibility of Cr(VI) in soils. Soil Science Society of America National Meeting, November 2-6, Denver, CO.

Hilliard, J. C. and M. O. Barnett (2002). Arsenate interactions in the subsurface. Presented at Alabama's Water Environment Federation 25th Annual Conference, April 28-May 1, Orange Beach, AL.

Radu, T., J. K. Yang, J. C. Hilliard and M. O. Barnett (2002). Arsenite adsorption and transport in iron-coated sand. Presented at the 16th Annual Alabama Water Resources Conference, September 4-6, Orange Beach, AL.

Stewart, M. A., P. M. Jardine, L. D. McKay, T. L. Mehlhorn and M. O. Barnett (2002). Quantifying the bioaccessibility of heavy metals Cr, Cu, and Cd in soils. Presented at the 23rd Annual SETAC Meeting in North America, November 16-20, Salt Lake City, UT.

Stewart, M. A., P. M. Jardine, T. L. Mehlhorn, M. O. Barnett and L. D. McKay (2002). "Effects of soil geochemical and physical properties on the bioaccessibility of chromium in soil." *Abstr. Geol. Soc. Am.* **34**(2): 35.

Barnett, M. O., E. E. Roden, P. M. Jardine and S. C. Brooks (2001). Biogeochemical Interactions of U and Fe(III) oxides in subsurface environments. Presented at the 222nd ACS National Meeting, August 26-30, Chicago, IL.

Barnett, M. O., R. R. Turner and P. C. Singer (2001). "Formation and stability of mercuric sulfide in the subsurface." *ACS Environmental Chemistry Division Preprints of Extended Abstracts* **41**(2): 494-496.

Stejskal, D. C., T. A. Kramer and M. O. Barnett (2001). Removal of toxic metals from contaminated water using powdered activated alumina and coagulation/flocculation. Hazardous and Industrial Wastes: Proceedings of the Thirty-Third Mid-Atlantic Industrial and Hazardous Waste Conference. N. Assaf-Anid. Riverdale, NY**:** 29-39.

Stejskal, D. C., T. A. Kramer and M. O. Barnett (2001). Use of Coagulant Chemicals and Powdered Activated Alumina to Remove Arsenic from Drinking Water. Alabama-Mississippi Section of the AWWA Annual Conference, Biloxi, MS.

Stewart, M., P. M. Jardine, T. L. Mehlhorn and M. O. Barnett (2001). Physical and chemical controls on the bioaccessibility of Cr(III/VI) in soil. Soil Science Society of America Annual Conference, October 21-25, Charlotte, NC.

Barnett, M. O. (2000). Bioavailability of toxic metals in soil. Alabama Section of ASCE Winter Meeting, March 7, Auburn, AL.

Barnett, M. O., J. K. Yang, P. M. Jardine, M. Stewart, S. E. Fendorf and M. J. La Force (2000). Factors affecting the bioavailability of toxic metals in soils. SERDP/ESTCP Partners in Environmental Technology Symposium, November 28-30, Arlington, VA.

Bostick, B. C., S. E. Fendorf, M. O. Barnett, P. M. Jardine and S. C. Brooks (2000). Uranyl species formed during reactive transport through subsurface media. Soil Science Society of America Annual Meeting, November 5-9, Minneapolis, MN.

Derrick, B. and M. O. Barnett (2000). "Sorption and transport of arsenate in the subsurface." *EOS* **81**(48): F551.

Derrick, B. and M. O. Barnett (2000). Sorption and transport of arsenate in the subsurface. Sixth Annual Alabama Student Conference on Water Resources, September 6, Gulf Shores, AL.

La Force, M. J., S. E. Fendorf, M. O. Barnett and P. M. Jardine (2000). "Effects of residence time on contaminant bioavailability."

Zhang, H., S. Lindberg, A. Vette, M. Barnett, M. Gustin and T. Kuiken (2000). Dynamic flux chamber measurement of mercury emission fluxes over soils: Effect of sweep air flushing flow rate and verification of a two-resistance exchange interface simulation model. Presented at Society of Environmental Toxicology and Chemistry 21st Annual Meeting, November, Nashville, TN.

Barnett, M. O. and P. M. Jardine (1999). Quantifying the bioavailability of toxic metals in soils (Invited). SERDP/ESTCP Partners in Environmental Technology Symposium, November 30 - December 2, Arlington, VA.

Barnett, M. O. (1996). Speciation and bioavailability of mercury at East Fork Poplar Creek, TN. EPA/DOE Mercury Speciation Workshop, September 17-19, Denver, CO.

Miller, J. Q. and M. Barnett (1996). "Effective use of risk assessments and the public comment process to achieve acceptable remediation goals for mercury-contaminated sites." *Waste Manage. (Tucson, AZ).*

Barnett, M. O., R. R. Turner and P. C. Singer (1995). "Oxidation of authigenic mercuric sulfide." *Abstr. Geol. Soc. Am.* **27**(2): 35.

Barnett, M. O., R. R. Turner, L. A. Harris, T. J. Henson, R. C. Melton and R. J. Stevenson (1994). "Characterization of mercury in contaminated floodplain soils." *Emerging Technol. Hazard. Waste Manage. VI*: 1292-1293.

Stevenson, R., L. Harris, R. Turner and M. Barnett (1994). "Transmission electron microscopy of mercury sulfide particles from a mercury-contaminated soil." *Proc. Ann. Meet. Microsc. Soc. Am.*: 774-775.

Barnett, M., B. Robinson, B. Tschantz, R. Lambert, G. Lessman, R. von Bernuth and B. Miller (1991). "Reuse of an industrial wastewater at Saturn." *Proc. ASCE Environ. Eng. Div. Spec. Conf.*: 218-223.

Barnett, M., B. Robinson, B. Tschantz, R. Lambert, G. Lessman, R. von Bernuth and W. Miller (1990). "A study of the treatment and re-use of cooling tower blowdown water at General Motor's Saturn Plant." *Tenn. Water Resour. Symp.*: 145-150.

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Summary: I work for Valspar Corporation as Global Manager of Toxicology & Risk Assessment. I have experience with a variety of industries, including academia, government, pharmaceutical industry and consumer product industry. I was the State Toxicologist of Iowa for seven years. I have been appointed to six National Academy of Sciences committees, six U.S. Pharmacopeia committees, and one ISO committee. I am a board-certified toxicologist (DABT) and I served on the Board of Directors for the American Board of Toxicology. I am Editor-in-Chief for *MOJ Toxicology* (MOJT) and an Editor for *Open Access Journal of Toxicology* (OAJT). In addition, I have served on the adjunct faculty for several universities. I am a member of over a dozen professional societies, having served as an officer in several. Furthermore, I have over 80 various publications. My professional practice has focused on 1) determining safe amounts of exposure to specific chemicals and 2) evaluating potential public and occupational health risks associated with exposure to chemicals in the environment, workplace, pharmaceuticals, and consumer and personal care products.

Professional Experience

- 2016-Present: Global Manager of Toxicology & Risk Assessment, Valspar Corporation, Sewickley, PA. As the #1 global supplier of regulated food contact coatings for metal packaging, Valspar is leading the way in the development of new materials designed to meet consumer demand for performance and safety. I lead a team of toxicologists/regulatory specialists that supports Valspar businesses throughout the world. Issues include EPA TSCA, EPA EDSP, OSHA HCS/GHS, CA Prop 65, FDA Food Contact Substance (FCS) Notifications, EU REACH/ECHA submissions/CLP, Korea REACH, China GHS, SDS hazard classifications, and much more. Many studies focus on endocrine activity due to the nature of the historical chemicals in use (e.g., BPA).
- 2012-2016: Manager of Toxicology, Oak Ridge Associated Universities (ORAU), Oak Ridge, TN. ORAU is a consortium of major Ph.D.-granting academic institutions which cultivates collaborative partnerships that enhance the scientific research and education enterprise of our nation. I led and conducted reviews of toxicological research on biological and environmental effects of hazardous chemicals by working closely with federal agency scientists to ensure assessments address key issues. Our clients included CDC, EPA, FDA, NIOSH, and other agencies. Our work with CDC was very varied and was often toxicological support for non-toxicology projects. Our work for EPA included the preparation of chemical specific Toxicological Reviews and derivation of RfCs/RfDs. Our work for NIOSH included the development of chemical specific Criteria Documents, derivation of IDLHs, determination of Skin Notations, determination of GHS hazard classifications, classifying chemicals based upon carcinogenicity, and development of RELs. I participated in multi-disciplinary teams to develop innovative approaches for expediting human health evaluations of occupationally important chemicals. I provided programmatic direction to technical and scientific personnel. This included development of research methods, defining scope, resolution of key issues, and developing, preparing, and implementing a Quality Assurance process and the Quality Assurance Project Plan. I ensured development of the written health assessments and summary sheets for each chemical based on federal agency specifications. I revised and reviewed standard operating procedures as appropriate based on customer and peer review. I identified business opportunities through working responsively with current and potential customers to address needs and propose solutions. I developed proposals, work plans, and budgets, and worked directly with current and potential customers to define needs and develop cost-effective strategies. I identified, directed and coordinated the activities of expert consultant subcontractors in accordance with programmatic requirements. I received an employee award for being customer focused and being a team player.

- 2010-2012: Senior Toxicologist, Georgia-Pacific, Atlanta, GA. Georgia-Pacific is one of the world's leading manufacturers of tissue, pulp, paper, packaging, building products and related chemicals. I served as an internal company consultant for toxicological issues, acted as GP's lead person for issues pertaining to national and international regulatory toxicology & compliance, and acted as the lead for a variety of emerging issues (IRIS update, TSCA reform, endocrine disruptors, NAAQS, non-animal testing, green chemistry, GHS, CLP, & EU REACH). I interacted with the product stewards to address their needs. I assumed responsibility for performing safety assessments for chemicals used in products developed and marketed by the Corporation in support of new chemical notifications, to meet domestic and global hazard communication requirements. I coordinated aspects of chemical testing projects through laboratory and/or third party laboratories including assessment of new data to meet regulatory reporting obligations. I identified & analyzed toxicology-related legislation or regulation with a potential impact on company business, and assisted in formulation of recommendations and strategies. Since Georgia Pacific is owned by Koch Industries, I served as a leading expert in toxicology across many companies.
- 2007-2009: Senior Scientist I, XOMA, Berkeley, CA. XOMA is a biotechnology company focused on the discovery, development and manufacturing of monoclonal antibody-based therapeutics for unmet medical needs. I oversaw preclinical and clinical studies to determine toxicity/safety of biologics, specifically therapeutic monoclonal antibodies. I took the lead role in the designing, conducting and interpreting of data from extramural pilot and GLP studies at contract toxicology labs (CROs), and other such studies as needed, in support of IND and BLA/NDA submissions to FDA and other regulatory agencies. My essential duties were: 1) designing summary and draft protocols, soliciting competitive bids, and taking part in contract lab prestudy qualifying audits and selection; 2) coordinating, monitoring and evaluating extramural pilot and GLP toxicology studies in support of XOMA's peptide and protein therapeutics programs; and 3) working with internal and external project teams, providing toxicology support and judgment. I served as the Toxicology Representative for five different monoclonal antibody therapeutic programs on the Project Teams and the Joint Core Teams with partnering companies. I served as the Team Leader for the Preclinical Subteam on one monoclonal antibody therapeutic program. I received an employee award for being a good team player on a cross-functional team.
- 2000-2007: State Toxicologist, Iowa Dept. of Public Health, Des Moines, IA. I served as a statewide public health resource providing health consultation/advice to other environmental and health-related agencies (e.g., U.S. Environmental Protection Agency and U.S. Centers for Disease Control & Prevention), as well as to health care providers, and business and industry representatives. I was also the department's spokesman in regards to toxicological concerns. I directed all health assessment and health education project activities by providing professional judgment and expert toxicological and public health guidance to assure that decisions were appropriate, timely, and reflected sound public health principles and priorities. I directed epidemiological and exposure assessment studies evaluating Iowa residents affected by hazardous waste sites. I served as an active collaborator with other key government agencies. I directed 18 federally funded programs. I helped make the Cumulative Risk Calculator that people can use for conducting quantitative risk assessments.
- 1998-2000: Research Associate, National Food Safety & Toxicology Center, Michigan State University, E. Lansing, MI. Conducted research on mercury, endotoxin from Gram-negative bacteria, and the mycotoxin aflatoxin B1. Research emphasis on the role of inflammation in potentiating chemical-induced toxicity. I supervised ~10 students and lab techs.
- 1992-1998: Teaching Assistant, University of Louisiana, Monroe, LA. While in graduate school, I received financial support through teaching the following courses: General Toxicology Lecture/Laboratory (TOX 413), Organ Specific Toxicology Lecture/Laboratory (TOX 414), and Human Physiology Lecture/Laboratory (ZOO 311 & 312).

Education

- Post-Doc in Toxicology at Michigan State University (1998-2000)
- Ph.D. in Pharmacy Sciences specializing in Toxicology from the University of Louisiana, Monroe, LA (1998)
- M.S. in Biology with an emphasis on Environmental Toxicology from the University of Louisiana, Monroe, LA (1993)
- B.S. in Biology with an emphasis on Occupational Toxicology from the University of Louisiana, Monroe, LA (1992)
- CPM (Master's Certificate in Public Management) from Drake University, Des Moines, IA (2004)

Litigation Support

- I have provided litigation support for diverse civil and criminal cases associated with vapor intrusion; household, environmental and occupational exposures; product liability; indoor-air quality; pharmacology; toxic tort; and various testing methods. My litigation support has focused on data analysis, determination of cause-effect relationships, and human health risk assessment services. Furthermore, I provided consultations regarding strategies.

- I have provided consultations involving alleged toxic exposure to asbestos, BTEX, cleaning solutions, DDT, dioxin, formaldehyde, fracking fluid, lead, mold, MTBE, nanomaterials, PCBs, pesticides, pharmaceuticals, silica, TCE and many other allegedly toxic chemicals and environmental agents.

Adjunct Faculty Positions

- 2007-2010: Lecturer, University of California at Berkeley, Berkeley, CA. I gave lectures on forensic toxicology in an undergraduate toxicology course (NST11).
- 2004-2007: Assistant Professor, Iowa State University, Ames, IA. I was an Assistant Professor (Collaborator) in the College of Veterinary Medicine at Iowa State University. This position entailed both teaching and conducting research. I gave lectures in Toxicology (TOX 501), which is a required course for graduate students in the Toxicology Interdepartmental Program. Also, I was on the graduate committee of several doctoral students.
- 2001-2007: Associate Professor, Des Moines University-Osteopathic Medical Center, Des Moines, IA. I held a joint Clinical Associate Professorship position in the College of Health Sciences and the College of Osteopathic Medicine at Des Moines University-Osteopathic Medical Center. The position had two major duties: teaching and conducting research. I received several grants to examine the role of neutrophil-derived proteases in causing liver injury subsequent to exposure to toxic mold. Also, I investigating the toxicity of several herbal medicines and environmental contaminants. Although I was a frequent guest lecturer in many different medical courses, I was the primary lecturer for the following two courses: Occupational and Environmental Health (DHM 651) and Bioterrorism Preparedness and Response (DHM 759).

Appointments

- American Board of Toxicology
  - Board of Directors, 2015-2017
- National Academy of Sciences / National Research Council
  - Assembled Chemical Weapons Committee (I was appointed in 2003 to this committee to assist in the design of facilities for the destruction of weapons of mass destruction.)
  - Review and Assess the Proposal for Design and Operation of Designated Chemical Agent Destruction Pilot Plant at Pueblo Committee, 2006
  - Committee to Review and Assess Industrial Hygiene Standards and Practices at Tooele Chemical Agent Disposal Facility, 2006
  - Committee to Review Assembled Chemical Weapons Alternatives Chemical Agent Secondary Waste Disposal and Regulatory Requirements
  - Assembled Chemical Weapons Alternatives Committee #3, 2007
  - Promoting Safe Chemical Management in Developing Countries Committee, 2008
- United States Pharmacopoeia
  - Toxicology Expert Committee, 2010-2015
  - General Toxicology and Medical Device Biocompatibility Expert Committee, 2005-2010
  - Heavy Metals Advisory Panel, 2006-2015
  - Extended-Release Dietary Supplements Expert Panel, 2012-2015
  - Talc/Asbestos Expert Panel, 2012-2015
  - Elemental Impurities Expert Panel, 2010-2020
    - Recipient of the 2015 USP Award for an Innovative Response to a Public Health Challenge
- International Organization for Standardization (ISO) Technical Committee for Nanotechnologies (TC 229)

Certifications

- Certified Toxicologist - Diplomate of the American Board of Toxicology (Initial Certification: 2001; Recertification: 2006, 2011, & 2016)
- Certified in Public Management
- Certified in Public Health Assessment by the Agency for Toxic Substances & Disease Registry (ATSDR) / Centers for Disease Control & Prevention (CDC)
- Certified in Health Education by the Agency for Toxic Substances & Disease Registry (ATSDR) / Centers for Disease Control & Prevention (CDC)
- Certified in Risk Assessment by the U.S. Environmental Protection Agency
- Certified in Emergency Response to Terrorism by the Federal Emergency Management Agency
- Certified in Emergency Response Incident Command by the Federal Emergency Management Agency
- Certified in Hazardous Waste Operations and Emergency Response by U.S. Environmental Protection Agency

Foreign Language

- Mandarin Chinese

Editorial Boards

- Editor-in-Chief for *MOJ Toxicology* (MOJT)
- Editor for *Open Access Journal of Toxicology* (OAJT)

Professional Societies (past & present)

American Academy of Clinical Toxicology
American Association for the Advancement of Science
American College of Toxicology
- Representative for ACT at the SOT annual meetings, 2001 and 2002
- Chairperson of the Student Poster Discussion Session, 2002
- Candidate for the Nominating Committee, 2003/2004
- Candidate for Councilor, 2005/2006
- *ad hoc* Regulatory Committee, 2006/2007
- Program Committee, 2007

Central States Chapter of the Society of Toxicology
- Vice-President & President-Elect, 2004
- President, 2005

Food Safety Specialty Section, Society of Toxicology
International Society for the Study of Xenobiotics
Mechanisms of Toxicity Specialty Section, Society of Toxicology
Michigan Chapter of the Society of Toxicology
National Environmental Health Association
Northern California Chapter of the Society of Toxicology
- Secretary, 2008-2010

Risk Assessment Specialty Section, Society of Toxicology
Society for Risk Analysis
Society of Toxicology
- Regulatory & Legislative Affairs Committee, 2007-2010
- Chairperson of the Inflammation Section, 2000
- Chairperson of the Mechanisms of Hepatotoxicity Session, 2004
- Minority Program Mentor, 2002
- Student Advisory Committee Expert, 2002
- Animals in Research Committee, appointed 2002-2006
- Chemical/Biological Terrorism Resource Registry, 2004-present

South Central Chapter of the Society of Toxicology
Southeast Chapter of the Society of Toxicology
- Executive Committee, 2011-Present

Technical Association of the Pulp and Paper Industry
- TAPPI Representative to US TAG ISO/TC 229 Nanotechnologies Task Group on Nanocellulose
- Expert on the TAPPI International Nanotechnology Division
- Expert on the TAPPI EHS Standards for Nanocellulose Group

Soft Skills

- I speak, write, and listen effectively, organize my thoughts logically, and explain everything clearly.
- Strong computer and technical literacy
- Strong problem-solving/creativity skills
- Great interpersonal abilities, including relationship-building and relationship-management
- Able to work well with others while pursuing a common goal
- I am cultural-sensitive and able to build rapport with others in a multicultural environment.
- Strong planning and organizing skills
- Strong leadership and management skills
- I am adaptive and flexible, open to new ideas and concepts.
- I demonstrate professionalism and a strong work ethic.

Publications

Peer-Reviewed Research Articles

1) DeLeo, P. C., Pawlowski, S., Barton, C., and Fort, D. J. (2011). Comment on "Effects of triclocarban, triclosan, and methyl triclosan on thyroid hormone action and stress in frog and mammalian culture systems." *Environ. Sci. Technol*. 45, 10283-4.
2) Abernethy, D. R., Destefano, A. J., Cecil, T. L., Zaidi, K., Williams, R. L., and USP Metal Impurities Advisory Panel. (2010). Metal impurities in food and drugs. *Pharm. Res*. 27, 750-755.
3) Luyendyk, J. P., Copple, B. L., Barton, C. C., Ganey, P. E., and Roth, R. A. (2003). Augmentation of Aflatoxin B1 Hepatotoxicity by Endotoxin: Involvement of Endothelium and the Coagulation System. *Toxicol. Sci*. 72, 171-181.
4) Ganey, P. E., Barton, Y. W., Kinser, S., Sneed, R. A., Barton, C. C., and Roth, R. A. (2001). Involvement of cyclooxygenase-2 in the potentiation of allyl alcohol-induced liver injury by bacterial lipopolysaccharide. *Toxicol. Appl. Pharmacol*. 174, 113-121.
5) Barton, C. C., Barton, E. X., Ganey, P. E., Kunkel, S. L., and Roth, R. A. (2001). Bacterial lipopolysaccharide enhances aflatoxin B_1-hepatotoxicity in rats by a mechanism that depends on Tumor Necrosis Factor-alpha. *Hepatology* 33, 66-73.
6) Barton, C. C., Ganey, P. E., and Roth, R. A. (2000). Lipopolysaccharide augments aflatoxin B1-induced liver injury through neutrophil-dependent and independent mechanisms. *Toxicological Sciences* 58, 208-215.
7) Barton, C. C., Hill, D. A., Yee, S. B., Barton, E. X., Ganey, P. E., and Roth, R. A. (2000). Bacterial lipopolysaccharide exposure augments aflatoxin B_1-induced liver injury. *Toxicological Sciences* 55, 444-452.
8) Barton, C. C., Bucci, T. J., Lomax, L. G., Warbritton, A., and Mehendale, H. M. (2000). Stimulated pulmonary cell hyperplasia underlies resistance to alpha-naphthylthiourea. *Toxicology* 143, 167-181.
9) Yee, S. B., Kinser, S., Hill, D. A., Barton, C. C., Hotchkiss, J. A., Harkema, J. R., Ganey, P. E., and Roth, R. A. (2000). Synergistic hepatotoxicity from coexposure to bacterial endotoxin and the pyrrolizidine alkaloid monocrotaline. *Toxicology and Applied Pharmacology* 166, 173-185.

Published Abstracts

1) Wagoner, J. L., Barton, E. X., Klein, D. F., Newton, T. T., Roth, R. A., Mortensen, L. H., and Barton, C. C. (2003). Endotoxin Potentiates Aflatoxin B1-Hepatocellular Injury by a Mechanism which is Dependent upon Kupffer Cells. *Toxicological Sciences* 63, No. 1-Suppl.
2) Ganey, P. E., Barton, Y. W., Kinser, S., Sneed, R. A., Barton, C. C., and Roth, R. A. (2001). Involvement of cyclooxygenase-2 in the potentiation of allyl alcohol-induced liver injury by bacterial lipopolysaccharide. *Toxicological Sciences* 60, No. 1-Suppl.
3) Rumbeiha, W. K., Barton, C. C., and Roth, R. A. (2001). Role of neutrophils in endotoxin-potentiated mercury-induced nephrotoxicity. *Toxicological Sciences* 60, No. 1-Suppl.
4) Barton, C. C., Barton, E. X., Ganey, P. E., and Roth, R. A. (2000). Endotoxin potentiates aflatoxin B_1-induced hepatotoxicity through a TNF-alpha-dependent mechanism. *Toxicological Sciences* 54 (1), 140.
5) Barton, C. C., Ganey, P. E., and Roth, R. A. (1999). Development of liver injury in rats treated with aflatoxin B1 and endotoxin, and protection by neutrophil depletion. *Toxicological Sciences* 48, No. 1-Suppl., p. 55.
6) Barton, C. C., Bucci, T. J., Lomax, L. G., Warbritton, A., and Mehendale, H. M. (1998). Stimulation of cell division and tissue repair may explain α-naphthylthiourea resistance. *Toxicological Sciences* 42, No. 1-Suppl., p. 348.
7) Barton, C. C., and Mehendale, H. M. (1997). Stimulation of tissue repair is consistent with α-naphthylthiourea autoprotection: inhibition abolishes autoprotection. *Fundamental and Applied Toxicology* 36, No 1, Part 2 (Suppl.), p. 125.
8) Barton, C. C., and Mehendale, H. M. (1997). α-Naphthylthiourea autoprotection cannot be explained by enhanced tissue repair or type II pneumocyte proliferation (or can it?). *International Society for the Study of Xenobiotics Proceedings* Vol. 12, p. 72.
9) Barton, C. C., and Mehendale, H. M. (1996). α-Naphthylthiourea Autoprotection. *Fundamental and Applied Toxicology* 30, No 1, Part 2 (Suppl.), p. 133.
10) Barton, C. C. and Mehendale, H. M. (1996). Pneumocellular proliferation and tissue repair may underlie α-naphthylthiourea autoprotection. *FASEB J.* 10, No. 3 (Suppl.), p. A355.

Book Chapters

1) Barton, C. C. (in preparation). "Environmental Toxicology – Hazardous Waste" in Information Resources in Toxicology – 5th Edition, Ed. Philip Wexler, Elsevier, San Diego, CA.
2) Barton, C. C. and Weber, L. (2016). "Systemic Effects: Cardiovascular and Renal Toxicity" in Toxicology Principles for the Industrial Hygienist – 2nd Edition. (In preparation).
3) Barton, C. C. and Weber, L. (2016). "Toxicology of Sensory Organs" in Toxicology Principles for the Industrial Hygienist – 2nd Edition. (In preparation).
4) Barton, C. C., Still, K., and Weber, L. (2016). "Evaluation of Industrial/Commercial Materials" in Toxicology Principles for the Industrial Hygienist – 2nd Edition. (In preparation).
5) Barton, C. C. (2015). "Chapter 77: Fibrogenic Dusts" in Hamilton and Hardy's Industrial Toxicology – 6th Edition, Ed. Raymond Harbison, Mosby, St. Louis, MO.

6) Barton, C. C. (2015). "Chapter 78: Mixed Dusts" in Hamilton and Hardy's Industrial Toxicology – 6th Edition, Ed. Raymond Harbison, Mosby, St. Louis, MO.
7) Barton, C. C. (2014). "Tetrachloroethylene" in Encyclopedia of Toxicology – 3nd Edition, Ed. Philip Wexler, Elsevier, San Diego, CA.
8) Barton, C. C. (2014). "Trichloroethylene" in Encyclopedia of Toxicology – 3nd Edition, Ed. Philip Wexler, Elsevier, San Diego, CA.
9) Barton, C. C. (2014). "Benzene" in Encyclopedia of Toxicology – 3nd Edition, Ed. Philip Wexler, Elsevier, San Diego, CA.
10) Barton, C. C. (2014). "EDTA" in Encyclopedia of Toxicology – 3nd Edition, Ed. Philip Wexler, Elsevier, San Diego, CA.
11) Barton, C. C. (2014). "CCA-Treated Wood" in Encyclopedia of Toxicology – 3nd Edition, Ed. Philip Wexler, Elsevier, San Diego, CA.
12) Barton, C. C. (2014). "Health Assessments" in Encyclopedia of Toxicology – 3nd Edition, Ed. Philip Wexler, Elsevier, San Diego, CA.
13) Barton, C. C. (2009). "Environmental Toxicology – Wildlife" in Information Resources in Toxicology – 4th Edition, Ed. Philip Wexler, Elsevier, San Diego, CA.
14) Barton, C. C. (2009). "Environmental Toxicology - Terrestrial" in Information Resources in Toxicology – 4th Edition, Ed. Philip Wexler, Elsevier, San Diego, CA.
15) Barton, C. C. (2009). "Environmental Toxicology – Hazardous Waste" in Information Resources in Toxicology – 4th Edition, Ed. Philip Wexler, Elsevier, San Diego, CA.
16) Barton, C. C. (2009). "Disaster Preparedness and Response" in Information Resources in Toxicology – 4th Edition, Ed. Philip Wexler, Elsevier, San Diego, CA.
17) Barton, C. C., and Mehendale, H. M. (2005). "EDTA" in Encyclopedia of Toxicology – 2nd Edition, Ed. Philip Wexler, Elsevier, San Diego, CA.
18) Barton, C. C., and Newton, T. T. (2005). "CCA-Treated Wood" in Encyclopedia of Toxicology – 2nd Edition, Ed. Philip Wexler, Elsevier, San Diego, CA.
19) Barton, C. C., and Parham, A. G. (2005). "Health Assessments" in Encyclopedia of Toxicology – 2nd Edition, Ed. Philip Wexler, Elsevier, San Diego, CA.
20) Barton, C. C., and Parham, A. G. (2005). "Public Health Service" in Encyclopedia of Toxicology – 2nd Edition, Ed. Philip Wexler, Elsevier, San Diego, CA.
21) Barton, C. C., and Mehendale, H. M. (1998). "EDTA" in Encyclopedia of Toxicology – 1st Edition, Ed. Philip Wexler, Academic Press, San Diego, CA.

Books

1) National Academy of Sciences' National Research Council (2010). Chemical Laboratory Safety and Security - A Guide to Prudent Chemical Management. The National Academies Press, Washington, D.C.
2) National Academy of Sciences' National Research Council (2008). Review of Secondary Waste Disposal Planning for the Blue Grass and Pueblo Chemical Agent Destruction Pilot Plants. The National Academies Press, Washington, D.C.
3) National Academy of Sciences' National Research Council (2005). Interim Design Assessment for the Pueblo Chemical Agent Destruction Pilot Plant. The National Academies Press, Washington, D.C.
4) National Academy of Sciences' National Research Council (2005). Interim Design Assessment for the Blue Grass Chemical Agent Destruction Pilot Plant. The National Academies Press, Washington, D.C.
5) IDNR Animal Feeding Operations Technical Workgroup (2004). Animal Feeding Operations Technical Workgroup Report on: Air Emissions Characterization, Dispersion Modeling, and Best Management Practices. State of Iowa, Des Moines, Iowa.
6) Barton, C. C. (1998). Role of tissue repair and cell division in the pathophysiology of lung disease. Bell & Howell Co., Ann Arbor, MI. (Ph.D. dissertation on microfilm).

Peer-Reviewed Federal Government Publications

1) Schmitz, S., Colboth, S., and Barton, C. C. Agency for Toxic Substances and Disease Registry. Public Health Consultation – Buchanan Bulk Oil: Ma & Pa Stores, Oskaloosa, Mahaska County, Iowa. Atlanta: US Department of Health and Human Services; September 30, 2006.
2) Schmitz, S., Colboth, S., and Barton, C. C. Agency for Toxic Substances and Disease Registry. Public Health Consultation – Iowa City Former Manufactured Gas Plant Site, Iowa City, Johnson County, Iowa. Atlanta: US Department of Health and Human Services; September 14, 2006.
3) Schmitz, S., Colboth, S., and Barton, C. C. Agency for Toxic Substances and Disease Registry. Public Health Consultation – Tails a Waggin' Pet Resort, Cedar Rapids, Linn County, Iowa. Atlanta: US Department of Health and Human Services; August 29, 2006.
4) Schmitz, S., Colboth, S., and Barton, C. C. Agency for Toxic Substances and Disease Registry. Public Health Consultation – Pesticide Contamination of Residential Soil, Des Moines, Polk County, Iowa. Atlanta: US Department of Health and Human Services; December 5, 2005.

5) Schmitz, S., Colboth, S., and Barton, C. C. Agency for Toxic Substances and Disease Registry. Public Health Consultation – Allied Products Corporation Targeted Brownfields Assessment, Charles City, Floyd County, Iowa. Atlanta: US Department of Health and Human Services; August 8, 2005.
6) Colboth, S., Schmitz, S., and Barton, C. C. Agency for Toxic Substances and Disease Registry. Public Health Consultation: Review of On-Site Monitoring Data during the Removal Action at Le Mars Coal Gas Site, Le Mars, Plymouth County, IA. Cerclis No. IA0001032556. Atlanta: US Department of Health and Human Services; July 27, 2005.
7) Schmitz, S., Colboth, S., and Barton, C. C. Agency for Toxic Substances and Disease Registry. Public Health Consultation – Targeted Brownfields Assessment: Rolfe Above Ground Storage Tank Petroleum Bulk Plant, Rolfe, Pocahontas County, Iowa. Atlanta: US Department of Health and Human Services; May 20, 2005.
8) Schmitz, S., Colboth, S., and Barton, C. C. Agency for Toxic Substances and Disease Registry. Public Health Consultation: Sub-Slab Gas and Air Sampling Data at Alcoa – Davenport Works, Riverdale, Scott County, Iowa. Cerclis No. IAD005270160. Atlanta: US Department of Health and Human Services; April 6, 2005.
9) Schmitz, S., Colboth, S., and Barton, C. C. Agency for Toxic Substances and Disease Registry. Public Health Consultation: Silver City Petroleum Release and Municipal Wells, Silver City, Mills County, Iowa. Atlanta: US Department of Health and Human Services; April 4 2005.
10) Schmitz, S., Colboth, S., and Barton, C. C. Agency for Toxic Substances and Disease Registry. Public Health Consultation: Mid-America Tanning Company, Sergeant Bluff, Woodbury County, Iowa. Cerclis No. IAD085824688. Atlanta: US Department of Health and Human Services; February 17, 2005.
11) Schmitz, S., and Barton, C. C. Agency for Toxic Substances and Disease Registry. Public Health Assessment: Railroad Avenue Groundwater Contamination, West Des Moines, Polk County, IA. Cerclis No. IA0001610963. Atlanta: US Department of Health and Human Services; March 5, 2004.
12) Schmitz, S., Colboth, S., and Barton, C. C. Agency for Toxic Substances and Disease Registry. Public Health Consultation: Hills, Iowa, Perchlorate Groundwater Contamination Site, Hills, Johnson County, Iowa. Cerclis No. IAN000704368. Atlanta: US Department of Health and Human Services; Jun. 22, 2004.
13) Schmitz, S., Colboth, S., and Barton, C. C. Agency for Toxic Substances and Disease Registry. Public Health Consultation: Climbing Hill Groundwater Contamination Site, Climbing Hill, Woodbury County, Iowa. Atlanta: US Department of Health and Human Services; Oct. 18, 2004.
14) Schmitz, S., Colboth, S., and Barton, C. C. Agency for Toxic Substances and Disease Registry. Public Health Consultation: Jet Gas Spill Site, Lowell, Henry County, Iowa. Atlanta: US Department of Health and Human Services; Oct. 21, 2004.
15) Barton, C. C., Johnson, J., and Toney, S. Agency for Toxic Substances and Disease Registry. Health Consultation: Review of Public Health Implications of Alternative Removal Actions at the Le Mars Coal Gas Site, Le Mars, Plymouth County, Iowa. Cerclis No. IA0001032556. Atlanta: US Department of Health and Human Services; Sept. 16, 2003.
16) Barton, C. C., Johnson, J., and Toney, S. Agency for Toxic Substances and Disease Registry. Health Consultation: Review of Public Health Implications of Soil Gas and Indoor Air Sampling at the Le Mars Coal Gas Site, Le Mars, Plymouth County, Iowa. Cerclis No. IA0001032556. Atlanta: US Department of Health and Human Services; Sept. 19, 2003.
17) Barton, C. C., and Johnson, J. Agency for Toxic Substances and Disease Registry. Health consultation for the removal of mercury seal regulators by Mid-American Energy Company (MEC) in Iowa, Des Moines, Polk County, Iowa. Atlanta: US Department of Health and Human Services; Aug. 7, 2002.
18) Barton, C. C., and Johnson, J. Agency for Toxic Substances and Disease Registry. Health consultation regarding Clarksville PCB site, Clarksville, Butler County, Iowa. Cerclis No. IAD984569558. Atlanta: US Department of Health and Human Services; Feb. 25, 2002.
19) Barton, C. C., and Johnson, J. Agency for Toxic Substances and Disease Registry. Health consultation regarding Iowa City Former Manufactured Gas Plant, Iowa City, Johnson County, Iowa. Cerclis No. IAD984591172. Atlanta: US Department of Health and Human Services; Feb. 8, 2002.
20) Barton, C. C. Agency for Toxic Substances and Disease Registry. Health assessment for Mid-America Tanning, Inc., Sergeant Bluff, Woodbury County, Iowa. Cerclis No. IAD085824688. Atlanta: US Department of Health and Human Services; January 12, 2001.
21) Barton, C. C. Agency for Toxic Substances and Disease Registry. Health consultation concerning Iowa Malleable Iron Company, Fairfield, Jefferson County, Iowa. Cerclis No. IAD005286414. Atlanta: US Department of Health and Human Services; Dec. 20, 2001.
22) Barton, C. C. Agency for Toxic Substances and Disease Registry. Health consultation concerning Williams Pipeline Company, Iowa City Terminal (a/k/a Williams Pipeline Company-Coralville), Coralville, Johnson County, Iowa. Cerclis No. IAT200010007. Atlanta: US Department of Health and Human Services; Nov. 26, 2001.
23) Barton, C. C., and Johnson, J. Agency for Toxic Substances and Disease Registry. Health consultation concerning Economy Products Site (a/k/a/ Economy Products Company-Shenandoah), Shenandoah, Page County, Iowa. Cerclis No. IAD984566208. Atlanta: US Department of Health and Human Services; Sept. 28, 2001.
24) Barton, C. C., and Johnson, J. Agency for Toxic Substances and Disease Registry. Health consultation concerning

Mason City arsenic, Mason City, Cerro Gordo County, Iowa. Atlanta: US Department of Health and Human Services; Jul. 13, 2001.

25) Barton, C. C., and Johnson, J. Agency for Toxic Substances and Disease Registry. Health consultation concerning Parcel two of Former Diller Battery, Des Moines, Polk County, Iowa. Cerclis No. IA0002244556. Atlanta: US Department of Health and Human Services; Apr. 19, 2001.
26) Barton, C. C., and Johnson, J. Agency for Toxic Substances and Disease Registry. Health consultation concerning Parcel one of Former Diller Battery, Des Moines, Polk County, Iowa. Cerclis No. IA0002244556. Atlanta: US Department of Health and Human Services; Mar. 6, 2001.
27) Barton, C. C., and Johnson, J. Agency for Toxic Substances and Disease Registry. Health consultation concerning Economy Products Site (a/k/a/ Economy Products Company-Shenandoah), Shenandoah, Page County, Iowa. Cerclis No. IAD984566208. Atlanta: US Department of Health and Human Services; Apr. 12, 2001.
28) Barton, C. C., and Johnson, J. Agency for Toxic Substances and Disease Registry. Health consultation concerning Economy Products Site (a/k/a/ Economy Products Company-Shenandoah), Shenandoah, Page County, Iowa. Cerclis No. IAD984566208. Atlanta: US Department of Health and Human Services; Apr. 19, 2001.
29) Barton, C. C. Agency for Toxic Substances and Disease Registry. Health assessment for Rairoad avenue groundwater contamination site, West Des Moines, Polk County, Iowa. Cerclis No. IAD005279039. Atlanta: US Department of Health and Human Services; Aug. 25, 2000.
30) Barton, C. C. Agency for Toxic Substances and Disease Registry. Health consultation concerning Third Avenue Mercury, Council Bluffs, Pottawattamie County, Iowa. Cerclis No. IASFN0703486. Atlanta: US Department of Health and Human Services; Aug. 11, 2000.
31) Barton, C. C. Agency for Toxic Substances and Disease Registry. Health consultation concerning Decorah Former Manufactured Gas Plant, Decorah, Winneshiek County, Iowa. Cerclis No. IAD984621318. Atlanta: US Department of Health and Human Services; Oct. 5, 2000.
32) Barton, C. C. Agency for Toxic Substances and Disease Registry. Health assessment for Electro-Coatings, Inc., Cedar Rapids, Linn County, Iowa. Cerclis No. IAD005279039. Atlanta: US Department of Health and Human Services; Aug. 25, 2000.

State Government Publications

1) Barton, C. C. Iowa Department of Public Health. Recommendations for fish consumption. Des Moines, Iowa; Sept. 2005.
2) Barton, C. C. Iowa Department of Public Health. Recommendations for standards in the cleanup of former methamphetamine labs. Des Moines, Iowa; Sept. 2001; revised version, Jan. 2005.
3) Barton, C. C. Iowa Department of Public Health. Health Implications of soy-based infant formula. Des Moines, Iowa; Jan. 2001.
4) Barton, C. C. Iowa Department of Public Health. Health implications of mercury in dental amalgam. Des Moines, Iowa; Oct. 2000.
5) Barton, C. C. Iowa Department of Public Health. Risks from large-scale livestock operations in Iowa. Des Moines, Iowa; Nov. 2000.
6) Barton, C. C. Iowa Department of Public Health. Guidelines for cleaning former methamphetamine labs. Des Moines, Iowa; Sept. 2000.
7) Barton, C. C. Iowa Department of Public Health. Public health implications of chromate copper arsenate (CCA)-treated lumber. Des Moines, Iowa; Dec. 2000.

Richard Burton Belzer

[redacted]
Web Site: www.rbbelzer.com

Experience

- Independent strategic and technical consulting in regulation, risk, economics, and information quality — 2001-present
- Nonprofit management
  - Regulatory Checkbook — 2001-present
    Regulatory oversight, scientific peer review coordination
  - Neutral Source — 2006-present
    Blogging platform @ www.neutalsource.org
- Washington University in St. Louis
  - Visiting Professor of Public Policy — 1998-2001
- Center for the Study of American Business
  - Regulatory Program Manager
- Office of Information and Regulatory Affairs
  Office of Management and Budget — 1988-1998
  - Economist

Awards

- Society for Risk Analysis
  - Outstanding Service Award, 2003
- Cecil and Ida Green Center for the Study of Science and Society, University of Texas at Dallas
  - Senior Fellow
- Office of Management and Budget
  - Special Achievement Award, 1990
  - Division Performance Award, 1991
  - Division Performance Award, 1992

Public Policy Interests

- Improving the integration of risk assessment into benefit-cost analysis
- Improving the practical utility and reducing the burden of federal information collection requests
- Improving the transparency, reproducibility, and objectivity of information disseminated by government agencies
- Improving the quality of peer review of scientific, economic, and technical work products
- Improving the effectiveness of institutional mechanisms for regulatory oversight
- Improving the net social benefits of regulation

Education

Ph.D. Harvard University, 1989

M.P.P. Harvard Kennedy School, 1982

M.S. University of California, Davis, 1980

B.S. University of California, Davis, 1979

Congressional Testimony

1. Committee on Science, Space, & Technology, Subcommittee on Investigations & Oversight and Committee on Small Business, Subcommittee on Healthcare & Technology – Joint Hearing: "How the Report on Carcinogens Uses Science to Meet its Statutory Obligations, and its Impact on Small Business Jobs," April 25, 2012. (PDF) (Answers to Questions for the Record) — 2012
2. Energy and Environment Subcommittee, Committee on Science, Space, and Technology, U.S. House of Representatives, "Fostering Quality Science at EPA: Perspectives on Common Sense Reform – Day II," February 3 (PDF) — 2012
3. Committee on Environment and Public Works, U.S. Senate. "Oversight Hearing on Disease Clusters and Environmental Health," March 29 (PDF) — 2011
4. Subcommittee on Energy Policy, Natural Resources And Regulatory Affairs, Committee on Government Reform, U.S. House of Representatives. Oversight Hearing on OMB's Draft Report to Congress on the Benefits and Costs of Federal Regulation, February 25 (PDF) — 2004
5. Committee on Investigations and Oversight, U.S. House of Representatives. Oversight Hearing on Hazardous Waste Rule Making — 1992

Selected Research Projects

• California Department of Public Health's Cost-Benefit Analysis for in Support of a Proposed Primary Drinking Water Standard for Hexavalent Chromium [Cr(VI)]	10/9/2013 12/6/2013 12/13/2013
• California Communities Environmental Health Screening Tool (CalEnviroScreen)	2/1/2013 10/16/2012 9/7/2012
• Scientific Information Disseminated in Support of EPA's Notice of Proposed Rulemaking for the Ozone National Ambient Air Quality Standards	10/14/2008 10/9/2007
• Naphthalene State of the Science Symposium, *Regulatory Toxicology and Pharmacology*, 51:2 (Supplement)	2008
• Scientific Information Contained in a Response to Comments Document Disseminated in Support of EPA's 2002 Draft Perchlorate Risk Assessment	12/3/2003 3/25/2004 8/24/2004 12/21/2004
• Comparative Risk Assessment of Dietary Perchlorate and Nitrate (Amazon link)	2004

Publications

	CITATION	PEER REVIEWED	DATE
1.	Belzer RB. "Risk Assessment, Safety Assessment, and the Estimation of Regulatory Benefits," *Research Papers*. Mercatus Center, Arlington, VA.		2012
2.	Belzer RB. "The Report on Carcinogens: What Went Wrong; What Can Be Done to Fix It," *Issue Analysis*, 2012:1, Competitive Enterprise Institute, Washington, DC.		2012
3.	Belzer RB. "Principles for an Effective Regulatory Impact Analysis Challenge Function," *Horizons* 10:3, 31-39, Policy Research Initiative, Ottawa, Canada.	✓	2009
4.	Belzer RB, Bus JS, Cavalieri EL, Lewis SC, North DW, Pleus RC. "The Naphthalene State of the Science Symposium: Objectives, Organization Structure, and Charge," *Regulatory Toxicology & Pharmacology* 51:2(1), 1-5.	✓	2008
5.	Belzer RB, ed. "Supplement: The Naphthalene State of the	✓	2008

	CITATION	PEER REVIEWED	DATE
	Science Symposium," *Regulatory Toxicology and Pharmacology*, 52:2(1), 1-50.		
6.	Cavalieri EL., Berndt WO, Pleus RC, Belzer RB, Mattie DR. 2005."Report of the Planning Committee for the Perchlorate State of the Science Symposium," Report for the Department of Defense, Office of the Secretary.		2005
7.	Belzer RB, Bruce GB, Peterson MK, Pleus RC. "Using Comparative Exposure Analyses to Validate Low-Dose Human Health Risk Assessment: The Case Of Perchlorate." In Linkov I, Ramadan AB, eds. *Comparative Risk Assessment and Environmental Decision Making*, Kluwer, 57-74.	✓	2004
8.	Belzer RB. Exposure Assessment at a Crossroads: The Risk of Success." *Journal of Exposure Analysis and Environmental Epidemiology*, 12, 96–103.	✓	2002
9.	Belzer RB. "Discounting Across Generations: Necessary, not Suspect," *Risk Analysis*, 20:6, 779-792.	✓	2002
10.	Belzer RB, deFur P, Clarke D. "Selecting, Implementing, and Tracking Ecological Risk Management Decisions: Necessary Elements of an Effective Decisionmaking Framework," Chapter 5 in *Risk Management: Ecological Risk-Based Decision-Making*, Stahl RG, et al., eds. Pensacola, Fl: Society of Environmental Toxicology and Chemistry, 57-74.	✓	2001
11.	Belzer RB. "Using Economic Principles for Ecological Risk Management," Chapter 6 in *Risk Management: Ecological Risk-Based Decision-Making*, Stahl RG, et al., eds. Pensacola, Fl.: Society of Environmental Toxicology and Chemistry, 75-90.	✓	2001
12.	Belzer RB. "Getting Beyond 'Grin and Bear It' in the Practice of Risk Management," *Reliability Engineering and System Safety*, 72:2, 137-148.	✓	2001
13.	Lutter RL, Belzer RB. "EPA Pats Itself on the Back," *Regulation* 23:3, 23-28.		2000
14.	Belzer RB. "HACCP Principles for Regulatory Analysis" in *The Economics of HACCP: Costs and Benefits*, Uhnevehr LJ, ed. St. Paul, Minn.: Eagan Press.	✓	2000
15.	Belzer RB. "OMB Report on Regulation Flunks CSAB Test: Comments on the OMB's 'Draft [Third] Report to Congress		2000

CITATION	PEER REVIEWED	DATE
on the Costs and Benefits of Federal Regulation'" *Policy Brief 203*, Center for the Study of American Business, Washington University in St. Louis.		
16. Belzer RB. 1999. "CSAB Project on Regulatory Oversight: Study Protocol 1," Center for the Study of American Business, Washington University in St. Louis.		1999
17. Belzer RB. "CSAB Project on Regulatory Oversight: Study Protocol 1, Appendix A: Evaluative Criteria for Compliance [Evaluative Criteria for Compliance: Unfunded Mandates Control Act]," Center for the Study of American Business, Washington University in St. Louis.		1999
18. Belzer RB. 1999. "CSAB Project on Regulatory Oversight: Study Protocol 1, Appendix B: Evaluative Criteria for Compliance [Evaluative Criteria for Compliance: Regulatory Flexibility Act of 1980, as Amended by the Small Business Regulatory Enforcement, Fairness and Compliance Act of 1996]," Center for the Study of American Business, Washington University in St. Louis.		1999
19. Belzer RB. "CSAB Project on Regulatory Oversight: Study Protocol 1, Appendix B: Evaluative Criteria for Compliance [Regulatory Flexibility Act of 1980, as Amended by the Small Business Regulatory Enforcement, Fairness and Compliance Act of 1996]," Center for the Study of American Business, Washington University in St. Louis.		1999
20. Belzer RB. "CSAB Project on Regulatory Oversight: Study Protocol 1, Appendix C: Evaluative Criteria for Compliance [Executive Order 12866]," Center for the Study of American Business, Washington University in St. Louis.		1999
21. Belzer RB. "CSAB Project on Regulatory Oversight: Study Protocol 1, Appendix D: Evaluative Criteria for Compliance [OMB Guidance on Economic Analysis Under Executive Order 12866]," Center for the Study of American Business, Washington University in St. Louis.		1999
22. Belzer RB. "CSAB Project on Regulatory Oversight: Study Protocol 1, Appendix E: Evaluative Criteria for Compliance [Executive Order 12875, 'Enhancing the Intergovernmental Partnership']," Center for the Study of American Business,		1999

CITATION	PEER REVIEWED	DATE
Washington University in St. Louis.		
23. Belzer RB. "CSAB Project on Regulatory Oversight: Study Protocol 1, Appendix F: Evaluative Criteria for Compliance [Executive Order 12898, 'Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations']," Center for the Study of American Business, Washington University in St. Louis.		1999
24. Belzer RB. "CSAB Project on Regulatory Oversight: Study Protocol 1, Appendix G: Evaluative Criteria for Compliance [Executive Order 13045, 'Protection of Children from Environmental Health Risks and Safety Risks']," Center for the Study of American Business, Washington University in St. Louis.		1999
25. Belzer RB. "Independent Regulatory Oversight: A New Path to Regulatory Reform," *CSAB Forum*, 3, Center for the Study of American Business, Washington University in St. Louis.		1999
26. Belzer RB. "*Star Trek* Economics: Discounting with Anomalies in the Time-Space Continuum," in *Probabilistic Safety Assessment and Management (PSAM 4): Volume 4*, Mosleh A, Bari RA, eds., London: Springer-Verlag, 2359-2364.	✓	1998
27. Belzer RB. "Staking Out Risk Management," in *Probabilistic Safety Assessment and Management (PSAM 4): Volume 3*, Mosleh A, Bari RA, eds., London: Springer-Verlag, 1985-1990.	✓	1998
28. Belzer RB. "The Common Sense Imperative of Benefit-Cost Analysis: An Old Idea with Compelling Public Interest Credentials," *Risk Policy Report*, October 20.		1995
29. Belzer RB. "Superfund's Insatiability," *Issues in Science and Technology*, 11:4 (Summer). Book review.		1995
30. Belzer RB, Theroux RP. 1995. "Criteria for Evaluating Results Obtained from Contingent Valuation Methods," in *Valuing Food Safety and Nutrition*, Caswell J, ed. Boulder, Colo.: Westview Press.	✓	1995
31. Belzer RB. "Is Reducing Risk the Real Objective of Risk Management?" in *Worst Things First?*, Finkel AM, Golding D, eds. Baltimore, Md.: Johns-Hopkins Press.		1994
32. Belzer RB. "Risk Assessment and Benefit-Cost Analysis in		1994

CITATION	PEER REVIEWED	DATE
U.S. Risk Management Decision Making," in *Risk Management 1992: An International Conference*, London: UK Health and Safety Executive.		
33. Belzer RB. "Regulating Risk: An OMB Perspective," in *Regulating Risk: The Science and Politics of Risk*, Washington, D.C.: National Safety Council.		1993
34. Belzer RB. "The Peril and Promise of Risk Assessment," *Regulation* 14:4, 40-49.		1991
35. Office of Management and Budget. "Regulating Risk: The Cost-Effectiveness of Federal Efforts to Reduce Health and Safety Risks," *Regulatory Program of the United States Government: April 1, 1991 — March 31, 1992*. Washington, D.C.: Office of Management and Budget, 8-16.		1991
36. Office of Management and Budget. "Current Regulatory Issues in Risk Assessment and Risk Management," *Regulatory Program of the United States Government: April 1, 1990 — March 31, 1991*. Washington, D.C.: Office of Management and Budget, 13-26.		1990
37. Belzer RB. *Economic Incentives for Hazardous Waste Management: Deposit-Refund Systems and Used Lubricating Oil*, Ph.D. Dissertation, Harvard University.	✓	1989

Affiliations, Memberships, and Professional Service

- American Economic Association
- Society for Risk Analysis (sra.org)
  - Elected Treasurer, 1998, 2000
  - Executive Committee, 1998-2003
- Society for Benefit-Cost Analysis (benefitcostanalysis.org)
  - Elected Secretary/Treasurer, 2010, 2012
  - Executive Committee, 2010-date
- American Association of Wine Economists

Teaching Experience

- Virginia Tech Graduate School 1996
  Microeconomics
- Harvard University 1986-87
  Department of Economics

Curriculum Vitae
FREDERICK M. BERNTHAL

Contacts:

Home address: [redacted]
Phone: [redacted])
Email: Bernthal@URA-HQ.org

Education

Valparaiso University	B.S. (Chemistry) 1964
University of California, Berkeley	Ph.D. (Nuclear Chemistry) 1969
Yale University	Postdoctoral Research Staff 1969-70
University of Copenhagen	Advanced Study 1976-77

Professional Employment History

President, Universities Research Association, Inc., 1994-2011; Senior Advisor to the Board of Trustees, 2011-date, Washington, D.C.

Deputy Director, U.S. National Science Foundation, 1990-1994, Washington, D.C. (Acting Director, August 1990-March 1991 and April 1993-October 1993)

Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs, 1988-1990, Washington D.C.

Commissioner, U.S. Nuclear Regulatory Commission, 1983-88, Washington, D.C.

Chief Legislative Assistant 1980-83, Legislative Assistant 1978-79 to U.S. Senator Howard Baker, Washington, D.C.

Associate Professor of Chemistry and Physics, 1975-80; Assistant Professor, 1970-75; Michigan State University, East Lansing, MI

Visiting Scientist, Niels Bohr Institute, University of Copenhagen, Denmark, 1976-77

Postdoctoral Research Staff, Yale University, 1969-70

Professional Experience and Achievements

President, Universities Research Association, Inc. 1994-2011; Senior Advisor to the Board of Trustees, 2011-date

President and CEO of non-profit consortium of 90 major research universities with management and operations (M&O) responsibility for $300 million in annual contracts, including U.S. Department of Energy's Fermi National Accelerator Laboratory and additional NSF and NASA sponsored activities. Beginning in 2017, part of Honeywell-led team with M&O contract for Sandia National Laboratories. As URA President, responsible to Board of Trustees for corporate operations and for relations with the Federal Government, industry, academe, the media, and the general public. As Senior Advisor, assist in recruitment and business development and advise Trustees on corporate strategy.

Deputy Director and Acting Director, U.S. National Science Foundation, 1990-94

Deputy Director (1990-94): Chief Operating Officer of NSF; in coordination with Director assist in administration and policy direction of 1200-employee Federal agency sponsoring some 20,000 grants annually to support U.S. science and engineering research and education. Chaired task forces on NSF Reorganization, International Activities, and Equal Opportunity.

Acting Director (1990-91, 1993): Chief Executive Officer of NSF; Chairman of the Executive Committee and Member, U.S. National Science Board. Prepared budget which led to $3.0 billion 1994 Congressional appropriation, 11% increase over 1993; negotiated with White House $2.7 billion FY-1992 Presidential budget request to Congress, 18% increase over 1991. Initiated task forces that led to restructured NSF environmental research programs and to conversion of NSF to electronic proposal and grant processing.

Assistant Secretary of State for Oceans, Environment and Science (OES), 1988-90

Led 60-person bureau responsible to Secretary of State for development and coordination of U.S. foreign policy on science and technology, space, environment, world population, oceans and fisheries, Antarctica, and nuclear non-proliferation. Supervisor of U.S. science and environment counselors in foreign embassies. Chair, National Security Council Policy Coordinating Committee for Oceans, Environment, and Science; Chair, Interagency Antarctic Policy Committee.

Led numerous U.S. Government delegations, inter alia, first meeting of parties to Montreal Protocol on Depletion of the Ozone Layer; Intergovernmental Panel on Climate Change (IPCC); Chairman, 50-nation Response Strategies Working Group of IPCC and editor of first report to United Nations in 1991; member, UN Environment Program Governing Council. Negotiated 1989 US-USSR Agreement for Cooperation in Basic Sciences. Secured U.S. government approval of 1989 Basel Convention on Transboundary Air Pollution. Spearheaded initiatives that led to U.S. ban on ivory imports, and ban on U.S. export of hazardous wastes.

Commissioner, U.S. Nuclear Regulatory Commission (NRC), 1983-88

Member of five-person collegial governing body responsible for policy, major administrative and management decisions of 3000-employee Federal agency with $400 million annual budget; policy and adjudicatory responsibility for regulation of U.S. nuclear power plants, export and import of nuclear materials, and U.S. civilian use of radioactive materials; final administrative law review of all NRC regulatory decisions. Drafted and gained Commission approval for first NRC Advanced Reactor Policy Statement; voted to approve operating licenses for some 40 U.S. commercial nuclear power plants. Led first U.S. Nuclear Safety Delegation to the USSR in March 1987 and negotiated and signed first US-USSR nuclear safety protocol; led first NRC delegations to Czechoslovakia, Hungary, and Bulgaria in November 1987.

Legislative Assistant, Chief Legislative Assistant, U.S. Senator Howard Baker, 1978-83

Legislative Assistant (1978-80) and Legislative Staff Director (1980-83) for Senate Majority Leader Baker; liaison to Executive Branch and to Members and staff of U.S. Congress; initiated and facilitated legislation; assisted in setting agenda for U.S. Senate; liaison to Senate Committee Staff; analyst and adviser on energy, technology and science policy; liaison to research universities, Oak Ridge National Laboratory, and Tennessee Valley Authority.

Assistant Professor, Associate Professor, Michigan State University, 1970-80

Joint appointment and granted tenure in departments of chemistry and physics; research funded by Atomic Energy Commission/Department of Energy and National Science Foundation; taught undergraduate and graduate courses; graduate student thesis preceptor for one M. S. and four Ph.D. degrees; College of Natural Science Affirmative Action Committee; Chair, MSU Radioisotopes Committee; Member, University Reactor Safety Committee; Chair, MSU Section American Chemical Society; referee for Department of Energy and National Science Foundation proposals, and for several professional scientific journals.

Selected Boards, Commissions, Committees

Director, Information Systems Laboratories, Inc. (privately-held, employee-owned high technology services company); Chairman, Compensation and Corporate Governance Committee (2006-date)

Director, Talen Energy Corporation, Inc.; Member Executive and Audit Committees; Chairman Nuclear Oversight Committee (2015-2016)

Director, PPL Inc. a Fortune 300 energy company; Member Executive Committee and Audit Committee; Chairman, Nuclear Oversight Committee (1996-2015)

Director and Treasurer, Society for Science and the Public (Publisher, Science News; sponsor, Intel Science Talent Search and International Science and Engineering Fairs); Member Executive Committee and Chairman, Finance Committee (2001-2008)

Chairman, International Finance Board, Pierre Auger International Cosmic Ray Observatory (2004-2010)

Chairman, Advisory Council for NSF-Funded U.S.-China Science and Technology Policy Cooperation Program (2002-2004)

Commission on R&D Investment Strategy, Senior Policy Group on National Challenges, Georgetown University Center for Strategic and International Studies, 1996.

Department of Energy Fermi Award Committee, 1991-1993 (Chairman, 1992); Member E.O. Lawrence Award Panel, 1993.

Government-University-Industry Research Roundtable, National Acad. of Sciences, 1990-94.

Chairman, 1992 White House National Critical Technologies Panel.

U.S. National Science Board (ex-officio), 1990 and 1993.

Chairman, White House Committee on Earth and Environmental Sciences of Federal Coordinating Council on Science, Engineering, and Technology, 1991-93.

Chairman, 50-nation Response Strategies Working Group of U.N. Intergovernmental Panel on Climate Change, 1988-91.

U.S.-USSR Joint High Level Commission on Cooperation in Basic Sciences; U.S.-China Joint Commission on S&T Cooperation; Joint High-Level Commission and Chairman, Joint Working-Level Commission for U.S.-Japan S&T Cooperation , 1987-90.

Publications

Over 45 publications in refereed scientific journals from 1967-1985, primarily in Physical Review C, Nuclear Physics, Physical Review Letters and Physics Letters (listing on request). Numerous invited papers, speeches, published monographs, and testimony of record before Congress (partial list attached). Served as referee for several scientific journals.

Awards and Professional Affiliations

NATO Senior Scientist Fellow, 1977
Congressional Science Fellow, American Physical Society, 1978-79
Doctor of Science (honoris causa), Valparaiso University, 1992
Fellow, American Physical Society
Fellow, American Association for the Advancement of Science
American Chemical Society (1968-1995)
Cosmos Club of Washington

Selected Speeches and Monographs

Books and Monographs

"Second Biennial Report, National Critical Technologies Panel"
Frederick M. Bernthal, Editor and Panel Chairman
Submitted to President Bush, January 15, 1993
Published by the Critical Technologies Institute, c/o RAND Corporation, Washington, DC, (1993) 38 pages.

Climate Change: The IPCC Response Strategies
F. M. Bernthal, Chairman and Editor
Island Press, Washington, DC (1991) 270 pages.

"U.S. Climate Change Policy"
F. M. Bernthal
Current Policy monograph No. 1216, U.S. Department of State (1989)

"Recognizing the Global Nature of Environmental Problems"
F. M. Bernthal
Current Policy monograph No. 1198, U.S. Department of State (1989)

"U.S. Views on Waste Exports"
F. M. Bernthal
Department of State Bulletin 88 (1988) 67.

"U. S. Nuclear Regulatory Policy Trends"
F. M. Bernthal
Proceedings of the International Conference on Containment Design (ed. R.K. Black) Toronto, Canada (1984) pp. 13-18.

Selected Invited Talks and Speeches, since ~1990

Guest Lecturer, The Bredesen Center for Interdisciplinary Research and Graduate Education
University of Tennessee, Knoxville, April 25, 2014

Seminar at International Institute for Applied Systems Analysis
Vienna, Austria, July 12, 2007

Speech at Dedication of the Pierre Auger Cosmic Ray Observatory
Malargue, Argentina, November 10, 2005

Remarks at James Baker III Institute for Public Policy: Symposium in honor of Neal Lane, "Bridging the Gap Between Science and Society"
Rice University, November 2, 2003

Remarks at Meeting of AAAS-sponsored U.S. Science Policy Delegation to Switzerland
Bern, Switzerland, October 16, 2003

Invited Remarks to National Academy of Sciences COSEPUP Workshop on Standards in Basic Research
Washington D.C., February 27, 2002

"The Role of Research and Development in Determining the Fuel Mix"
The European Institute Transatlantic Seminar on Energy Security
Washington, D.C., September 17, 1998

"Issues in U.S. Science and Technology Policy"
Brookings Institution Executive Leadership Seminar
Williamsburg, Virginia, May 25, 1995

"National Science Policy and Legislation: The Case of the United States"
Albert H. Teich and Frederick M. Bernthal
Hearing before the State Committee on Science and Education of the Russian Duma,
Moscow, Russia, October 17, 1995 (published by OECD, Paris)

"Issues in Science"
C-Span Cable Television, Live Viewer Call-In
Washington, DC, December 31, 1992

Commencement Address to Graduating Class of 1992
Valparaiso University, May 17, 1992

Remarks at International Meeting of Science Advisers to Heads of Government of the Americas and the Iberian Peninsula
Ixtapa, Zihuatanejo, Mexico, November 14, 1991

"Global Change: A Megascience Project", Invited talk, U.S.-EC Workshop on International Collaboration in Science Megaprojects
Brussels, October 7, 1991

"The Internationalization of Science"
Annual meeting of G-7 Presidents of Research Councils
Ottawa, Canada June 27, 1991

"Global Climate Change: Report from the State Department"
Presentation to National Governors Conference Task Force on Global Climate Change
Washington, DC, February 26, 1990

"The Diplomacy of Global Change"
Presidential Plenary Session on Atmospheric Chemistry
Annual Meeting of the American Chemical Society
Miami, Florida September 11, 1989

Record Testimony Before Congress, since **~1990**

Department of Energy National Laboratories
Subcommittees on Basic Research and on Energy and Environment, House Science Committee, September 7, 1995

The Future of Department of Energy National Laboratories
Subcommittee on Energy and Water Development, House Appropriations Committee
January 31, 1995

NSF Reauthorization Legislation
Subcommittee on Science, Research, and Technology of the House Committee on Science, Space, and Technology, June 15, 1993

U.S. Antarctic Policy
Subcommittee on Science, Research, and Technology of the House Committee on Science, Space, and Technology, February 23, 1993

U.S. Antarctic Policy
House Committee on Merchant Marine and Fisheries, June 30, 1992

Proposal for an "AmeRus" U.S.-Russian Science Foundation
Subcommittee on Science, Research, and Technology of the
House Committee on Science, Space, and Technology, May 19, 1992

Latin American Scientific Cooperation
Joint hearing before House Foreign Affairs and Science, Space, and Technology Committees, March 17, 1992

NSF Management of Research Grants
Senate Committee on Governmental Affairs, September 24, 1991

National Science Foundation Views on Indirect Costs of Research
Subcommittee on Science, Research, and Technology,
House Committee on Science, Space, and Technology, April 5, 1991

National Science Foundation Reauthorization Hearing
Subcommittee on Science, Research, and Technology,
House Committee on Science, Space, and Technology, February 27, 1991

U.S. Policy on Global Climate Change
Senate Committee on Commerce, Science, and Transportation, June 12, 1990

U.S. Policy on Global Climate Change
Subcommittee on International Economic Policy, Trade, Oceans, and the Environment
Senate Foreign Relations Committee, August 3, 1989

International Fisheries Commissions Appropriations
House Committee on Appropriations, March 10, 1989

Edwin X Berry, PhD, CCM

Contact Information:

Edwin X Berry, PhD, CEO
Climate Physics, LLC
439 Grand Dr #147
Bigfork, MT 59911

[redacted]

Position and Expertise

Dr. Edwin X Berry is a physicist, a Certified Consulting Meteorologist by the American Meteorological Society, and CEO of Climate Physics, LLC. His expertise is in atmospheric physics, climate physics, and numerical models.

Education

Berry received his BS in Engineering from the California Institute of Technology (Caltech) in 1957, where he studied under Linus Pauling and other excellent professors.

After graduating from Caltech, he worked as a physics instructor at Sacramento State University while he studied math.

In 1959, Dartmouth College awarded Berry a teaching fellowship in physics. In addition to physics, Berry studied math and philosophy under John Kemeny, who studied under Albert Einstein. Berry's master's thesis, under Professor Millet Morgan, was about the polarization of high-frequency radio waves beamed into the earth's ionosphere.

Berry received his MA in Physics from Dartmouth College in 1960.

In 1961, Berry became the first research assistant of the new Desert Research Institute at the University of Nevada, Reno. Berry's PhD physics mentor was Friedwart Winterberg, the top student of Nobel Laureate Werner Heisenberg.

Berry received his PhD in Physics, with minors in atmospheric physics and math, from the University of Nevada in 1965.

Desert Research Institute, University of Nevada

Berry taught graduate physics courses in fluid dynamics while he continued his research.

Berry was chief scientist for Nevada's Desert Research Institute airborne research facility. He planned and led pioneering research flights inside Alberta hailstorms and Sierra Nevada mountain storms.

Berry designed, and his team built, the first airborne, earth-referenced radar display for weather research, which predated modern GPS instruments. National Oceanographic and Atmospheric Agency (NOAA) adapted Berry's design for hurricane research.

Consultant work

He participated as a consultant in federal-government-sponsored meteorological research experiments in the USA, Canada, South Africa, Puerto Rico, St. Croix, and the Philippine Islands.

Dr. Pierre St. Amand, of the Naval Weapons Center, invited Berry to be a regular consultant to the Department of Defense (DOD). In 1969, St. Amand invited Berry to be the only civilian consultant in DOD's top-secret "Operation Popeye" weather modification project in the Philippines. Berry and St. Amand used C-130 aircraft to teach US Air Force (USAF) B-52 pilots how to produce rain by dynamically seeding tropical clouds.

National Science Foundation Program Manager

In 1972, the National Science Foundation (NSF) invited Berry to be its Program Manager for Weather Modification. Berry managed NSF's leading edge-national weather research projects, including the Metropolitan Meteorological Experiment (METROMEX) and the National Hail Research Experiment (NHRE).

The Metropolitan Meteorological Experiment (METROMEX) was a major research project to quantify the inadvertent weather modification by a large city. Extensive measurements in and around St. Louis showed how the heat island effect of the city modified the surrounding weather and climate. The project budget was $5 million per year plus significant contributions from the US Air Force.

The National Hail Research Experiment (NHRE) was a major research project to study the microphysics and dynamics of large hail storms on the east slope of the Rocky Mountains. The project budget was $5 million per year.

As NSF Program Manager, Berry convened a special task force to study the statistical methods required to evaluate weather modification experiments. Statistical experts from the University of California, Berkeley, concluded that weather modification evaluation was the most difficult statistical problem they had encountered.

Achievements

Berry's theoretical PhD thesis, "Cloud Droplet Growth by Collection," is still cited as a breakthrough in the science of rain formation and in the use of numerical models. His work is summarized in cloud physics textbooks.

Berry is a pilot, with glider, power, and instrument ratings.

In 1976, Berry founded Edwin X Berry & Associates in Sacramento. Later, he started Atmospheric Research & Technology and Amerivision Corporation.

He developed numerical models to calculate and reduce aircraft accidents caused by wind shear. He worked with United Airline pilots in simulators to test his ideas about wind shear on aircraft. He helped United Airlines to develop safe landing methods during wind-shear conditions. He proposed a method to detect wind shear over airports which the Federal Aviation Agency (FAA) installed at major airports.

He performed the southern California desert wind-energy study for the California Energy Commission. He was first to identify Altamont Pass and Tehachapi Pass as excellent wind energy resources.

He designed and his team manufactured the first low-cost, electronic remote data instruments for wind energy using then state-of-the-art electronics, and helped private companies evaluate wind-energy potential on their land.

From 1989 through 1992, Berry managed his meteorological team to provide 24-hour weather forecasting for the US Customs Aerostat project along the southern U.S. border.

In 1991, Berry developed software that used historical annual streamflow data to estimate future annual streamflow for the Sacramento River Index. His cycle-based software accurately predicted California would recover from its 1993 drought and that drought would reoccur in 2013.

Berry has been an expert witness in many legal trials and has never been on the losing side of a trial.

In 1992, Berry made courtroom history by developing and defending the first computer model to generate new evidence in a criminal trial. His custom software application, written in Microsoft Visual Basic, modeled human body physiological responses to changing weather and environmental conditions. This model and Berry's testimony was a key element in the successful defense in a high-profile murder trial.

Computerworld and Microsoft selected his model as one of 24 finalists out of 1300 entries for the 1993 Windows World Open where it won the overall "People's Choice Award." Microsoft nominated Berry for a Smithsonian Award.

In 1996, the University of Nevada Alumni Association presented Berry with its Professional Achievement Award, after he was nominated by his physics mentor, Winterberg.

From 1994 through 2000, Berry developed software that applied mathematical artificial intelligence methods, developed for weather forecasting, to the valuation of single-family homes. The Bank of America performed side-by-side tests of Berry's model against other home valuation methods. Berry's method proved significantly superior. Berry sold his automated property valuation company in 2001.

Climate research

In 2001, Berry began focusing on the global warming research, which is intimately tied to his expertise in cloud physics, numerical modeling, complex systems, and government-sponsored research. He has self-funded his climate research since 2001.

Berry moved to Bigfork, Montana, in 2008.

Berry led the successful Montana fight to stop the "Our Children's Trust" climate lawsuit in the Montana Supreme Court. Berry's testimony stopped several climate bills from passing in Montana's legislature.

Berry manages his climate research and maintains close interaction with many other climate scientists via the Internet and professional meetings. Berry is an active member in the two most attended email groups on climate change.

Berry began his self-funded website (edberry.com) in 2009 to educate and inform the public about climate science. He is experienced in communicating with the general public and with other scientists. He has many subscribers to his climate website.

Berry's abstract to the AMS 31st Conference on Climate Variability and Change, scheduled for January 2018, shows human emissions contribute less than 18 ppm to the present 400 ppm, and, therefore, human emissions do not cause climate change. This is a checkmate argument that supports President Trump's interpretation of the climate change debate.

Abstract: http://edberry.com/blog/ed-berry/model-atmospheric-carbon-dioxide-abstract/

Citations

Berry's main publications are listed on ResearchGate.net. His professional publications continue to gather citations from new publications by other authors.

Athletic achievements

During his professional career, Berry has been very active in athletic competitions.

When a graduate student at University of Nevada, his athletic performance in a wide variety of required events won him a membership in the elite Sigma Delta Psi national athletic honorary society. Others who have achieved this level of athletic performance include Astronaut Edward White, super-athlete Norm Hoffman, Dr. Fred Hatfield, and Dr. Thomas Cureton.

As a competitive small-boat sailor, Berry and his wife, Valerie, as crew, beat Olympic sailors and won Gold Medals in the 1974 Canadian Olympic-Training Regatta in Kingston, Ontario. They also won North American and US National Championships.

In the 1990's, Berry placed in the USA top 10 age-group run-bike-run events. In the 2000's, he placed in the top 3 in international senior track competition for races 100, 200, 400, and 1500 meters.

Currently, in Concept2 rowing competition, Berry holds age-group world first place in 500m and second places for 100m and 1000m. Among lightweights, he is first in all three events. Remarkably, he continues to make new personal records in rowing competition.

Primary climate-related publications

Berry, E.X, 1962: Growth of cloud droplets by condensation, DRI, U. of Nevada, 63, TR 1.

Berry, E.X, 1963: Non-conservation of angular momentum of a weight on a string. Amer. J. Physics, 31, 304-305.

Berry, E.X, and W.A. Mordy, 1964: Cloud particle growth by the combined effects of condensation and collection. DRI, U. of Nevada, 64, TR 8.

Berry, E.X, 1965: The effect of collection efficiencies on droplet growth. DRI, U of Nevada, 65, Preprint 12.

Mordy, W.A. and E.X Berry, 1965: Particle growth by coalescence. J. Atmos. Sci. 32, 340.

Berry, E.X, 1966: A convenient nucleus parameter for consideration of droplet growth. Recher. Atmos., xx, 411-416.

Berry, E.X, 1967: Cloud droplet growth by collection. J. Atmos. Sci. 24, 688-701. (Publication of Berry's PhD Thesis, this publication continues to be cited several times per month through July 2017.)

Berry, E.X, 1968: Comments on "Cloud droplet coalescence: Statistical foundations and a one-dimensional sedimentation model." J. Atmos. Sci. 25, 151-152.

Berry, E.X, 1969: A mathematical framework for cloud models. J. Atmos. Sci. 26, 109-111.

Berry, E.X, 1969: Atmospheric measurements during the winter of 1969 as part of Project Skywater. DRI, U of Nevada, 69, PSTR 12.

Berry, E.X, 1970: A study of hailstorms using airborne radar. DRI, U of Nevada, 70, PSTR 13.

Berry, E.X, and R.L. Reinhardt, 1973: Modeling of condensation and collection within clouds. DRI, U of Nevada, 73, PSTR 16.

Berry, E.X, special report, 1969: Operation Popeye, Naval Weapons Center, Department of Defense (DOD). Top-secret project to demonstrate dynamic cloud-seeding techniques to produce rain from tropical clouds near the Philippines. Berry assisted DOD to use C-130 aircraft to train USAF B-52 pilots to dynamically seed clouds, for use over Laos and North Vietnam.

Neilsen, K.W. and E.X Berry, 1969: Development and use of an airborne air marker for atmospheric research. J. Appl. Meteor. 8, 502-505.

Berry, E.X, 1969: Convective motion as indicated by visual tracers. J. Appl. Meteor. 8, 506-508.

Ostlund, H.G. and E.X Berry, 1970: Modification of atmospheric tritium and water vapor by Lake Tahoe. Tellus, 22, 463-465.

Marwitz, J.D. and E.X Berry, 1971: The airflow within the weak echo region of an Alberta hailstorm. J. Appl. Meteor., 10, 487-492.

Berry, E.X and M.R. Pranger, 1974: Equations for calculating the terminal velocity of water drops. J. Appl. Meteor, 13, 108-113.

Berry, E.X, 1974: Comments on "The greenhouse effect." J. Appl. Meteor. 13, 603-604.

Berry, E.X and R.L. Reinhardt, 1974: An analysis of cloud drop growth by collection. Part I: Double distributions. J. Atmos. Sci. 31, 1814-1824.

Berry, E.X and R.L. Reinhardt, 1974: An analysis of cloud drop growth by collection. Part II: Single initial distributions. J. Atmos. Sci. 31, 1825-1831.

Berry, E.X and R.L. Reinhardt, 1974: An analysis of cloud drop growth by collection. Part III: Accretion and self-collection. J. Atmos. Sci. 31, 2118-2126.

Berry, E.X and R.L. Reinhardt, 1974: An analysis of cloud drop growth by collection. Part IV: A new parameterization. J. Atmos. Sci. 31, 2127-2135.

Berry, E.X, 1974: Weather and climate modification: Problems and progress. A book review. Bull. Amer. Meteor. Soc. 55, 1479-1480.

Berry, E.X, 1975: Weather Modification. McGraw-Hill Yearbook of Sci. and Tech., 413-415.

Berry, E.X, 1976: Conference summary by Conference Manager. AMS Special Regional Weather Modification Conference: Augmentation of winter orographic precipitation in the Western US. Bull. Amer. Meteor. Soc., 57, 998-1002.

Berry, E.X, 1977: Detection of dangerous wind shear on the glide slope by ground-based data sources: a feasibility study. EXB, 77, Sierra Research Corporation.

Berry, E.X, 1977: Parameterization equations for the simulation of microphysical processes in cloud models. EXB, 77, US Bureau of Reclamation.

Berry, E.X, 1978: A Design for Water Resources Management in California. California Department of Water Resources, 78, DWR B 52791.

Berry, E.X, 1978: A Mathematical Basis for Wind Resources Prospecting.

Berry, E.X, 1980: Wind resource assessment in California. California Energy Commission, 80 May, CEC P500-80-024.

Berry, E.X, R.K. Hauser and W.G. Lane, 1980: Project Windesert: An Interim Report. AIAA/SERI Wind Energy Conference, 890 Jul, AIAA-80-0647-CP.

Berry, E.X, R.K. Hauser, W.G. Lane, 1981: Wind Energy Assessment of the Southern California Desert. Vol I. California Energy Commission, 81 Jun, CEC P500-81-023 and P500-81-025.

Berry, E.X, R.K. Hauser, W.G. Lane, 1981: Wind Energy Assessment of the Southern California Desert. Vol II. California Energy Commission. 81 Jun, CEC P500-81-023.

Project Windesert was a two-year measurement and study of the wind energy resources in the Southern California Desert for the California Energy Commission. 1981. $200,000 per year.

Primary climate-related internet posts

A Model for Atmospheric Carbon Dioxide: Abstract. August 9, 2017. http://edberry.com/blog/ed-berry/model-atmospheric-carbon-dioxide-abstract/

Why our CO2 emissions do not increase Atmosphere CO2: Part 2. January 4, 2017. http://edberry.com/blog/ed-berry/why-our-co2-emissions-do-not-increase-atmosphere-co2-part-2/

Why our CO2 emissions do not increase Atmosphere CO2. December 19, 2016. http://edberry.com/blog/ed-berry/why-our-co2-emissions-do-not-increase-atmosphere-co2/

Democrats keep lying about global warming. June 30, 2016. http://edberry.com/blog/ed-berry/democrats-keep-lying-about-global-warming/

Matthews Bradley promotes Climate Lysenkoism. March 6, 2016. http://edberry.com/blog/ed-berry/matthews-bradley-promotes-climate-lysenkoism/

Elwood and Thiessen promote Cargo Cult Science. March 6, 2016. http://edberry.com/blog/ed-berry/elwood-and-thiessen-promote-cargo-cult-science/

Today is Al Gore's Global Warming Doomsday. January 26, 2016. http://edberry.com/blog/ed-berry/today-is-al-gores-global-warming-doomsday/

Sun not CO2 causes climate change. September 29, 2015. http://edberry.com/blog/climate-physics/agw-hypothesis/new-study-sun-not-co2-causes-climate-change/

A Physics view of Climate Change. December 16, 2015. http://edberry.com/blog/ed-berry/a-physics-view-of-climate-change/

Climate alarmists tell climate lies. November 17, 2015. http://edberry.com/blog/ed-berry/climate-alarmists-tell-climate-lies/

An Adventure in Physics – An untold Story. March 24, 2015. http://edberry.com/blog/ed-berry/an-adventure-in-physics-an-untold-story/

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Take the Politics out of Climate Change. March 22, 2015. http://edberry.com/blog/ed-berry/take-politics-out-of-climate-change/

Professor Steve Running is not a Nobel Laureate. September 19, 2014. http://edberry.com/blog/ed-berry/professor-steve-running-nobel-laureate-2/

Commander Ryan Zinke is a better scientist than Professor Steve Running. August 8, 2014. http://edberry.com/blog/ed-berry/commander-ryan-zinke-better-scientist-professor-steve-running/

Physicist makes case against catastrophic climate change. January 26, 2014. http://edberry.com/blog/ed-berry/physicist-makes-case-catastrophic-climate-change/

Poll of Meteorologists shows only Half believe humans are primary cause of global warming. November, 26, 2013. http://edberry.com/blog/ed-berry/poll-of-meteorologists-shows-only-half-believe-humans-are-primary-cause-of-global-warming/

Questions for Professor Doug Coffin on HJ 10. February, 18, 2013. http://edberry.com/blog/ed-berry/questions-for-professor-doug-coffin-sponsor-of-hj-10/

Montana HJ-10 Rebuttal. February 18. 2013. http://edberry.com/blog/ed-berry/montana-hj-10-rebuttal/

Montana HJ 10: "Overwhelming scientific evidence"? February 8, 2013. http://edberry.com/blog/ed-berry/montana-hj-10-overwhelming-scientific-evidence/

There is no Global Warming in Montana. February 4, 2013. http://edberry.com/blog/ed-berry/there-is-no-global-warming-in-montana/

Open Letter to the City of Spokane. February 28, 2009. http://edberry.com/blog/ed-berry/berry-open-letter-to-the-city-of-spokane/

First, prove CO2 is a problem. January 24, 2012. http://edberry.com/blog/ed-berry/first-prove-co2-is-a-problem/

15 Donors have given $2090 to stop the Climate Change fraud in Montana. December 29, 2011. http://edberry.com/blog/ed-berry/15-donors-have-given-2090-to-stop-the-climate-change-fraud-in-montana/

Oregon Eco-Group files Climate Change Lawsuit against Montana Citizens. May 20, 2011. http://edberry.com/blog/ed-berry/oregon-eco-group-files-climate-change-lawsuit-against-montana-citizens-2/

The Wisdom of 1946: The Bear that Wasn't. July 29, 2010. http://edberry.com/blog/ed-berry/the-wisdom-of-1946-the-bear-that-wasnt/

MELISSA M. BILEC, PhD, LEED AP

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CAREER SUMMARY

- *Secured ~$6.25 million as PI or Co-PI, including 9 NSF grants.*
- *Developed a research program in the realm of high-performance buildings and communities, sustainable healthcare, life cycle assessment, and indoor air quality.*
- *Published 105 peer reviewed articles - 58 peer reviewed journal articles and 47 peer reviewed conference proceedings. An additional 6 articles are submitted and under review.*
- *Graduated 8 PhD students with 4 PhD students in progress. Advised 32 undergraduate researchers. 3 Post-Doctoral advisees.*
- *Developed a new M.S. in Sustainable Engineering degree and an Undergraduate Certificate in Sustainability.*
- *Received the four education excellence awards, including Carnegie Science Center Award in Higher Education and funding from NSF for developing innovative engineering education programs; developed four new sustainability classes.*
- *Leadership: Deputy Director at the Mascaro Center for Sustainable; ELATE training*
- *Committed to diversity efforts, serving on Engineering Diversity Advisory Committee and AGEP Internal Advisory Board, co-faculty advisor for Graduate Women in Engineering Network (GWEN)*
- *Developed an international collaboration in France with Centre Scientifique et Technique du Bâtiment (CSTB) and University of Toulouse.*

EDUCATION

Ph.D.	**Civil Engineering**	**University of Pittsburgh**	**2007**
M.S.	**Civil Engineering**	**University of Pittsburgh**	**1999**
B.S.	**Civil Engineering**	**University of Pittsburgh**	**1997**

APPOINTMENTS

2017 to Present:	Roberta A. Luxbacher Faculty Fellow
2015 to Present:	Deputy Director, Mascaro Center for Sustainable Innovation, University of Pittsburgh, Pittsburgh, PA
2014 to Present:	Associate Professor, Department of Civil and Environmental Engineering University of Pittsburgh, Pittsburgh, PA
2011 to 2014:	Assistant Professor, Department of Civil and Environmental Engineering University of Pittsburgh, Pittsburgh, PA (tenure stream)
2007 to 2015:	Assistant Director, Education and Outreach, Mascaro Center for Sustainable Innovation, University of Pittsburgh, Pittsburgh, PA
2010 to 2012:	Director, Construction Management and Green Construction Program
2008 to 2011:	Assistant Professor, Department of Civil and Environmental Engineering University of Pittsburgh, Pittsburgh, PA (non-tenure stream)

2007 to 2010:	Co-Director, Center for Sustainable Transportation Infrastructure, University of Pittsburgh, Pittsburgh, PA
2007 to 2008:	Visiting Research Assistant Professor, Department of Civil and Environmental Engineering University of Pittsburgh, Pittsburgh, PA
2004 to 2007:	Graduate Research Assistant, Department of Civil and Environmental Engineering, University of Pittsburgh
1999 to 2007:	Senior Project Engineer, Urban Redevelopment Authority, Pittsburgh, PA
1999:	Structural Engineer, SAI Consulting Engineers, Pittsburgh, PA

REFEREED JOURNAL PUBLICATIONS

PRIMARY STUDENT ADVISEES UNDERLINED, *CO-ADVISED STUDENTS ITALICIZED*.

SINCE THE MEANING OF AUTHOR ORDER VARIES IN SUSTAINABLE ENGINEERING, OUR COLLABORATIVE RESEARCH TEAMS HAVE AGREED TO THE STUDENT AS THE FIRST AUTHOR, AS APPROPRIATE, WITH PI/PRIMARY ADVISOR LAST.

Accepted/Published

58. Dancz, C.L.A., Ketchman, K.J., Burke, R.D., Hottle, T.A., Bilec, M.M., Parrish, K., Landis, A.E. (2017 accepted) "Utilizing Civil Engineering Senior Design Capstone Projects to Evaluate Students' Sustainability Education Across Engineering Curriculum." Accepted ASEE, *Advances in Engineering Education.*
57. Danzc, C.L.A., Bilec, M.M., Landis, A.E. (2017 accepted). "Incorporating Sustainability into Engineering Education Through an Active and Experiential Sustainable Engineering Module (Chair Lab)." Accepted *Journal of Professional Issues in Engineering Education.*
56. Unger, S. R., Hottle, T. A., Hobbs, S. R., Thiel, C. L., Campion, N., Bilec, M. M., & Landis, A. E. (2017). "Do single-use medical devices containing biopolymers reduce the environmental impacts of surgical procedures compared with their plastic equivalents?" *Journal of Health Services Research & Policy. http://dx.doi.org/10.1177/1355819617705683*
55. Whiston, M. M., Collinge, W. O., Bilec, M. M., and Schaefer, L. A., 2017 (accepted). "Exergy and economic comparison between kW-scale hybrid and atmospheric solid oxide fuel cell systems," J. Power Sources, accepted.
54. Hottle, T., Bilec, M.M., Landis, A.E. (2017). "Biopolymer Production and End of Life Comparisons Using Life Cycle Assessment." *Resources, Conservation & Recycling, 122, 295-306. http://dx.doi.org/10.1016/j.resconrec.2017.03.002*
53. Dancz, C.L.A., Parish, K., Bilec, M.M., Landis, A.E. (2017 accepted). "Assessment of Students' Mastery of Construction Management and Engineering Concepts through Board Game Design." Accepted *Journal of Professional Issues in Engineering Education and Practice*.
52. Vora, N., Shah, A., Bilec, M.M., Khanna, V. (2017). Food-Energy-Water Nexus: Quantifying Embodied Energy and GHG emissions from Irrigation through Virtual Water Transfers in Food Trade. *ACS Sustainable Chemistry & Engineering,* 5(3), 2119–2128. http://dx.doi.org/10.1021/acssuschemeng.6b02122
51. Hasik, V., Anderson, N.E., Collinge, W.O., Thiel, C.L., Khanna,V., Wirick, J., Piacentini, R., Landis, A.E., Bilec, M.M. (2017). "Evaluating the life cycle environmental benefits and tradeoffs of water reuse systems for net-zero buildings." *Environmental Science & Technology.* 51(3), 1110-1119. http://dx.doi.org/10.1021/acs.est.6b03879
50. Ketchman, K.J., Antaya, C.L.A., Burke, R., Parrish, K.P., Landis, A.E., Bilec, M.M. (2017). "Sustainable Engineering Cognitive Outcomes: Examining Different Approaches for

Curriculum Integration." *ASCE Journal of Professional Issues in Engineering Education and Practice*. http://dx.doi.org/10.1061/(ASCE)EI.1943-5541.0000324 - sthash.OMOVhlZ9.dpuf

49. Al-Ghamdi, S., Bilec, M.M. (2016). "On-Site Renewable Energy and Green Building Rating Systems: A System-Level Analysis." *Environmental Science & Technology.* 50, 4606-4614. *http://dx.doi.org/10.1021/acs.est.5b05382*
48. Al-Ghamdi, S., Bilec, M.M. (2016). "Green Building Rating Systems and Whole-Building LCA: A Comparative Study of the Existing Assessment Tools." *ASCE Journal of Architectural Engineering, 04016015, http://dx.doi.org/10.1061/(ASCE)AE.1943-5568.0000222*
47. Chopra, S.S., Dillon, T., Bilec, M.M., Khanna, V. (2016). "A Network-based Framework for Assessing Infrastructure Resilience: A Case Study of London Metro System." *Journal of Royal Society Interface. 13:20160113. http://dx.doi.org/10.1098/rsif.2016.0113*
46. Unger, S., Campion, N.A., Bilec, M.M., Landis, A.E. (2016). "Evaluating quantifiable metrics for hospital green checklists." *Journal of Cleaner of Production.* 127, 20 June 2016, 134-142. http://dx.doi.org/10.1016/j.jclepro.2016.03.167
45. Campion, N., Thiel, C.L., Focareta, J., Bilec, M.M. (2016). "Understanding Green Building Design & Healthcare Outcomes: An Evidence Based Design Analysis of an Oncology Unit." *ASCE Journal of Architectural Engineering. 04016009. http://dx.doi.org/10.1061/(ASCE)AE.1943-5568.0000217*
44. Xu, H., Collinge, W.O., Schaefer, L.A., Landis, A.E., Bilec, M.M., Jones, A.K. (2016). "Towards a Commodity Solution for the Internet of Things." *Elsevier Journal of Computers and Electrical Engineering*. 52, Issue C, May 2016, 138-156 http://dx.doi.org/10.1016/j.compeleceng.2016.03.009
43. Hottle, T., Luna Agüero, M., Bilec, M.M., Landis, A.E. (2016). "Alkaline Amendment for the Enhancement of Compost Degradation for Polylactic Acid (PLA) Biopolymer Products." *Compost Science & Utilization. 24(3), 159-173. http://dx.doi.org/10.1080/1065657X.2015.1102664*
42. Collinge, W.O., DeBlois, J., Landis, A.E., Schaefer, L.A., Bilec, M.M. (2016). "A hybrid dynamic-empirical building energy modeling approach for an existing campus building." *ASCE Journal of Architectural Engineering.* 04015010. *http://dx.doi.org/10.1061/(ASCE)AE.1943-5568.0000183*
41. Meeks, D.L., Hottle, T.A., Bilec, M.M., Landis, A.E. (2015). "Composted biopolymer use in the real world: Stakeholder interviews to better understand use and disposal in the U.S." *Resources, Conservation & Recycling*. 105, Part A, December 2015, 134-142. doi:10.1016/j.resconrec.2015.10.022
40. Whiston, M., Bilec, M.M., Schaefer, L.A. (2015). ""Influence of the charge double layer on solid oxide fuel cell stack behavior." *Journal of Power Sources.* 293, 20 October 2015, 767-777. doi:10.1016/j.jpowsour.2015.05.085
39. Al-Ghamdi, S., Bilec, M.M. (2015). "Life-Cycle Thinking and the LEED Rating System: Global Perspective on Building Energy Use and Environmental Impacts." *Environmental Science & Technology.* 49(7) 4048-4056. *http://dx.doi.org/10.1021/es505938u*
38. Campion, N., Thiel, C.L., Copley-Woods, N., Swanzy, L., Landis, A.E., Bilec, M.M. (2015). "Environmental Life-Cycle Impacts of Surgical Material Supply: A Comparative LCA of Disposable Custom Packs." *Journal of Cleaner Production. 94, 1 May 2015, 46–55. http://dx.doi.org/10.1016/j.jclepro.2015.01.076*

37. Hottle, T.A., Bilec, M.M., Brown, N.R., Landis, A.E. (2015). "Toward zero waste: Composting and recycling for sustainable venue based events." *Waste Management. 38, April 2015, 86-94. http://dx.doi.org/10.1016/j.wasman.2015.01.019*

36. Thiel, C.L., Woods, N., Landis, A.E., Eckelman, M.E., Guido, R., Sherman, J., Bilec, M.M. (2015). "Environmental Impacts of Surgical Procedures: Life Cycle Assessment of Hysterectomy in the US." *Environmental Science & Technology, 49(3) 1779-1786. http://dx.doi.org/10.1021/es504719g*

35. Whiston, M., Bilec, M.M., Schaefer, L.A. (2015). "SOFC Stack Model for Integration into a Hybrid System: Stack Response to Control Variables." *Journal of Fuel Cell Science and Technology.* 12(3), 031006, 11 pages, http://dx.doi.org/10.1115/1.4029877

34. Olinzock, M.A., Saunders, C.L., Collinge, W.O., Landis, A.E., Jones, A.K., Schaefer, L.A., Bilec, M.M. (2015). "Life Cycle Assessment Survey of the Building Community: Summary of Findings from 2011 to 2012." *International Journal of Life Cycle Assessment. 20(3) 318-331,* http://dx.doi.org/10.1007/s11367-014-0834-y

33. Collinge, W.O., Landis, A.E., Jones, A.K., Schaefer, L.A., Bilec, M.M. (2014). "Productivity metrics in dynamic LCA for whole buildings: using a post-occupancy evaluation to evaluate energy and indoor environmental quality tradeoffs." *Building and the Environment. 82,* December 2014, 339-348. *http://dx.doi.org/10.1016/j.buildenv.2014.08.032*

32. Thiel, C.L., Needy, K.L., Ries, R.J., Hupp, D., Bilec, M.M. (2014). "Building Design and Performance: A Comparative Longitudinal Assessment of a Children's Hospital." *Building and the Environment.* 78, August 2014, 130 136. http://dx.doi.org/10.1016/j.buildenv.2014.04.001

31. Dale, A.T., Bilec, M.M. (2014)," The Regional Energy & Water Supply Scenarios (REWSS) Model, Part I: Framework, Procedure, and Validation." *Sustainable Energy Technologies and Assessments,* 7, September 2014, 227-236. http://dx.doi.org/10.1016/j.seta.2014.02.003

30. Dale, A.T., Bilec, M.M. (2014)," The Regional Energy & Water Supply Scenarios (REWSS) Model, Part II: Case Studies in Pennsylvania and Arizona." *Sustainable Energy Technologies and Assessments,* 7, September 2014, 237-246. http://dx.doi.org/10.1016/j.seta.2014.02.006

29. Banawi, A.A., Bilec, M.M. (2014). "Applying Lean, Green, and Six-Sigma Framework to Improve Exterior Construction Process in Saudi Arabia." *Journal of Construction Engineering and Project Management*. 4(2), 12-22. http://dx.doi.org/10.6106/JCEPM.2014.4.2.012

28. Banawi, A.A., Bilec, M.M. (2014). "A Framework to Improve Construction Processes: Integrating Lean, Green, and Six-Sigma." *International Journal of Construction Management,* 14(1), 58-71. http://dx.doi.org/10.1080/15623599.2013.875266

27. Dale, A.T., Lucena, A.F., Marriott, J., Borba, B.S., Schaeffer, R., Bilec, M.M. (2013). "Modeling Future Life-Cycle Environmental Impacts of Electricity Supplies in Brazil." *Energies,* 6(7), 3182-3208. http://dx.doi.org/10.3390/en6073182

26. Hottle, T., Bilec, M.M., Landis, A.E. (2013). "Cradle-to-Cradle Sustainability Assessments of Bio-based Polymers." *Polymer Degradation and Stability,* 98(9), 1898-1907. http://dx.doi.org/10.1016/j.polymdegradstab.2013.06.016

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24. Deblois, J., Bilec, M.M., Schaefer, L.A. (2013). "Simulating Home Cooling Load Reductions for a Novel Opaque Roof Solar Chimney Configuration." *Applied Energy*, 112, December 2013, 142-151. http://dx.doi.org/10.1016/j.apenergy.2013.05.084

23. Saunders, C.L., Landis, A.E., Mecca, L., Jones, A.K., Schaefer, L.A., Bilec, M.M. (2013). "Analyzing the Practice of Life Cycle Assessment: Focus on the Building Sector." *Journal of Industrial Ecology*, 17(5), 777-788. DOI: 10.1111/jiec.12028.

22. Ketchman, K. and Bilec, M.M. (2013). "Quantification of Particulate Matter from Construction Activities using a Life Cycle Approach." *Journal of Construction and Engineering Management, 139(12) A4013007-1 to 10.* http://dx.doi.org/10.1061/(ASCE)CO.1943-7862.0000776

21. Thiel, C.L., Campion, N., Landis, A.E., Jones, A.K., Schaefer, L.S., Bilec, M.M. (2013). "A Materials Life Cycle Assessment of a Net-Zero Energy Building." *Energies, 6*(2), 1125-1141. http://dx.doi.org/10.3390/en6021125

20. Collinge, W.O., Landis, A.E., Jones, A.K., Schaefer, L.A., Bilec, M.M. (2013). "Indoor Environmental Quality in a Dynamic Life Cycle Assessment for Whole Buildings: Focus on Human Health Chemical Impacts." *Buildings and the Environment,* 62, 182-190. http://dx.doi.org/10.1016/j.buildenv.2013.01.015

19. Shrake, S.O., Bilec, M.M., Landis, A.E. (2013). "The application of a multi-faceted approach to evaluating and improving the life cycle environmental performance of service industries." *Journal of Cleaner Production,* 42, 263-276. http://dx.doi.org/10.1016/j.jclepro.2012.10.039

18. Collinge, W.C., Landis, A.E., Jones, A., Schaefer, L., Bilec, M.M. (2013). "A Dynamic Life Cycle Assessment: Framework and Application to an Institutional Building." *International Journal of Life Cycle Assessment,* 18(3), 538-*552. http://dx.doi.org/10.1007/s11367-012-0528-2*

17. Deblois, J., Bilec, M.M., Schaefer, L.A. (2013) "Design and Zonal Building Information Modeling of a Roof Integrated Solar Chimney." *Renewable Energy,* 52(0), 241-250. http://dx.doi.org/10.1016/j.renene.2012.10.023

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14. Campion, N., Thiel, C.L., DeBlois, J., Woods, N.C., Landis, A.E., Bilec, M.M. (2012) "Life Cycle Perspectives of Delivering an Infant in the US." *Science of the Total Environment,* 425, 191-198. *http://dx.doi.org/10.1016/j.scitotenv.2012.03.006*

13. Rajagopalan, N., Bilec, M.M., Landis, A.E. (2012). Evaluation of Green Product Labeling Systems with Life Cycle Assessment. *International Journal of Life Cycle Assessment*, 17(6), 753-763, doi:10.1007/s11367-012-0416-9.

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11. Aktas, C.B., Bilec, M.M. (2012). "Impact of Lifetime on U.S. Residential Building LCA Results." *International Journal of Life Cycle Assessment,* 17(3), 337-349. doi: 10.1007/s11367-011-0363-x

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9. *Shrake, S.,* Landis, A.E., Bilec, M.M., Collinge, W., Xiaobo, X. (2010). "A Comparative Analysis of Performance and Cost Metrics Associated with Diesel to Biodiesel Fleet Transition." *Energy Policy,* 38(2010), 7451-7456. http://dx.doi.org/10.1016/j.enpol.2010.08.031

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7. Bilec, M. M., Geary, M., Ries, R. J., Needy, K. L., & Cashion, M. (2010). "A method for quantifying the benefits of greening a healthcare facility." *Engineering Management Journal,* 22(3), 3-11.

6. Bilec, M.M., Ries, R.J., Matthews, H.S. (2010). "Life Cycle Assessment Modeling of Construction Processes for Buildings." *Journal of Infrastructure Systems,* 16(3), 199-205.

5. Bilec, M.M., Needy, R., Gokhan, N.M., Ries, R., Horman, M., Phelps, A.F., Enache-Pommer, E., Little, S., McGregor, B., and Sheane, C. (2009). "Analysis of the Design Process of Green Children's Hospitals: Focus on Process Mapping and Lessons Learned." *Journal of Green Building*, (4) 1, 121-134. http://dx.doi.org/10.3992/jgb.7.4.100

4. Bilec, M.M., and Ries, R. (2007). "Preliminary Study of Green Design and Project Delivery Method in the Public Sector." *Journal of Green Building,* 2(2), 151-160.

3. Bilec, M.M., Ries, R., Matthews, H.S. (2007). "Sustainable Development and Green Design – Who is Leading the Green Initiative?" *Journal of Professional Issues in Engineering Education and Practice,* 133(4), 265-269.

2. Bilec, M., Ries, R., Matthews, H. S., and Sharrard, A. L. (2006). "Example of a Hybrid Life Cycle Assessment of Construction Processes." *Journal of Infrastructure Systems*, 12(4), 207-215.

1. Ries, R., Bilec, M., Gokhan, N. M., and Needy, K. L. (2006). "The Economic Benefits of Green Buildings: A Comprehensive Case Study." *The Engineering Economist*, 51(3), 259-295 (Ranked #3 as the most often downloaded article in 2009).

SUBMITTED

6. Tian, S., Bilec, M.M. (2017 submitted). "Integrating Site Specific Dispersion Modeling into Life Cycle Assessment: Focus on Inhalation Risks in Chemical Production. Submitted to *Journal of Cleaner Production.*

5. Ketchman, K.J., Riley D., Bilec, M.M. (2017 submitted). "A Survey of Homeowners' Motivations for the Adoption of Energy Efficiency Measures: Evaluating a Holistic Energy Assessment Program." Submitted to *ASCE Journal of Architectural Engineering*
4. Burke, R.D., Dancz, C.L.A., Ketchman, K.J., Bilec, M.M., Boyer, T.H., Davidson, C., Landis, A.E., Parrish, K.P. (2016 submitted). "Engineering Faculty Perspectives on Sustainability Integration in Engineering Curriculum." Submitted to *Environmental Engineering Science.*
3. Thiel, C.L., Woods, N.C., Bilec, M.M. (2017 submitted). "Strategies to Reduce Greenhouse Gas Emissions from Laparoscopic Surgery." Submitted to *Lancet, Planetary Health*
2. Thiel, C.L., Carvalho, R. F., Hess, L., Tighe, J., Bilec, M.M., Baratz, M. (2016). "Minimal Custom Pack Design and Wide-Awake Hand Surgery: Reducing Waste and Spending in the Orthopedic Operating Room." Submitted to *Journal of Hand Surgery.*
1. Chhabra, J., Hasik, V., Bilec, M.M., Warn, G.P (2016 submitted). "A probabilistic approach for assessing the environmental performance of building designs accounting for natural hazards." Submitted to *ASCE Journal of Architectural Engineering.*

REFEREED CONFERENCE PROCEEDINGS

47. Hasik, V., Chhabra, J. P. S., Warn, G. P., & Bilec, M. M. (2017). "Investigation of the Sustainability and Resilience Characteristics of Buildings Including Existing and Potential Assessment Metrics". Proceedings from the ASCE Architectural Engineering Institute Conference, April 11-13, 2017, Oklahoma City, Oklahoma
46. Rickenbacker, H.J., Collinge, W.O., Hasik, V., Bilec, M.M. (2016). "Indoor Air Quality Assessments of Diverse Buildings in an Energy Conservation District from a Life Cycle Assessment Lens: Short Paper." Proceedings of the 3rd ACM International Conference on Systems for Energy-Efficient Built Environments (BuildSys 2016). November 15-17, 2016. Stanford, California. DOI: https://doi.org/10.1145/2993422.2993424
45. Antaya-Dancz, C.L., Ketchman, K.J., Burke, R.A., Mahmud, R., Bilec, M.M., Adams, E.A., Parrish, K., Allenby, B., Khanna, V., Landis, A.E. (2016). "Integrating Sustainability Grand Challenges and Experiential Learning into Engineering Curricula: Years 1 through 3." American Society for Engineering Education, June 26-29, 2016 New Orleans, LA.
44. Ketchman, K.J., Riley, D., Khanna, V., Bilec, M.M. (2016). "Evaluation of Holistic Energy Assessment Program." International Conference on Sustainable Design, Engineering, and Construction, May 18-20, 2016, Tempe, Arizona. Procedia Engineering, 145, 468-475. doi:http://dx.doi.org/10.1016/j.proeng.2016.04.020
43. DeBlois, J., Collinge, W.O., Bilec, M.M., Schaefer, L.A. (2015). "Calibration and Modeling for a Dashboard that Provides Real-Time Feedback on Energy Saving Strategies." Proceedings of Building Simulation Conference 2015, December 12-15, 2015, Hyderabad, India.
42. Campion, N.A., Mokashi, M., Wylie, A., Bilec, M.M. (2015). "Integrating Environmental and Cost Assessments for Data Driven Decision-Making: A Roof Retrofit Case Study." Proceedings of the International Symposium on Sustainable Systems and Technology, v. 3, May 18-20, 2015, Dearborn, Michigan.
41. Al-Ghamdi, S., Bilec, M.M. (2015). "Whole-Building LCA and Green Building Rating Systems: Exploratory Review of the Available Tools." Proceedings of the International Symposium on Sustainable Systems and Technology, v. 3, May 18-20, 2015, Dearborn, Michigan.

41. Antaya-Dancz, C., Ketchman, K.J., Burke, R., Bilec, M.M., Adams, E.A., Allenby, B., Chester, M., Khanna, V., Parrish, K., Seager, T.S., Landis, A.E. (2015). "Integrating Sustainability Grand Challenges and Experiential Learning into Engineering Curricula: Years 1 and 2." American Society for Engineering Education, June 14-17, 2015 Seattle, WA.

39. Antaya-Dancz C., Ketchman, K.J., Bilec, M.M., Landis, A.E. (2015). "Redesign of a Sustainability Experiential Learning Module for Transferability and Portability." Proceedings of American Society of Engineering Educators, June 14-17, 2015, Seattle, Washington.

38. H. Xu, M. M. Bilec, W. O. Collinge, L. A. Schaefer, A. E. Landis, and A. K. Jones, Improving Efficiency of Wireless Sensor Networks Through Lightweight In-Memory Compression, International Conference on Dependable Systems and Networks (IGSC), 2015. DOI: 10.1109/IGCC.2015.7393696

37. Xu, H., Bilec, M. M., Collinge, W.O., Schaefer, L.A., Landis, A.E., and Jones, A.K. (2015) "Lynx: A Self-Organizing Wireless Sensor Network with Commodity Palmtop Computers." Proceedings of ACM/IEEE System Level Interconnect Prediction 2015, June 7-11, 2015, San Francisco, California.

36. Collinge, W.O., Thiel, C.L., Al-Ghamdi, S.G., Woloschin, C.L., Soratana, K., Landis, A.E., Bilec, M.M. (2015). "Integrating life cycle assessment with green building and product rating systems: North American perspective." Procedia Engineering from International Conference on Sustainable Design, Engineering and Construction. May 10-13, 2015, Chicago, Illinois. 10.1016/j.proeng.2015.08.500

35. Al-Ghamdi, S. and Bilec, M.M. (2014). "Green Building Rating Systems and Environmental Impacts of Energy Consumption from an International Perspective." Proceedings of the 2014 International Conference on Sustainable Infrastructure, Committee on Sustainability of the American Society of Civil Engineers, November 6-8, 2014, Long Beach, California, pp. 631-640. doi: 10.1061/9780784478745.058

34. Hottle, T.A., Bilec, M.M., Meeks, D.L., Landis, A.E. (2014). "Biopolymer Wastes: Assessing the Shift to Compost-based Waste Management." American Center for Life Cycle Assessment, Proceedings of LCA XIV, October 6-8, 2014, San Francisco, California.

33. Marks, J., Ketchman, K.J., Riley, D.R., Brown, L.R., Bilec, M.M. (2014). "Understanding the Benefits of the Flipped Classroom in the Context of Sustainable Engineering." Proceedings of American Society of Engineering Educators, June 15-18, 2014, Indianapolis, Indiana.

32. Antaya, C.L., Parrish, K., Bilec, M.M., Landis, A.E. (2014). "Assessing Comprehension with Student-Developed Construction Games." Proceedings of American Society of Engineering Educators, June 15-18, 2014, Indianapolis, Indiana.

31. Bilec, M.M., Mosse, D., Smith, M.S., Cartier, J.L. (2014). "University of Pittsburgh Developing Highly Qualified Middle Grades Teachers with Expertise in STEM Disciplines via SUSTAINS." Proceedings of American Society of Engineering Educators, June 15-18, 2014, Indianapolis, Indiana.

30. Collinge, W.O., Thiel, C.L., Campion, N., Landis, A.E., Bilec, M.M. (2014). "Evaluation of a Living Building using Dynamic LCA." Proceedings of International Symposium on Sustainable Systems and Technology, May 18-21, 2014, Oakland, California.

29. DeBlois, J.C., Collinge, W.O., Bilec, M.M., Jones, A.K., and Schaefer, L.A., (2014) "Modeling a Multi-Purpose Public Building with Stochastic Gains and Occupancy Schedules," *ASHRAE Winter Meeting*, January 18-14, 2014, New York, NY, 12093.

28. Jones, A.K., Chen, Y., Collinge, W.O., Xu, H., Schaefer, L.A., Landis, A.E., Bilec, M.M. (2013) "Considering Fabrication in Sustainable Computing." Proceedings of the International Conference on Computer Aided Design (ICCAD), pp. 206-210, November 18-21, 2013, San Jose, California.

27. Xu, H., Bilec, M.M., Schaefer, L.A., Landis, A.E., Jones, A.K. (2013). "Ocelot: A Wireless Sensor Network and Computing Engine with Commodity Palmtop Computers." Conference Proceedings, Green Computing Conference (IGCC), June 27-29, 2013, Arlington, Virginia. doi: 10.1109/IGCC.2013.6604482

26. Saunders, C., Landis, A.E., Schaefer, L.A., Jones, A.K., Bilec, M.M. (2013). "Understanding Energy Models Results in the Context of a Building's Lifetime: Focus on a High Performance Building." Conference Proceedings, International Symposium on Sustainable Systems and Technology, May 15-17, 2013, Cincinnati, Ohio.

25. Landis, A.E., *Shrake, S.O.,* Bilec, M.M. (2012). "Life Cycle Assessment to Assess and Improve small service business operations." American Center for Life Cycle Assessment, Proceedings of LCA XII, September 27-29, 2012, Tacoma, Washington.

24. Thiel, C., Bilec, M.M, Needy, K.L. (2012). "Impacts of Green Design on Hospital Performance in the United States." Proceedings of Smart and Sustainable Built Environments: Emerging economies. June 27-29, 2012, Sao Paolo, Brazil.

23. Collinge, W.O., Deblois, J., Sweriduk, M., Landis, A.E., Jones, A.K., Schaefer, L.A., Bilec. M.M. (2012). "Measuring Whole-Building Performance with Dynamic Life-Cycle Assessment: A Case Study of a Green University Building." International Symposium on LCA and Construction. July 10-12, 2012, Nantes, France.

22. Collinge, W.O., Landis, A.E., Jones, A.K., Schaefer, L.A., Bilec, M.M. (2012). "Integrating Indoor Environmental Quality Metrics in a Dynamic Life Cycle Assessment Framework For Buildings." 2012 IEEE International Symposium on Sustainable Systems and Technology. May 16-18, 2012, Boston, Massachusetts.

21. Thiel, C.L., Campion, N., DeBlois, J., Woods, N.C., Landis, A.E., Bilec, M.M. (2012). "Life Cycle Assessment of Medical Procedures: Vaginal and Cesarean Section Births." 2012 IEEE International Symposium on Sustainable Systems and Technology. May 16-18, 2012, Boston, Massachusetts.

20. Saunders, C.L., Landis, A.E. Jones, A.K., Schaefer, L.A., Bilec, M.M. (2012). "Utilizing Measured Energy Usage to Analyze Design Phase Energy Models." Proceedings of 2012 IEEE International Symposium on Sustainable Systems and Technology. May 16-18, 2012, Boston, Massachusetts.

19. Collinge, W.O., Bilec, M.M., Landis, A.E., Jones, A.K., Schaefer, L.A. (2011). "Scenario Modeling for Dynamic Life Cycle Assessment of Commercial and Institutional Building." American Center for Life Cycle Assessment, Proceedings of LCA XI, October 4-6, 2011, Chicago, Illinois.

18. *Shrake, S.O.,* Landis, A.E., Bilec, M.M. Gomes Da Silva, M. (2011). "The Development and Implementation of Life Cycle Assessment courses in Brazilian Universities." American

Center for Life Cycle Assessment, Proceedings of LCA XI, October 4 -6, 2011, Chicago, Illinois.

17. Thiel, C., Shake, S.O., Campion, N., Bilec, M.M., Landis, A.E., Woods, N. (2011). "Applications of Life Cycle Assessment: Sustainable Healthcare." American Center for Life Cycle Assessment, Proceedings of LCA XI, October 4 -6, 2011, Chicago, Illinois.

16. *Stamatakis, N., Osterwood, K.,* Bilec, M.M., Landis, A.E. (2011) "Consumers and Composting: Assessing Willingness to Pay for Composting in a Commercial Setting using Contingent Valuation." American Center for Life Cycle Assessment, Proceedings of LCA XI, October 4 - 6, 2011, Chicago, Illinois.

15. Bilec, M.M., Hendrickson, C., Landis, A.E., Matthews, H.S. (2011). "Updating the Benchmark Sustainable Engineering Education Report – Trends from 2005 to 2010." Proceedings of 118th American Society for Engineering Education Annual Conference and Exposition, June 26 - 29, 2011, Vancouver, BC, Canada.

14. Landis, A.E., Bilec, M.M., Klotz, L., Pearce, A.R. (2011). "Lessons learned from a Distance Learning Research Methods Course co-taught by Clemson, University of Pittsburgh, and Virginia Tech. Proceedings of 118th American Society for Engineering Education Annual Conference and Exposition, June 26 - 29, 2011, Vancouver, BC, Canada.

13. *Shrake, S.,* Landis, A.E., Bilec, M.M., (2011). "Greening the Service Industries: A Case Study of the United States Engineering Consulting Firm." Proceedings of the 2011 IEEE International Symposium on Sustainable Systems and Technology. May 16-18, 2011, Chicago, Illinois. *Received 2nd place award for best student conference paper.*

12. Collinge, W.O., Liao,L., Xu, H., Saunders, C.L., Bilec, M.M., Landis, A.E., Jones, A.K., Schaefer, L.A. (2011). "Enabling Dynamic Life Cycle Assessment of Buildings with Wireless Sensor Networks" Proceedings of the 2011 IEEE International Symposium on Sustainable Systems and Technology. May 16-18, 2011, Chicago, Illinois.

11. Landis, A.E., Bilec, M.M., Rajagopalan, N.R. (2009). "Life Cycle Assessment for Evaluating Green Products and Materials." US-Japan Workshop on Life Cycle Assessment of Sustainable Infrastructure Materials, October 21-22, 2009, Sapporo, Japan.

10. Torick, D., Bilec, M.M., Marriott, J., and Landis, A.E. (2009). "Development and Outcomes of a Design for the Environment Course." Proceedings of the 116th American Society for Engineering Education Annual Conference and Exposition. June 16, 2009, Austin, Texas.

9. Rajagopalan, N., Landis, A.E., Bilec, M.M. (2009). "Environmental Impacts of Insulating Concrete Forms." Proceedings of the 2009 IEEE International Symposium on Sustainable Systems and Technology. June 2009, Phoenix, Arizona.

8. Landis, A.E. and Bilec, M.M. (2008). "Analysis, Heuristics, and Uncertainty of Hybrid Life Cycle Assessment: Agriculture and Construction Case Studies." First International Symposium on Life-Cycle Engineering, June 11-14, 2008, Lake Como, Italy.

7. Needy, K., Gokham, N.M., Bilec, M.M., Ries, R., Horman, M., Phelps, A., Pommer, E.E. (2008). "The Use of Process Mapping to Compare Green Children's Hospital Designs." Industrial Engineering Research Conference Proceedings, May 2008, Vancouver, B.C.

6. Bilec, M.M. and Ries, R. (2007). "Preliminary Study of Green Design and Project Delivery Methods in the Public Sector." 2007 ASCE Construction Research Congress Proceedings, May 6-8, 2007, Grand Bahamas Island.

5. Ries, R., Bilec M.M., Needy, K. L., and Gokhan, N. M. (2007). "Green Building Construction: Cost/Benefit Analysis of a Precast Concrete Manufacturing Plant." 2007 ASCE Construction Research Congress Proceedings, May 6-8, 2007, Grand Bahamas Island – *Received Best Paper Award*

4. Sharrard, A.L., Nikithser, A., Matthews, H.S., Bilec, M.M. (2007). "The Challenge of Correlating Local Air Monitor Data with Construction Site Activity: A Pittsburgh Case Study." 2007 ASCE Construction Research Congress Proceedings, May 6-8, 2007, Grand Bahamas Island.

3. Needy, K. L., Gokhan, N. M., Ries, R., and Bilec M.M. (2007). "Green Building Metrics: Research Methodology, Results, and Future Directions." Industrial Engineering Research Conference Proceedings. May 19-23, 2007, Nashville, Tennessee.

2. Needy, K.L., Ries, R., Gokhan, N.M., Bilec, M.M., Rettura, B. (2005). "A Research Protocol for Analyzing the Benefits of Green Building Construction." Industrial Engineering Research Congress Proceedings, May, 2005, Atlanta, Georgia.

1. Needy, K.L., Ries, R., Gokhan, N.M., Bilec, M.M., and Rettura, B. (2004). "Creating a Framework to Examine Benefits of Green Building Construction." Proceedings of American Society for Engineering Management, 25th National Conference, October 20-23, 2004, Alexandria, Virginia.

INVITED PRESENTATIONS

Bilec, M.M. (2017). "The Pittsburgh 2030 District IEQ Pilot Measure." Invited presentation, Green Building Alliance, Evolving Workplace: Designing and Operation Office Building for Health and Productivity. May 2, 2017, Pittsburgh, Pennsylvania.

Bilec, M.M. (2017). "Are We Using Buildings to Inspire and Motivate Health and Sustainability?" Invited Seminar, Clemson University, February 17, 2017, Clemson, South Carolina.

Bilec, M.M. (2016). "IAQ and Green Building Alliance (GBA)/Pittsburgh 2030 District." Webinar presentation to the Federal Interagency Committee on Indoor Air. June 8, 2016. U.S. Environmental Protection Agency, Washington, D.C.

Bilec, M.M. (2016). "Are We Using Buildings to Inspire and Motivate Health and Sustainability?" Keynote Presentation, International Conference on Sustainable Design, Engineering, and Construction, May 18-20, 2016, Tempe, Arizona.

Bilec, M.M. (2016). "Occupant Behavior, Citizen Science, and ROCIS." Invited Presentation, Reducing Outdoor Contaminants in Indoor Spaces Stakeholder Meeting. February 26, 2016, Pittsburgh, Pennsylvania.

Bilec, M.M. and Thiel, C.L. (2016). "Efficiency and Material Optimization Research for UPMC Surgeons." Surgical Team Workgroup Greening Meeting. January 19, 2016, Pittsburgh, Pennsylvania.

Bilec, M.M. (2015). "What is Happening with Indoor Air Quality?" Invited Presentation, Pittsburgh 2030 District Partner Meeting in Oakland, December 15, 2015, Pittsburgh, Pennsylvania.

Bilec, M.M. (2015). "What is Happening with Indoor Air Quality?" Invited Presentation, Pittsburgh 2030 District Partner Meeting Downtown, November 9, 2015, Pittsburgh, Pennsylvania.

Bilec, M.M. (2015). "Dynamic Life Cycle Assessment, Indoor Air Quality, and 2030 Districts." NSF Research Coordination Network-SEES: Predictive Modeling Network for Sustainable Invited Presentation, Human-Building Ecosystems Workshop, October 6 to 7, 2015, Pittsburgh, Pennsylvania.

Bilec, M.M. and Collinge, W.O. (2015). "2030 District and Indoor Air Quality?" Green Workplace Challenge, Air Quality, August 27, 2015, Pittsburgh, Pennsylvania.

Bilec, M.M. (2015). "Sustainable Healthcare?" Bioengineering Day, April 16, 2015, Pittsburgh, Pennsylvania.

Bilec, M.M. (2015). "2030 District and Indoor Air Quality?" Innovation and Performance Speakers Series, Inaugural, Indoor Air Quality, April 8, 2015, Pittsburgh, Pennsylvania.

Bilec, M.M. (2014). "Indoor Air Quality and 2030 District." Creating Healthy Places: Protecting Indoor Spaces from Outdoor Pollution, Reducing Outdoor Contaminants in Indoor Spaces (ROCIS) Forum. December 3-4, 2014, Pittsburgh, Pennsylvania.

Bilec, M.M. (2014). Invitation from National Academy of Engineers to present at Frontiers of Engineering Education Symposium, *Writing Successful NSF Proposals*. October 29, 2014, Irvine, California.

Bilec, M.M. (2014). "Sustainable Healthcare—A Paradox or a Possibility?" Swanson School of Engineering, Board of Visitors, October, 18, 2014, Pittsburgh, Pennsylvania.

Bilec, M.M. (2014). "Sustainable Healthcare—A Paradox or a Possibility?" Science 2014, Sustain It! October 1-3, 2014, Pittsburgh, Pennsylvania.

Bilec, M.M. (2014). "Incorporating Big Data into Life Cycle Assessment of Buildings and Green Building Rating Systems." North America-East Asia Workshop on Big Data Analytics for Infrastructure and Building Sustainability and Resilience, September 19-22, 2014, Beijing, China.

Bilec, M.M. (2013). "Waste — Focus on Greening the Operating Room, an 'Affordability' Hotspot." Kaiser Permanente 3rd Environmental Summit, October 4, 2013, Oakland, California.

Bilec, M.M. (2013). "Improving Environmental Performance of the Operating Room." Greening the OR workshop, July 30, 2013, Magee Women's Hospital, Pittsburgh, PA.

Bilec, M.M. (2013). "Editor's Roundtable Panel Discussion." International Symposium on Sustainable Systems and Technology, May 15-17, 2013, Cincinnati, Ohio.

Bilec, M.M. (2013). "Life Cycle Thinking and the Built Environment." Invited speaker at University of Massachusetts – Amherst, Environmental Conservation Symposium, April 12, 2013, Amherst, Massachusetts.

Landis, A.E. and Bilec, M.M. (2012). "Life Cycle Thinking in Healthcare and Supply Chain." Invited speaker at Mayo's Sustainability Symposium. Arizona State University, November, 8, 2012, Tempe, Arizona.

Bilec, M.M. and Landis, A.E. (2012). "Going Green: Life Cycle Thinking in Healthcare." Invited speaker at Sustainability Grand Rounds. University of Washington, Harborview Medical Center, Environmental Sustainability Steering Committee, September 24, 2012, Seattle, Washington.

Bilec, M.M. (2012). "Life Cycle Assessment of Street Lighting." Invited speaker at Pennsylvania Society of Professional Engineers." September 13, 2012, Cranberry Pennsylvania.

Bilec, M.M. and Copley, N.C. (2012). "Life Cycle Analysis of Delivering an Infant in the US." Invited seminar at CleanMed. May 3, 2012. Denver, Colorado.

Bilec, M.M. (2012). "From Buildings to Healthcare – Understanding and Improving the Complex Systems Using Environmental Life Cycle Assessment." Invited seminar at Arizona State University, March 6, 2012, Tempe, Arizona.

Bilec, M.M. (2012). "Sustainable Healthcare?" Invited seminar for Green Design Institute at Carnegie Mellon University. February 28, 2012, Pittsburgh, Pennsylvania.

Bilec, M.M. (2012). "Green Buildings: Investment and Payback." Invited Panel Session. Building Sustainable Neighborhoods: Powering Sustainable Development in Allegheny County. February 13, 2012, Pittsburgh, Pennsylvania.

Bilec, M.M. (2011). "A Life-Cycle Approach to Environmental Impacts of Marcellus Shale Gas." Wesley Eckenfelder Foundation Lecture Series on Mitigating Environmental Effects from Marcellus Shale Gas Drilling Operations. November 7, 2011, Pittsburgh, Pennsylvania.

Bilec, M.M. (2011). "Our Sustainable Future – Life Cycle Thinking and Quantification." Invited seminar at Chatham University, May 12, 2011, Pittsburgh, Pennsylvania.

Bilec, M. (2010). "Sustainability: Systems, Buildings, and Materials." American Concrete Institute National Convention. October, 25, 2010. Pittsburgh, Pennsylvania.

Bilec, M., Aktas, C. (2010). "Case Study: University of Pittsburgh's Inventory and Action Plan." Higher Education Climate Consortium, July 21, 2010. Pittsburgh, Pennsylvania.

Bilec, M., Landis, A.E., Matthews, H.S., Hendrickson, C.T. (2010) "Sustainability in Education and Research." National Civil Engineering Department Heads Conference, May 26-27, 2010, Pittsburgh, Pennsylvania.

Bilec, M. (2010). "University of Pittsburgh's Greenhouse Gas Inventory." Urban Campuses: Leadership for Energy and Sustainability, Presentation and Panel Discussion, Duquesne University, May 12, 2010, Pittsburgh, Pennsylvania.

Bilec, M.M. (2008). "Beyond Bricks and Mortar – Using Life Cycle Assessment." Green Buildings and Landscape Symposium- Sustainability-Centered Operations, Presentation, Phipps Conservatory and Botanical Gardens, November 6-7, 2008, Pittsburgh, Pennsylvania.

Bilec, M. and Cook, R. (2007). "Hot Metal Bridge Tour." International Bridge Conference, June 2007, Pittsburgh, Pennsylvania.

Bilec, M. (2006). "A Tale of Two Tunnels and One Bridge – The Hot Metal Pedestrian Bridge." Presentation, Western Pennsylvania Trail Symposium, October 2006, Cranberry, Pennsylvania.

ADDITIONAL PUBLICATIONS, REPORTS, AND PRESS

Bilec, M.M. (2016). Developed P4 Air Measure for P4 Performance Measure Document. http://p4pittsburgh.org/pages/p4-performance-measures

Bilec, M.M. and Hasik, V. (2016). "Greenhouse Gas Inventory of the University of Pittsburgh, 2015." Completed 2016.

Pittsburgh Engineer, Quarterly Publication of the Engineers' Society of Western Pennsylvania, Women in Engineering Issue, Spring 2015. *A Sustainable Future in Engineering.* Press.

Bilec, M.M. and Ketchman, K.J. (2013). "Greenhouse Gas Inventory of the University of Pittsburgh, 2013." Completed 2013.

Shrake, S., Thiel, C., Landis, A., Bilec, M.M. (2012). "Life Cycle Assessment as a Tool for Improving Service Industry Sustainability." *IEEE, Potentials*. 30:1, 10-15.

Aktas, C.B., Bilec, M.M. (2010). "Greenhouse Gas Inventory of the University of Pittsburgh, 2012." Completed June 2, 2010.

Bilec, M.M., Marriott, J., Padilla, M.F., Snyder, M. (2010). Market Analysis of Construction Materials with Recommendations for the Future of the Industry. FHWA Report No.: FHWA-PA-2010-004-PIT016. Prepared for Pennsylvania Department of Transportation. pp. 134.

Landis, A.E., Bilec, M.M. Shrake, S.O., Collinge, W., Xiaobo, X. (2010). Biodiesel Fuel Feasibility Study. FHWA Report No.: FHWA-PA-2010-008-PIT017. pp. 246.

Marriott, J.M., Bilec, M, Harries, K.A., Aktas, C.B. (2009). "Pultruded Green Composites." Completed December 2009, presented to the Green Building Alliance and Bedford Reinforced Plastics.

Sharrard, A., Bilec, M.M., Ries, R.J. (2005). "Editorial: Green Building Rating Systems and LCA." *Journal of Contemporary Wood Engineering,* 15(3), 11-13.

PRESENTATIONS AND POSTERS

Hasik, V., Chhabra, J. P. S., Warn, G. P., Bilec, M.M. (2017). "Considering Energy, Water, and Structural Resilience of Buildings in a Life Cycle Assessment Framework." Presentation, 2017 Joint Conference International Society for Industrial Ecology and International Symposium on Sustainable Systems and Technologies Conference, June 25-29, 2017, Chicago, Illinois**.**

Rickenbacker, H.J., Collinge, W.O., Hasik, V., Bilec, M.M. (2017). "A Comparative Analysis of Conventional Buildings and Green Buildings: Energy Conservation Strategies and their Impact on Indoor and Ambient Air Quality." Presentation, 2017 Joint Conference International Society for Industrial Ecology and International Symposium on Sustainable Systems and Technologies Conference, June 25-29, 2017, Chicago, Illinois**.**

Ketchman, K.J., Khanna, V., Bilec, M.M. (2017). "Small Commercial's Big Problem: Disaggregating whole building energy bills." Poster, 2017 Joint Conference International Society for Industrial Ecology and International Symposium on Sustainable Systems and Technologies Conference, June 25-29, 2017, Chicago, Illinois**.**

Hasik, V., Chhabra, J. P. S., Warn, G. P., Bilec, M.M. (2017). "Investigation of the Sustainability and Resilience Characteristics of Buildings Including Existing and Potential Assessment

Metrics." Architectural Engineering Institute Conference, April 11-13, 2017, Oklahoma City, Oklahoma

Rickenbacker, H.J., Brown, F., Bilec, M.M. (2017). "Creating Environmental Consciousness in an At-Risk Community through Civic Engagement Strategies and Resident-Inclusive Mobile Air Quality Monitoring." Presentation, Engineering Sustainability 2017, April 9-11, 2017, Pittsburgh, Pennsylvania.

Collinge, W.O., Landis, A.E., Bilec, M.M. (2017). "Comparison of two "green" buildings using real-time data in a dynamic LCA framework." Poster, Engineering Sustainability 2017, April 9-11, 2017, Pittsburgh, Pennsylvania.

Bilec, M.M. Rickenbacker, H.J., Collinge, W.O., Hasik, V., Olinzock, M. (2017). "Indoor Air Quality Monitoring and Multiple Pittsburgh Buildings." Presentation, Engineering Sustainability 2017, April 9-11, 2017, Pittsburgh, Pennsylvania.

Ketchman, K.J., Bilec, M.M. (2017)." Disaggregating Small Commercial End-Use Energy Using a Novel Bottom-Up Approach." Presentation, Engineering Sustainability 2017, April 9-11, 2017, Pittsburgh, Pennsylvania.

Hasik, V., Chhabra, J.P.S., Warn, G.P., Bilec, M.M. (2017). "Models, Methods, and Metrics for Design of Sustainable and Resilient Buildings." Poster, Engineering Sustainability 2017, April 9-11, 2017, Pittsburgh, Pennsylvania.

Rickenbacker, H.J., Collinge, W.O., Hasik, V., Bilec, M.M. (2016). "Indoor Air Quality Assessments of Diverse Buildings in an Energy Conservation District from a Life Cycle Assessment Lens." November 15-17, 2016, Stanford, California

Hasik, V., Chhabra, J.P.S., Warn, G.P., Bilec, M.M. (2016). "Sustainable and Resilient Buildings: Exploring Missing Phases in Whole Building Life Cycle Assessment." Poster, American Center for Life Cycle Assessment LCA XVI, September 27-29, 2016, Charleston, South Carolina.

Hasik, V., Anderson, N.E., Collinge, W.O., Thiel, C.L., Khanna, V., Wirick, J., Piacentini, R., Landis, A.E., Bilec, M.M. (2016). "Comparative life cycle assessment of decentralized and centralized water systems on a building level." Presentation, American Center for Life Cycle Assessment LCA XVI, September 27-29, 2016, Charleston, South Carolina.

Thiel, C.L., Tighe, J., Baratz, M., Bilec, M.M. (2016). "Medicine and the Environment: Using Environmental Life Cycle Assessment to Inform Changes in Surgical Practices." Presentation, American Center for Life Cycle Assessment LCA XVI, September 27-29, 2016, Charleston, South Carolina.

Rickenbacker, H., Collinge, W.O., Hasik, V., Bilec, M.M. (2016). "Indoor Air Quality Assessments of Diverse Buildings in an Energy Conservation District." Poster, American Center for Life Cycle Assessment LCA XVI, September 27-29, 2016, Charleston, South Carolina.

Antaya-Dancz, C.L., Ketchman, K.J., Burke, R.A., Mahmud, R., Bilec, M.M., Adams, E.A., Parrish, K., Allenby, B., Khanna, V., Landis, A.E. (2016). "Integrating Sustainability Grand Challenges and Experiential Learning into Engineering Curricula: Years 1 through 3." Poster, American Society for Engineering Education, June 26-29, 2016 New Orleans, LA.

Ketchman, K.J., Riley, D., Khanna, V., Bilec, M.M. (2016). "Evaluation of Holistic Energy Assessment Program." Presentation, International Conference on Sustainable Design, Engineering, and Construction, May 18-20, 2016, Tempe, Arizona.

Rickenbacker, H., Collinge, W.O., Hasik, V., Bilec, M.M. (2016). "Indoor Air Quality testing of Diverse Buildings in an Energy Conservation District." Presentation, International Conference on Sustainable Design, Engineering, and Construction, May 18-20, 2016, Tempe, Arizona.

Yang, X., Magalotti, M., Bilec, M.M. (2016). "A Service Life Analysis of Roundabouts Retrofits." Presentation, International Conference on Sustainable Design, Engineering, and Construction, May 18-20, 2016, Tempe, Arizona.

Hasik, V., Chabra, J.P., Warn, G.P., Bilec, M.M. (2016). "Assessing the Life-Cycle Environmental Performance of Building Designs Accounting for Natural Hazards." Presentation, International Conference on Sustainable Design, Engineering, and Construction, May 18-20, 2016, Tempe, Arizona.

Bilec, M.M., Landis, A.E., Parrish, K.P., Antaya-Dancz, C.L., Ketchman, K.J., Burke, R. D. (2016) "Assessment of Sustainability Grand Challenges in Engineering Curricula." Poster, Envisioning the Future of Undergraduate STEM Education: Research and Practice Symposium, April 27-29, 2016, Washington, D.C.

Ketchman, K.J., Khanna, V., Riley, D., Bilec, M.M. (2016). "Improving the Energy Audit: Findings of the NELC Holistic Approach on Real Homes' Energy Consumption." Residential Building Design and Construction Conference. March 3, 2016, Penn State, Pennsylvania.

Dancz, C.L.A., Ketchman, K.J., Bilec, M.M., Adams, E., Allenby, B., Chester, M., Khanna, V., Parrish, K., Seager, T., Landis, A.E. (2016). "Integrating Sustainability into Engineering and Construction Curricula through Modular and Course-based Methods" On Sustainability Conference, Portland, OR, January 21-23, 2016.

DeBlois, J., Collinge, W.O., Bilec, M.M., Schaefer, L.A. (2015). "Calibration and Modeling for a Dashboard that Provides Real-Time Feedback on Energy Saving Strategies." Presentation, Building Simulation Conference 2015, December 12-15, 2015, Hyderabad, India.

Collinge, W.O., Anderson, N.E., Thiel, C.L., Hasik, V., Landis, A.E., Bilec, M.M. (2015). "Dynamic LCA of a Zero Energy and Water Building and Implications at the Community Scale." International Society of Industrial Ecology 2015, July 7- 10, 2015, Surrey, Guilford, United Kingdom.

Antayta, C., Ketchman, K.J., Bilec, M.M., Landis, A.E. (2015). "Redesign of a Sustainability Experiential Learning Module for Transferability and Portability." Presentation, American Society of Engineering Educators, June 14-17, 2015, Seattle, Washington.

Antaya, C.L., Bilec, M.M., Adams, E.A., Chester, M., Parrish, K., Seager, T.P., Landis, A.E. (2015). "Integrating Sustainability Grand Challenges and Experiential Learning into Engineering Curricula: Years 1 and 2." Poster, American Society of Engineering Educators, June 14-17, 2015, Seattle, Washington.

Campion, N.A., Mokashi, M., Wylie, A., Bilec, M.M. (2015). "Integrating Environmental and Cost Assessments for Data Driven Decision-Making: A Roof Retrofit Case Study."

Presentation, International Symposium on Sustainable Systems and Technology, May 18-20, 2015, Dearborn, Michigan.

Al-Ghamdi, S. and Bilec, M.M. (2015). "Whole-Building LCA and Green Building Rating Systems: Exploratory Review of the Available Tools." Presentation, International Symposium on Sustainable Systems and Technology, May 18-20, 2015, Dearborn, Michigan.

Collinge, W.O., Thiel, C.L., Campion, N.A., Al-Ghamdi, S.G., Woloschin, C.L., Soratana, K., Landis, A.E., Bilec, M.M. (2015). "Integrating life cycle assessment with green building and product rating systems: North American perspective." Presentation, International Conference on Sustainable Design, Engineering and Construction, May 10-13, 2015, Chicago, Illinois.

Bilec, M.M., Collinge, W.O. (2015). "Indoor air quality impacts in a regional energy conservation district: Life cycle model and baseline data collection." Presentation, International Conference on Sustainable Design, Engineering and Construction, May 10-13, 2015, Chicago, Illinois.

Bilec, M.M., Collinge, W.O. (2015). "Indoor air quality impacts in a regional energy conservation district: Life cycle model and baseline data collection." Platform Presentation, Society of Environmental Toxicology and Chemistry Europe, May 3-7, 2015, Barcelona, Spain.

Whiston, M., Collinge, W.O., Bilec, M.M., Schaefer, L.A. (2015). "Carbon Dioxide Emissions and Primary Energy Consumption from Operation of a Solid Oxide Fuel Cell Microturbine Systems." Presentation, Engineering Sustainability 2015, April 19-21, 2015, Pittsburgh, Pennsylvania.

Ketchman, K.J., Bilec, M.M. (2015). "Energy Improvements and Small Commercial Buildings: The Overlooked Opportunity." Presentation, Engineering Sustainability 2015, April 19-21, 2015, Pittsburgh, Pennsylvania.

Thiel, C.L., Eckelman, M., Landis, A.E., Sherman, J., Woods, N., Bilec, M.M. (2015). "Life Cycle Assessment in Hospital Operating Rooms: Environmental Impacts from Four Types of Hysterctomy." Poster, Engineering Sustainability 2015, April 19-21, 2015, Pittsburgh, Pennsylvania.

Wu, F., Riley, D., Ketchman, K.J., Bilec, M.M. (2015). "Student Centered Home Energy Engagement Curriculum: the National Energy Leadership Corps (NELC)." Presentation, Engineering Sustainability 2015, April 19-21, 2015, Pittsburgh, Pennsylvania.

Campion, N., Focareta, J., Thiel, C.L., Bilec, M.M. (2015). "An Evidence-Based Design Analysis: Understanding the Benefits of Green Design on a Women's Oncology Unit." Poster, Engineering Sustainability 2015, April 19-21, 2015, Pittsburgh, Pennsylvania.

Bilec, M.M., Lam, K.P. (2015). "BUILD: Barriers, Understanding, Integration – Life-cycle Development Update." EFRI-SEED Workshop, April 10, 2015.

Al-Ghamdi, S. and Bilec, M. (2014). "Green Building Rating Systems and Environmental Impacts of Energy Consumption from an International Perspective." Poster, 2014 International Conference on Sustainable Infrastructure, November 6-8, 2014, Long Beach, California.

Hottle, T.A., Bilec, M.M., Meeks, D.L., Landis, A.E. (2014). "Biopolymer Wastes: Assessing the Shift to Compost-based Waste Management." Presentation, LCA XIV, October 6-9, 2014, San Francisco, California.

Thiel, C.L., Campion, N., Eckelman, M.E., Landis, A.E., Sherman, J., Woods, N.C., Bilec, M.M. (2014). "Integrating Environmentally Preferred Solutions into the Healthcare Industry: A Closer Look at Supply Chain and Anesthetic Gases." Presentation, LCA XIV, October 6-9, 2014, San Francisco, California.

Marks, J., Ketchman, K.J., Riley, D.R., Brown, L.R., Bilec, M.M. (2014). "Understanding the Benefits of the Flipped Classroom in the Context of Sustainable Engineering." Presentation, American Society of Engineering Educators, June 15-18, 2014, Indianapolis, Indiana.

Antaya, C.L., Bilec, M.M., Adams, E.A., Chester, M., Parrish, K., Seager, T.P., Landis, A.E. (2014). "Integrating Sustainability Grand Challenges and Experiential Learning into Engineering Curricula: A TUES2 Collaborative Research Project." Poster, American Society of Engineering Educators, June 15-18, 2014, Indianapolis, Indiana.

Bilec, M.M., Mosse, D., Smith, M.S., Cartier, J.L. (2014). "University of Pittsburgh Developing Highly Qualified Middle Grades Teachers With Expertise in STEM Disciplines via SUSTAINS." Poster, American Society of Engineering Educators, June 15-18, 2014, Indianapolis, Indiana.

Al-Ghamdi, S., and Bilec, M.M. (2014). "Environmental & Economic Impacts of On-site Renewable Energy for Buildings." Presentation, International Symposium on Sustainable Systems and Technology, May 18-21, 2014, Oakland, California.

Collinge, W.O., Thiel, C.L., Campion, N., Landis, A.E., Bilec, M.M. (2014). "Evaluation of Living Building Challenge Using Dynamic LCA." Presentation, International Symposium on Sustainable Systems and Technology, May 18-21, 2014, Oakland, California.

Antaya, C., Bilec, M.M., Adams, E., Landis, A.E. (2014). "Impact on Learning Outcomes Case Study: Introduction to Engineering course exposed to an Active and Experiential Sustainability Learning Module versus Introduction to Engineering Control Group." Presentation, International Symposium on Sustainable Systems and Technology, May 18-21, 2014, Oakland, California.

Campion, N., Copley-Woods, N., Landis, A.E., Swanzy, L., Thiel, C.L., Landis, Bilec, M.M. (2014). "The Life Cycle Environmental Impacts of Disposable Custom Packs." Poster, International Symposium on Sustainable Systems and Technology, May 18-21, 2014, Oakland, California.

DeBlois, J.C., Collinge, W.O., Bilec, M.M., Jones, A.K., Schaefer, L.A. (2014). "Stochastic gains and occupancy studies for modeling a multi-purpose public building. Presentation, ASHRAE Winter Conference, January 18-22, 2014, New York, NY.

Olinzock, M.O., Saunders, C.L., Landis, A.E., Schaefer, L.A., Jones, A.K., Bilec, M.M. (2013). "Understanding the Perception and Use of Whole Building Life Cycle Assessments." Presentation, LCA XIII, September 30-October 3, 2013, Orlando, Florida.

Shen, T., Khanna, V., Landis, A.E., Bilec, M.M. (2013). "Comparison of Life Cycle Impact Assessment Methods: MDI as an Example." Poster, LCA XIII, September 30-October 3, 2013, Orlando, Florida.

Thiel, C., Shrake, S., Woods, N., Landis, A., Bilec, M.M. (2013). "Analyzing surgical techniques using LCA to inform environmentally sustainable changes in hospital operating rooms." International Congress on Sustainability Science and Engineering (ICOSSE), August 11-15, 2013, Cincinnati, Ohio,

Dale, A.T., Bilec, M.M. (2013). "A Model for Assessing Regional Life-Cycle Environmental Impacts of Future Energy and Water Supply Scenarios." Presentation, International Symposium on Sustainable Systems and Technology, May 15-17, 2013, Cincinnati, Ohio.

Saunders, C., Landis, A.E., Schaefer, L.A., Jones, A.K., Bilec, M.M. (2013). "Understanding Energy Models Results in the Context of a Building's Lifetime: Focus on a High Performance Building." Presentation, International Symposium on Sustainable Systems and Technology, May 15-17, 2013, Cincinnati, Ohio.

Olinzock, M., Saunders, C.L., Landis, A.E., Schaefer, L.A., Jones, A.K., Bilec, M.M. (2013). "Results of a National Survey Regarding Whole-Building Life Cycle Assessments Among the Architecture, Engineering, and Construction Community." Presentation, International Symposium on Sustainable Systems and Technology, May 15-17, 2013, Cincinnati, Ohio.

Collinge, W.O., Landis, A.E., Jones, A.K., Schaefer, L.A., Bilec, M.M. (2013). "Synergistic Scenarios for Indoor Health and Productivity in Whole-Building Life Cycle Assessment." Presentation, International Symposium on Sustainable Systems and Technology, May 15-17, 2013, Cincinnati, Ohio.

Ketchman, K., Bilec, M.M. (2013). "Quantification of PM10 from Construction Activities Using a Life Cycle Approach." Poster, International Symposium on Sustainable Systems and Technology, May 15-17, 2013, Cincinnati, Ohio.

Thiel, C.L., Shrake, S.O., Huddleston, M., Landis, A.E., Woods, N., Bilec, M.M. (2013). "Environmental Impacts of Minimally Invasive Surgery." Poster, International Symposium on Sustainable Systems and Technology, May 15-17, 2013, Cincinnati, Ohio.

Woods, N., Bilec, M.M., Landis, A.E., Campion, N., Thiel, C. (2013). Presentation, "Improving Environmental Performance of the Operating Room." CleanMed, April 24-26, 2013, Boston, Massachusetts.

Thiel, C.L., Bilec, M.M., Needy, K.L., Ries, R.J. (2013). "Green Building Design and Construction: Greening the Indoor Environment." Presentation, Engineering Sustainability 2013, April 7-9, 2013, Pittsburgh, Pennsylvania.

Banawi, A.A., Bilec, M.M. (2013). "Applying Lean, Green, and Six- Sigma Framework to Improve Exterior Construction Processes in Saudi-Arabia." Poster, Engineering Sustainability 2013, April 7-9, 2013, Pittsburgh, Pennsylvania.

Collinge, W., A. Landis, A. Jones, L. Schaefer and M. Bilec (2013). Indoor Environmental Quality in a Dynamic Life Cycle Assessment Framework for Buildings: Case Study of the Mascaro Center for Sustainable Innovation. Engineering Sustainability 2013, Pittsburgh, PA, April 2013.

Thiel, C.L., Campion, N., Landis, A.E., Bilec, M.M. (2013). "Net-Zero Energy Building Material Perspective: A Life Cycle Assessment." Poster, Engineering Sustainability 2013, April 7-9, 2013, Pittsburgh, Pennsylvania.

Dale, A.T., Bilec, M.M. (2013). "Rapid Assessment of Environmental Impacts of Regional Energy & Water Supply Scenarios." Poster, Engineering Sustainability 2013, April 7-9, 2013, Pittsburgh, Pennsylvania.

Bilec, M.M., Landis, A.E., Shrake, S.O., Thiel, C.L., Woods, N.C. (2012). "Life Cycle Assessment in Healthcare: Focus on Hysterectomies." Presentation, American Center for Life Cycle Assessment LCA XII, September 27-29, 2012, Tacoma, Washington.

Landis, A.E., Shrake, S.O., Bilec, M.M. (2012). "Life Cycle Assessment to assess and improve small service business operations." Presentation, American Center for Life Cycle Assessment LCA XII, September 27-29, 2012, Tacoma, Washington.

Dale, A.T., Bilec, M.M. (2012). "Using Life-Cycle Data to Assess Regional Variation in Future Energy & Water Supply Scenarios." Presentation, Western Energy Policy Conference. August 30-31, 2012, Boise, Idaho.

Collinge, W.O., Deblois, J., Sweriduk, M., Landis, A.E., Jones, A.K., Schaefer, L.A., Bilec. M.M. (2012). "Measuring Whole-Building Performance with Dynamic Life-Cycle Assessment: A Case Study of a Green University Building." Presentation, International Symposium on LCA and Construction. June 10-12, 2012, Nantes, France.

Bilec, M.M., Dale, A.T., Vidic R.D. (2012). "A Life-Cycle Approach To Environmental Impacts of Marcellus Shale Gas." Presentation, 2012 IEEE International Symposium on Sustainable Systems and Technology. May 16-18, 2012, Boston, Massachusetts.

Collinge, W.O., Landis, A.E., Jones, A.K., Schaefer, L.A., Bilec, M.M. (2012). "Integrating Indoor Environmental Quality Metrics in a Dynamic Life Cycle Assessment Framework For Buildings." Presentation, 2012 IEEE International Symposium on Sustainable Systems and Technology. May 16-18, 2012, Boston, Massachusetts.

Thiel, C.L., Campion, N., DeBlois, J., Woods, N.C., Landis, A.E., Bilec, M.M. (2012). "Life Cycle Assessment of Medical Procedures: Vaginal and Cesarean Section Births." Presentation, 2012 IEEE International Symposium on Sustainable Systems and Technology. May 16-18, 2012, Boston, Massachusetts.

Saunders, C.L., Landis, A.E. Jones, A.K., Schaefer, L.A., Bilec, M.M. (2012). "Utilizing Measured Energy Usage to Analyze Design Phase Energy Models." Presentation, 2012 IEEE International Symposium on Sustainable Systems and Technology. May 16-18, 2012, Boston, Massachusetts.

Aktas, C. and Bilec, M.M. (2012). "Strategies to Reduce Disparity between Design and Service Lifetimes of Building Products." Presentation, 4th International Conference on Sustainable Enterprises of the Future, April 18-19, 2012, Pittsburgh, Pennsylvania.

Kabala, S., Whitney, M., Kviz, B., Bilec, M.M. (2011). "The Pittsburgh Higher Education Climate Consortium: A Partner in Community Climate Action." Presentation, American Association of Sustainability in Higher Education Conference and Expo, October 9-12, 2011, Pittsburgh, Pennsylvania.

Collinge, W.O., Bilec, M.M., Landis, A.E., Jones, A.K., Schaefer, L.A. (2011). "Scenario Modeling for Dynamic Life Cycle Assessment of Commercial and Institutional Building." Presentation, American Center for Life Cycle Assessment, Proceedings of LCA XI, October 4 -6, 2011, Chicago, Illinois.

Shrake, S.O., Landis, A.E., Bilec, M.M. Gomes Da Silva, M. (2011). "The Development and Implementation of Life Cycle Assessment courses in Brazilian Universities." Presentation, American Center for Life Cycle Assessment, Proceedings of LCA XI, October 4 -6, 2011, Chicago, Illinois.

Thiel, C., Shake, S.O., Campion, N., Bilec, M.M., Landis, A.E., Woods, N. (2011). "Applications of Life Cycle Assessment: Sustainable Healthcare." Presentation, American Center for Life Cycle Assessment, Proceedings of LCA XI, October 4 -6, 2011, Chicago, Illinois.

Stamataki, N., Osterwood, K., Bilec, M.M., Landis, A.E. (2011) "Consumers and Composting: Assessing Willingness to Pay for Composting in a Commercial Setting using Contingent Valuation." Presentation, American Center for Life Cycle Assessment, Proceedings of LCA XI, October 4 -6, 2011, Chicago, Illinois.

Bilec, M.M., Hendrickson, C., Landis, A.E., Matthews, H.S. (2011). "Updating the Benchmark Sustainable Engineering Education Report – Trends from 2005 to 2010." Presentation, American Society for Engineering Education Annual Conference and Exposition, June 26 - 29, 2011 Vancouver, BC, Canada.

Landis, A.E., Bilec, M.M., Klotz, L., Pearce, A.R. (2011). "Lessons learned from a Distance Learning Research Methods Course co-taught by Clemson, University of Pittsburgh, and Virginia Tech. Presentation, American Society for Engineering Education Annual Conference and Exposition, June 26 - 29, 2011 Vancouver, BC, Canada.

Aktas, C.B., Bilec, M. (2011). "Addressing Uncertainty Associated with Lifetime in Building LCA." 2011 The Symposium on Industrial Ecology for Young Professionals (SIEYP II). June 11, 2011, Berkeley, California.

Dale, A., Green, O., Shatzer, K., Bilec, M., Brigham, J., Landis, A.E. (2011). "Preliminary Methods in Optimal Design for Minimal Life-Cycle Impacts of Gasoline Blends." Poster, 2011 The Symposium on Industrial Ecology for Young Professionals (SIEYP II). June 11, 2011, Berkeley, California.

Shrake, S., Landis, A.E., Bilec, M.M. (2011). "Greening the Service Industries: A Case Study Hybrid-Based Life Cycle Assessment of a United States Engineering Consulting Firm." Presentation, 6th International Conference on Industrial Ecology, International Society of Industrial Engineering 2011 Conference. June 7-10, 2011, Berkeley, California.

Dale, A., Bilec, M., Vidic, R. (2011). "Discussions on the Environmental Impacts from the Marcellus Shale." Presentation, 6th International Conference on Industrial Ecology, International Society of Industrial Engineering 2011 Conference. June 7-10, 2011, Berkeley, California.

Collinge, W., Bilec, M., Landis, A.E. (2011). "Spatial Distribution of US Industries and Implications for LCA." Presentation, 6th International Conference on Industrial Ecology, International Society of Industrial Engineering 2011 Conference. June 7-10, 2011, Berkeley, California.

Aktas, C.B., Bilec, M. (2011). "Impact of Lifetime Data on Life Cycle Assessment Results: Focus on Residential Buildings and Building Products." Poster, 6th International Conference on Industrial Ecology, International Society of Industrial Engineering 2011 Conference. June 7-10, 2011, Berkeley, California.

Osterwood, K., Stamatakis, N., Bilec, M., Landis, A.E. (2011). "Investigating the Challenges and Potential Solutions for the Implementation of a Compostable Waste Stream for Compostable Biopolymers." Poster, 6th International Conference on Industrial Ecology, International Society of Industrial Engineering 2011 Conference. June 7-10, 2011, Berkeley, California.

Shrake, S., Landis, A.E., Bilec, M.M., (2011). "Greening the Service Industries: A Case Study of the United States Engineering Consulting Firm." Presentation, 2011 IEEE International Symposium on Sustainable Systems and Technology. May 16-18, 2011, Chicago, Illinois. *Received 2nd place award for best student conference paper.*

Collinge,W.O., Liao,L., Xu, H., Saunders, C.L. Bilec, M.M., Landis, A.E., Jones, A.K., Schaefer, L.A. (2011). "Enabling Dynamic Life Cycle Assessment of Buildings with Wireless Sensor Networks" Presentation, 2011 IEEE International Symposium on Sustainable Systems and Technology. May 16-18, 2011, Chicago, Illinois.

Rajagopalan, N., Bilec, M., Landis, A.E. (2011). "Using an LCA Approach to Evaluate Green Labels." Presentation, 2011 IEEE International Symposium on Sustainable Systems and Technology. May 16-18, 2011, Chicago, Illinois.

Thiel, C.L., Campion, N., Bilec, M., Landis, A.E., Copley-Woods, N. (2011). "Use of Life Cycle Assessment in Healthcare: A Preliminary Cesarean Section Case Study." Poster, 2011 IEEE International Symposium on Sustainable Systems and Technology. May 16-18, 2011, Chicago, Illinois.

Thiel, C., Campion, N., Bilec, M., Landis, A.E., Copley-Woods, N. (2011). "Creating Sustainable Surgery: A Trashy Operation." Presentation, CleanMed 2011 Conference. April 6-8, 2011. Phoenix, Arizona.

Aktas, C., Bilec, M. (2011). "Evaluating the Lifetime of Building Products and Life Cycle Assessment Results." Presentation, Engineering Sustainability 2011, April 10-12, 2011, Pittsburgh, Pennsylvania.

Collinge, W.C., Saunders, C., Bilec, M., Landis, A.E., Jones, A. (2011). "Framework and Data Acquisition for an Automated, Dynamic Building Life Cycle Assessment." Poster presentation, Engineering Sustainability 2011, April 10-12, 2011, Pittsburgh, Pennsylvania.

Dale, A., Bilec, M., Vidic, R.D. (2011). "Preliminary Life Cycle Impacts of Treatment of Marcellus Shale Waters." Poster Presentation, Engineering Sustainability 2011, April 10-12, 2011, Pittsburgh, Pennsylvania.

Rajagopalan, N., Bilec, M.M., Landis, A.E. (2011). "Evaluation of Green Product Labeling Systems with Life Cycle Assessment." Poster Presentation, Engineering Sustainability 2011, April 10-12, 2011, Pittsburgh, Pennsylvania.

Thiel, C., Campion, N., Bilec, M.M., Landis, A.E., Copley-Woods, N. (2011). "Sustainable Healthcare: Environmental Improvements for the Operating Room through Life Cycle Assessment of Birthing Kits." Poster, Engineering Sustainability 2011, April 10-12, 2011, Pittsburgh, Pennsylvania.

Thiel, C., Bilec, M., Landis, A. (2011). "Net-Zero Energy Building: A Materials Life Cycle Assessment." Poster Presentation. NSF CMMI Research and Innovation Conference, January 4-7, 2011, Atlanta, GA.

Rajagopalan, N., Bilec, M.M., Landis, A.E. (2010). "Green Product Labeling: Is Life Cycle Assessment a Viable Solution?" Presentation, Life Cycle Assessment X, November 2-4, 2010, Portland, Oregon.

Aktas, C., Bilec, M.M. (2010). "Impact of Product Lifetime on Life Cycle Assessment Results." Presentation, Life Cycle Assessment X, November 2-4, 2010, Portland, Oregon.

Dale, A., Bilec, M.M., (2010). "Life Cycle Environmental Impacts of a LEED Platinum House in New Orleans." Poster, Life Cycle Assessment X, November 2-4, 2010, Portland, Oregon.

Thiel, C., Bilec, M.M., Landis, A.E. (2010). "Life Cycle Assessment of Net-Zero Energy Building: Focus on Materials." Poster, Life Cycle Assessment X, November 2-4, 2010, Portland, Oregon.

Xue, X., Collinge, W., Landis, A.E., Bilec, M.M., Shrake, S. (2010). "Regional Life Cycle Assessment of Soybean Derived Biodiesel for Transportation Fleet." Poster, Life Cycle Assessment X, November 2-4, 2010, Portland, Oregon.

Collinge, W., Bilec, M.M., Landis, A.E. (2010). "Regional LCA Profiles for US Industries." Poster, Life Cycle Assessment X, November 2-4, 2010, Portland, Oregon.

Aktas, C., Bilec, M.M. (2010). "Collaboration among higher education institutions for increased sustainability in Pittsburgh." Presentation, Association for the Advancement for the Advancement of Sustainability in Higher Education. October 10 – 12, 2010, Denver, Colorado.

Bilec, M.M., Aktas, C. Marriott, J., Padilla, F., Snyder, M. (2010). "Market and Environmental Analyses of Key Construction Commodities." Proceedings of the Western Pennsylvania Transportation Research Forum of the International Bridge Conference, June 2010, Pittsburgh, Pennsylvania.

Collinge, W., Bilec, M.M, Landis, A.E., Shrake, S., Xiaobo, X. (2010). "Biodiesel Fuel Feasibility Study." Proceedings of the Western Pennsylvania Transportation Research Forum of the International Bridge Conference, June 2010, Pittsburgh, Pennsylvania.

Aktas, C.B., Bilec, M.M., Marriott, J., Landis, A.E., Mutnuri, B. (2010). "Life Cycle Energy Consumption of Pultruded Flax Fiber Composites." Poster, Proceedings of the 2010 IEEE International Symposium on Sustainable Systems and Technology. May 17-19, 2010, Washington, DC. *Received award for poster competition.*

Aktas, C.B., Bilec, M. (2010). "Greenhouse Gas Inventory for the University of Pittsburgh." Presentation, Blue, Gold, and Green Sustainability Festival. April 8-9, 2010, Pittsburgh, Pennsylvania.

Allen-Sandoz, M., Bilec, M. (2010). "Kingsley Repurposing Station Design." Presentation, Blue, Gold, and Green Sustainability Festival. April 8-9, 2010, Pittsburgh, Pennsylvania.

Landis, A.E., Bilec, M.M., Rajagopalan, N.R. (2009). "Life Cycle Assessment for Evaluating Green Products and Materials." Presentation, US-Japan Workshop on Life Cycle Assessment of Sustainable Infrastructure Materials, October 21-22, 2009, Sapporo, Japan.

Rajagopalan, N.R., Bilec, M., Landis, A.E. (2009). "A Comparative Life Cycle Assessment of Insulating Concrete Forms with Traditional Residential Wall Sections." Presentation, Life Cycle Assessment IX, September 28 – Oct 2, 2009, Boston, Massachusetts.

Bilec, M.M., Rajagopalan, N.R., Landis, A.E. (2009). "Building Product Labeling: A Comparative Case Study of Insulating Concrete Form versus Traditional Building Materials." Presentation, First International Congress on Sustainability and Science and Engineering, August 10 – 13, 2009, Cincinnati, Ohio.

Torick, D., Bilec, M.M., Marriott, J., and Landis, A.E. (2009). "Development and Outcomes of a Design for the Environment Course." Presentation, 116th American Society for Engineering Education Annual Conference and Exposition. June 16, 2009, Austin, Texas.

Rajagopalan, N., Landis, A.E., Bilec, M.M. (2009). "Environmental Impacts of Insulating Concrete Forms." Presentation, 2009 IEEE International Symposium on Sustainable Systems and Technology. June 2009, Phoenix, Arizona.

Landis, A.E., Bilec, M., Shrake, S., Collinge, W. (2009). "PennDOT Biodiesel Fuel Implementation Study." Proceedings of the Western Pennsylvania Transportation Research Forum of the International Bridge Conference, June 2009, Pittsburgh, Pennsylvania.

Padilla, M.F., Marriott, J., Bilec, M.M. (2009). "Market Analysis of Construction Materials with Recommendations for the Future of the Industry." Proceedings of the Western Pennsylvania Transportation Research Forum of the International Bridge Conference, June 2009, Pittsburgh, Pennsylvania.

Rajagopalan, N.R., Bilec, M., Landis, A.E. (2009). "Preliminary Life Cycle Assessment of Residential Homes: Focus on Insulating Concrete Forms with Traditional Residential Wall Sections." Presentation, Engineering Sustainability 2009: Innovations that Span Borders, April 2009, Pittsburgh, Pennsylvania.

Padilla, M.F., Marriott, J., Bilec, M. (2009). "Economic Forecasts and Environmental Impacts of Highway Construction Commodities." Presentation, Engineering Sustainability 2009: Innovations that Span Borders, April 2009, Pittsburgh, Pennsylvania.

Shrake, S.O., Landis, A.E., Bilec, M.M. (2009). "Impacts Associated with Biodiesel Use in Fleets." Poster Presentation, Engineering Sustainability 2009: Innovations that Span Borders, April 2009, Pittsburgh, Pennsylvania.

Torick, D., Bilec, M., Landis, A.E., Marriott, J. (2009). "Engineering students learn and apply the triple bottom line through a multi-faceted educational experience: Design for the Environment Course." Poster Presentation, Engineering Sustainability 2009: Innovations that Span Borders, April 2009, Pittsburgh, Pennsylvania.

Landis, A.E., Bilec, M., Shrake, S., Collinge, W. (2008). "Biodiesel Impacts During Fleet Implementation." Presentation, LCA8, September 2008, Seattle, Washington.

Rajagopalan, N., Bilec, M., Landis, A.E. (2008). "Preliminary Life Cycle Assessment of Wall Sections: Focus on Insulating Concrete Forms with Traditional Wall Sections." Poster Presentation, Pennsylvania Green Growth Partnership, September 15-16, 2008, Hershey, PA.

Landis, A.E. and Bilec, M.M. (2008). "Analysis, Heuristics, and Uncertainty of Hybrid Life Cycle Assessment: Agriculture and Construction Case Studies." Presentation, First International Symposium on Life-Cycle Engineering, June 11-14, 2008, Lake Como, Italy.

Landis, A.E., Bilec, M., Shrake, S., Collinge, W. (2008). "PennDOT District 8 Biodiesel Fuel Feasibility Study." Proceedings of the Western Pennsylvania Transportation Research Forum of the International Bridge Conference, June 2008, Pittsburgh, Pennsylvania.

Needy, K., Gokham, N.M., Bilec, M.M., Ries, R., Horman, M., Phelps, A., Pommer, E.E. (2008). "The Use of Process Mapping to Compare Green Children's Hospital Designs." Industrial Engineering Research Conference. May 19-23, 2008, Nashville, Tennessee. May 2008, Vancouver, B.C.

Needy, K. L., Gokhan, N. M., Ries, R., and Bilec M.M. (2007). "Green Building Metrics: Research Methodology, Results, and Future Directions." Presentation, Industrial Engineering Research Conference. May 19-23, 2007, Nashville, Tennessee.

Bilec, M.M. and Ries, R. (2007). "Preliminary Study of Green Design and Project Delivery Methods in the Public Sector." Presentation, 2007 ASCE Construction Research Congress Proceedings, May 6-8, 2007, Grand Bahamas Island.

Ries, R., Bilec M.M., Needy, K. L., and Gokhan, N. M. (2007). "Green Building Construction: Cost/Benefit Analysis of a Precast Concrete Manufacturing Plant." Presentation, 2007 ASCE Construction Research Congress Proceedings, May 6-8, 2007, Grand Bahamas Island – *Received Best Paper Award*

Sharrard, A.L., Nikithser, A., Matthews, H.S., Bilec, M.M. (2007). "The Challenge of Correlating Local Air Monitor Data with Construction Site Activity: A Pittsburgh Case Study." Presentation, 2007 ASCE Construction Research Congress Proceedings, May 6-8, 2007, Grand Bahamas Island.

Needy, K.L., Ries, R., Gokhan, N.M., Bilec, M. (2007). "The Economic Benefits of Green Buildings: A Comprehensive Case Study." Presentation, Engineering Sustainability Conference, April 2007, Pittsburgh, Pennsylvania.

Needy, K.L., Ries, R., Horman, M., Riley, D., Gokhan, N.M., Bilec, M., Phelps, A.F., Manning, R., Pommer, E.E. (2007). "High Performance Healthcare Facility Lessons for Designing Green Children's Hospitals." Poster Session, Engineering Sustainability Conference, April 2007, Pittsburgh, Pennsylvania.

Bilec, M., Sharrard, A.L., Matthews, H.S., Ries, R. (2006) "Two Hybrid Life Cycle Assessments for Construction." Presentation, InLCA Conference, October 2006, Washington, D.C.

Bilec, M., Sharrard, A.L., Matthews, H.S., Ries, R. (2006)."A Hybrid Life Cycle Assessment for Construction Processes." Presentation, United States Green Building Conference, Greenbuild, November 2005, Atlanta, Georgia.

Bilec, M., Sharrard, A., Ries, R ., Matthews, H.S. (2005)."A Hybrid Life Cycle Assessment for Construction Processes." Presentation, Society of Environmental Toxicology and Chemistry Conference, November 2005, Baltimore, Maryland.

Bilec, M., Sharrard, A.L., Ries, R., and Matthews, H.S. (2005). "A Hybrid Life Cycle Discussion of Environmental Impacts of the Construction Process." Poster Session, International Society of Industrial Ecology Conference, July 2005, Stockholm, Sweden.

Needy, K.L., Ries, R., Gokhan, N.M., Bilec, M.M., Rettura, B. (2005). "A Research Protocol for Analyzing the Benefits of Green Building Construction." Industrial Engineering Research Congress Proceedings, May, 2005, Atlanta, Georgia.

Matthews, H. S., Roth, M., Sharrard, A.L., Bilec, M.M. (2005). "Economic and Environmental Implications of Construction Energy Use and Generation under New EPA Emission Standards." ASCE 2005 Construction Research Congress Proceedings, April 2005, San Diego, California.

Sharrard, A.L., Bilec, M., Roth, M., Matthews, H.S., and Ries, R.(2005). "Economic and Environmental Impacts of Construction Sites: On-Site Energy and Electricity Consumption." Poster Session, Engineering Sustainability 2005, April 10 – 12, 2005, Pittsburgh, Pennsylvania.

Bilec, M., Sharrard, A., Ries, R., and Matthews, H.S. (2005). "A Hybrid Life Cycle Discussion of Environmental Impacts of the Construction Process." Presentation, Engineering Sustainability 2005, April 10 – 12, 2005, Pittsburgh, Pennsylvania.

Ries, R., Needy, K.L., Bilec, M., Gokhan, N.M., Rettura, B. (2005). "Benefits of Green Construction." Poster Session, Engineering Sustainability 2005, April 10 – 12, 2005, Pittsburgh, Pennsylvania.

Ries, R., Needy, K.L., Bilec, M., Gokhan, N.M., Rettura, B.(2004). "Creating a Framework to Examine Benefits of Green Building Features." Poster Session, Greenbuild Conference, November 2004, Portland, Oregon.

Needy, K.L., Ries, R., Gokhan, N.M., Bilec, M.M., and Rettura, B. (2004). "Creating a Framework to Examine Benefits of Green Building Construction." Proceedings of American Society for Engineering Management, 25th National Conference, October 20-23, 2004, Alexandria, Virginia.

FUNDED RESEARCH

Current

National Science Foundation, *Supplement* EFRI-SEED: BUILD - Barriers, Understanding, Integration - Life Cycle Development
Total Award: $52,981
PI: Melissa Bilec
May 2016 to October 2017

National Science Foundation, *Collaborative Research: Developing a Framework to better engage students in STEM via Game Design*
Total Award $220,299
PI, Kristen Parrish; ASU, Co-PI, Amy Landis, Clemson
Total award at ASU: $176,183
PI from UPitt, **Melissa Bilec**
Total award at UPitt: $44,116
October 2015 to September 2017

Heinz Foundation, *Creating Environmental Awareness in an At-Risk Community through Real Time Air Monitors and a Resident Driven Air Quality Monitoring Bike Campaign*
Total Award $25,000
PI: Melissa Bilec
October 2015 to September 2018

National Science Foundation, *Collaborative Research RSB: A Sequential Decision Framework to Support Trade Space Exploration of Multi-Hazard Resilient and Sustainable Building Designs*
Total Award $1,260,000
PI, Gordon Warn; PSU, Co-PI, Lisa Iulo, PSU; Timothy Simpson, PSU
Total award at ASU: $849,189
PI from UPitt, **Melissa Bilec ($202,005);** Co-PI, Louise Comfort, UPitt
Total award at UPitt: $410,811
March 1, 2015 to February 28, 2018

Magee Volunteer Group (gift)
Total Award: $6,000
PI Melissa Bilec ($6,000)

National Science Foundation, *Collaborative Research: Integrating Sustainability Grand Challenges and Systems Thinking into Engineering Curriculum.*
Total award: $750,000
PI, Amy Landis, ASU; Co-PI, Brad Allenby, ASU; Co-PI, Mikhail Chester, ASU; Co-PI, Kristen Parrish, ASU
Total award at ASU: $535,005
PI at Pitt, Melissa Bilec ($105,000); Co-PI, Vikas Khanna, UPitt
Total award at UPitt: $214,995
September 1, 2013 to August 31, 2017

Completed
National Science Foundation, *EFRI-SEED: BUILD - Barriers, Understanding, Integration - Life cycle Development.*
Total award: $2,000,000
PI, Melissa Bilec ($1,030,000); Co-PI, Laura Schaefer, UPitt; Co-PI, Alex Jones, UPitt; Co-PI, Amy Landis (transferred ~$65,000) to ASU.
Total award at UPitt: $1,569,771
Co-PI, Steve Lee, CMU; Co-PI, Khee Poh Lam
Total award at CMU: $430,229
August 2010 to August 2016

Mascaro Center for Sustainable Innovation, University of Pittsburgh, *Indoor Air Impacts and Pittsburgh's 2030 Energy District*
Total Award: $50,0000
PI, Melissa Bilec ($50,000); Co-PI, Bill Collinge
July 2015 to June 2016

Facility Management and Mascaro Center for Sustainable Innovation, University of Pittsburgh, *Greenhouse Gas Inventory*
Total Award: $17,000
PI, Melissa Bilec ($17,000)
May 2014 to April 2016

Mascaro Center for Sustainable Innovation, University of Pittsburgh, *"Indoor Air Impacts in an Energy Conservation District – Pilot Study"*
Total Award: $25,0000
PI, Melissa Bilec ($25,000)
January 2015 to June 2015

Department of Energy, *Energy Efficient Building Hub – Life Cycle Assessment modeling subtasks.*
Total Award: $103,485
PI from UPitt, Melissa Bilec ($103,485)
February 2013 to January 2014

National Science Foundation, *Developing Highly Qualified Middle Grades Teachers with Expertise in STEM Discipline.*
Total award all at UPitt: $300,000.
PI, Jen Cartier, UPitt School of Education; **Co-PI, Melissa Bilec ($19,734),** Co-PI, Mark Collins, UPitt Environmental Studies; Co-PI, Danielle Mosse, UPitt, Computer Science Department; Co-PI, Margaret Smith, UPitt, School of Education.
September 1, 2012 to August 31, 2014

National Science Foundation, *Evaluating Sustainable Disposal Options for Compostable Biopolymers.*
Total award: $300,000 (transfer from UPitt to ASU due to Amy Landis move)
PI, Amy Landis, ASU
Total award transferred to ASU: $274,454
PI at UPitt, Melissa Bilec ($25,546) (subcontracts with ASU are on annual basis due to NSF funding allocation for this grant, increase expected).
August 2011 to August 2014

Mascaro Center for Sustainable Innovation, *Energy Models on Campus.*
Total Award: $21,150
PI, Melissa Bilec ($21,150)
May 2013 to April 2014

Department of Energy, *Greater Philadelphia Innovation Cluster – Life Cycle Assessment modeling subtasks.*
Total award was distributed through UPitt with Laura Schaefer as Pitt PI.
Co-PI at UPitt, Melissa Bilec ($35,000)
January 2012 to February 2013

National Institute of Health, Clinical and Translational Science Institute, Engineering to Clinical Collaborative Research Pilot Program, *Transforming Healthcare with an Environmental Life Cycle Perspective.*
Total award at UPitt: $25,000
PI from clinician-side, Noe Copley Woods ($7,448)
PI from engineering, Melissa Bilec ($17,552); Co-PI, Amy Landis; Co-PI, Richard Guido, UPMC/UPITT OBGYN.
July 1, 2011 to June 30, 2012

National Science Foundation, *International Research Experience for Students: An Integrative Undergraduate Research Experience* with Brazil research experience.
Total award at UPitt: $149,658 (100% to students)
PI, Larry Shuman; **Co-PI, Melissa Bilec;** Co-PI, Eric Beckman; Co-PI, Kent Harries; Co-PI, Laura Schaefer.
September 10, 2010 to September 9, 2013

National Science Foundation, *CCLI Type 1: Integrating Sustainability into the Civil Engineering Curriculum Through Three Courses*
Total award: $199,982 (transfer from UPitt to ASU due to Amy Landis move)
PI, Amy Landis, ASU; **Co-PI, Melissa Bilec ($50,000);** Co-PI, Piero Rizzo, UPitt
June 30, 2010 to June 29, 2013

Mascaro Center for Sustainable Innovation, *Dynamic Life Cycle Assessment and Building Automation.*
Total award at UPitt: $133,508
PI, Melissa Bilec ($44,502); Co-PI, Amy Landis; Co-PI, Alex Jones
July 1, 2010 to June 30, 2012

Mascaro Center for Sustainable Innovation, *Greenhouse Gas Inventory for the University of Pittsburgh*
Total award at UPitt: $17,000
PI, Melissa Bilec ($17,000)
September 2009 to July 1 2010

University of Pittsburgh Innovation in Educational Excellence Award, *Enhancing Cross-cutting Sustainability Education in Civil Engineering.*
Total Award at UPitt: $25,000
PI, Amy Landis; **Co-PI, Melisa Bilec ($8,333);** Co-PI, Piero Rizzo
July 2009 to June 2010

Green Building Alliance, *Pultruded Green Composites.*
Total Award: $100,000
PI from Bedford Plastics, Bhyrav Mutnuri
Total Award Bedford Plastics: $68,500
PI from UPitt, transfer, Melisa Bilec ($31,500); Co-PI, Joe Marriott; Co-PI, Kent Harries
Total Award at UPtt: $31,500
January 2009 to January 2010

Green Building Alliance, *Investigating the Environmental Life-Cycle Assessment, Performance, and Life-Cycle Costing of Expanded Polystyrene for Construction Materials and Supplies: Focus on Insulating Concrete Forms.*
Total Award at UPitt: $220,000 with cost share, $120,000 without cost share
PI, Melisa Bilec ($45,000); Co-PI, Amy Landis; Co-PI, Kim Needy
January 2008 to December 2009

Pennsylvania Department of Transportation, *Biodiesel Implementation.*

Total Award at UPitt: $275,761
PI, Amy Landis; **Co-PI, Melisa Bilec ($137,880)**
June 2008 to May 2010

Pennsylvania Department of Transportation, *Market Analysis of Construction Materials with Recommendations for the Future of the Industry.*
Total Award at UPitt: $170,924
PI, Melissa Bilec ($85,462); Co-PI, Joe Marriott
July 2008 to January 2010

National Collegiate Inventors and Innovators Alliance, *Curriculum Development: Beyond Design for the Environment – Improving Products, Processes, and Actions.*
Total Award at UPitt: $36,130
PI, Amy Landis; **Co-PI, Melisa Bilec ($12,000);** Co-PI, Joe Marriott
July 2008 to June 2011

Mascaro Center for Sustainable Innovation, *Developing a Portable Model for Hands-On Learning in Sustainability* (transfer)
$50,000, Spring 2008 to Fall 2008

TEACHING EXPERIENCE

Developed five new courses and curriculum.
Taught synchronous distance learning classes for CEE 1218 (2012 and 2013), CEE 2203, and CEE 3218.

CEE 1218/2218: Design for the Environment: Spring 2009 to 2015, enrollment 20 to 30
Developed new course that was funded by the NCIIA for three years to teach concepts of Design for Environment to both undergraduate and graduate students. The course is a project-based course where students develop innovative sustainable solutions with partners. Co-taught with Drs. Marriott (2009) and Landis (2009-2011). The last two years (2012 and 2013), this course focused on residential energy assessments and leadership. The flipped classroom method was used in 2013. Students completed the assessments in low-income communities.
Recent student quote from flipped classroom: "I think this class is phenomenal…None of Dr. Bilec's classes are the typical 'I'm going to stand in front of the class teach you this you're going to regurgitate something for homework and then we're going to move on.' They are all very progressive and the amount of inclusion that is expected of all the students is very good. The more the students are expected and welcome to be involved with the class the more they will be involved with the class. I learn more this way. Excellent class."

CEE 1610/2610 (previously 1210/2210): Engineering and Sustainable Development: Fall 2010-2015, Spring 2017 enrollment 50-70
Redesigned course teaching concepts of sustainable engineering and industrial ecology. This course uses a mix of innovative teaching approaches, including project-based learning. The general modular framework is (1) a mix of lecture, reading and videos; (2) experiment, game, in-class assignment; (3) in-class debate and writing assignment.

CEE 1617/2217 (previously 12107/2217): Green Building Design and Construction: Spring 2008-2016, enrollment 55-70

Developed new course with modules supported by NSF CCLI project. This course teaches all of the major aspects of green building design and construction, including sustainable sites, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality, innovation, and design process. Understanding the entire life cycle of green buildings is a crucial element in green and sustainable engineering.

CEE 2620: Advanced Green Building Design and Construction: Spring 2016, Fall 2016 enrollment 6-10

This course first provides an overview of all the major aspects of green building design and construction, including sustainable sites, water efficiency, energy and atmosphere, materials and recourses, indoor environmental quality, innovation and the design process. The course then focuses on green materials, energy modeling, indoor environmental quality monitoring, and post-occupancy evaluations. For the delivery of this course, we use a combination of seminars, experiential learning, and green building tours.

CEE 3218: Research Methods for Sustainability: Fall 2010, enrollment ~15

Developed new course to teach basic concepts in research methods for graduate students. Co-taught with Dr. Landis (2010), and included distance learning with Clemson and Virginia Tech.

CEE 3609: Advance Life Cycle Assessment: Spring 2016, enrollment 9

Life cycle assessment (LCA) is a tool for evaluating the environmental impacts of a product or process by documenting energy and material flows from inception to ultimate disposal. Topics include the principles of life cycle assessment, case studies of applications of life cycle assessment, methods for life cycle inventory, and methods for life cycle impact assessment. The course aims to encourage systems thinking and to facilitate life cycle applications to graduate students' individual research topics. Students can expect to develop a project and paper applying LCA to their research topic. In most cases, students will produce a publishable journal article at the end of the semester.

Additional courses taught

- CEE 2201: Construction Cost Estimating
    - Fall 2008, Fall 2009 (with distance learning section)
- ENGR, Engineering Sustainability Capstone (Fall 2011) for IGERT students
- ENGR 1610: Product Realization for Global Opportunities with *travel to Brazil* (Spring 2008)
- Lecturer, University of Pittsburgh's Learning Solutions, College of General Studies, Osher's Life Long Learning Institute for Introduction to Green and Sustainable Building Design class

STUDENT ADVISING

Doctoral Students

Completed

1. Neethi Rajagopalan, Graduated Spring 2011 (Researcher, North Carolina State University)
2. Can Aktas, Graduated Spring 2011 (Assistant Professor University of New Haven)
3. William Collinge, Graduated Spring 2013 (Post-Doc at Upitt, Consultant for PPG)

4. Alexander Dale, Graduated, Spring 2013 (National Executive Director, Engineers for a Sustainable World, AAAS Fellow, Community Relations Senior Officer, Solve @ MIT)
5. Abdulaziz Banawi, Graduated May 2013, (Faculty position at UAE, Department Chair at King Abdulaziz University, Jeddah, Saudi Arabi)
6. Cassandra Thiel, Graduated August 2013 (Post-Doc at Upitt, Fulbright Scholar, Assistant Professor at New York University)
7. Nicole Campion, Graduated May 2015 (Associate engineer, Delaware River Port Authority)
8. Sami Al Ghamdi, Graduated December 2016 (Assistant Professor of Architectural Engineering, HBKA)

Current

1. Kevin Ketchman Expected graduation – Spring 2017
2. H. Rickenbacker Expected graduation – Spring 2018
3. Vaclav Hasik Expected graduation – Spring 2018
4. Shen Tian Expected graduation – Spring 2017

Post-Doctoral Associates

William Collinge, May 2013 to June 2017
Cassandra Thiel, August 2013 to December 2014; September 2015 to August 2016
Michael Whiston, January 2016 to May 2016

Visiting Professors

Lan Chen, 2014-2015
H. Scott Matthews, CMU, 2013 to 2014

Masters Students

1. Christi Saunders, Graduated April 2012, Thesis option
2. Katelyn Ryan, Graduated April 2012, MS/MBA
3. Nicole Campion, MS, Graduated August 2011, professional option
4. Maureen Olinzock, Graduated, December 2013, professional option

Visiting Scholar

Ariana Leidy – Spring 2012

Undergraduate Students

1. Kyra Davis (2008)
2. Matt Kaminski (2009)
3. Abigayle Sterle (2009)
4. Kate Kessler (2009)
5. Matthew Geary (2009)
6. Cassie Jurgens (2009, 2012)
7. Eric Zatcoff (2009)
8. Douglas Hartley (2009)
9. Eric Rowand (2009)
10. Brad Harken (2009)
11. Jonathan Bumstead (2009)
12. Maddie Allen-Sandoz (2010)
13. Oliver Green (2010)
14. Kyle Shatzer (2010)
15. Nicholas Stamatkis (2010)
16. Nicole Ostrowski (2010)
17. Katelyn Ryan (2010)
18. Michael Sweriduk (2010-11)
19. Ryan Carmichael (2010)
20. Jennifer Zettl (2011)
21. Preston Macready (2011)
22. Oren Lawitt (2011)
23. Marianne Choi (2011)
24. Ahra Kwan (2011)
25. Charles Ringel (2011)
26. Sarah Wood (2012)
27. Matt Huddleston (2012,13)
28. Jayne Marks (2013)
29. Corey Woloschin (2013)
30. Ben Kueth (2013)

31. Yuan Tao (2013)
32. Allan Smith (2013)
33. Delia Scoville (2014)
34. Hannah Edelmann (2014)
35. Naomi Anderson (2014, 2015)
36. Brent Oliveros (2014)
37. Adam Bertonaschi (2014)
38. Rafaela Carvalho (2016)
39. Rebeca Nogueira (2016)
40. Kim Dinh (2016)
41. Abra Spisso (2016, 2017)
42. Julissa Garcia (2017)
43. Elyssa Messzar (2107)

STUDENT COMMITTEES

Doctoral Committees:

Completed

Xiaobo Xu, CEE, April 2011
Kullapa Soratana, CEE, 2012
Jarret Kasan, CEE, 2012
Scott Shrake, CEE, 2012
Briana Niblick, CEE, 2012
Michelle Najera, ChemE, 2013
Michael Richard, CEE, 2013
Justin Deblois, MEMS, 2013
Antti Säynäjoki, Aalto Univ, April 2015
Michael Whiston, MEMS, May 2015
Haifeng Xu, ECE, May 2015
Shauhrat Chopra, CEE, May 2015
Claire Antaya, ASU SEBE, May 2015
Troy Hottle, ASU SEBE, Dec. 2015
Scott Unger, ASU SEBE, Dec. 2015
Kaiyuan Li, CEE, 2016
Greg Zaimes, CEE, 2016

In progress

Jorge Vendries, CEE, expected graduation, 2017
Sakineh Tavoli, CEE, expected graduation 2018

Masters Committees:

Viral Shah, CEE, graduated, 2007
Phoebe Cuevas, CEE, graduated, 2010
Monica Rothermel, CEE, graduated, 2011
Haifeng Xu, ECE, graduated, 2012
Jennifer Gottron, CEE, graduated, December 2013
Michelle Basque, GSPH, graduated, April 2014

BPhil Committees:

Lin Huo, Spring 2017

AWARDS AND HONORS

Invited to serve as Member of International Expert Selection Committee - Target GHG Collaborative R&D Program, Natural Sciences and Engineering Research Council of Canada / Ontario Centres of Excellence, Start April 2017

White House Frontiers Conference, Local Track Lead, October 13, 2016

Invited to attend the National Academy of Engineers Grand Challenge Scholar Summit at the White House, Washington, DC, October 7, 2017

Roberta A. Luxbacher Faculty Fellow

Best Mentor- Mentee Team Award (3rd place), Mentor AGEP-TDAE, August 2016

Outstanding Mentor Award, University of Pittsburgh Postdoctoral Association Award, 2016

Invitation from National Academy of Engineers to present at Frontiers of Engineering Education Symposium, *Writing Successful NSF Proposals.* October 29, 2014, Irvine, California.

Carnegie Science Award in the University/Post-Secondary Category, Winner, 2012

National Academy of Engineering: Nominated and selected to attend Frontiers of Engineering Education Symposium in Irvine CA (2011)

Carnegie Science Award in the University/Post-Secondary Category, Honorable Mention, 2011

Lisa Weiland and Melissa Bilec: Upon completion of the "JC Penny" project in Vandergrift it received a "Top Ten Preservation Opportunities Award"for 2010 from the Young Preservationist Association of Pittsburgh (YPA), and was selected as a feature project by ESW national - 2010

Innovation in Educational Excellence Award, University of Pittsburgh (2009)

Best Conference Paper in Sustainability Track. Ries, R., Bilec M., Needy, K. L., and Gokhan, N. M. (2007). "Green Building Construction: Cost/Benefit Analysis of a Precast Concrete Manufacturing Plant." 2007 ASCE Construction Research Congress Proceedings, May 6-8, 2007, Grand Bahamas Island – *Received Best Paper Award*

Performance Award Urban Redevelopment Authority of Pittsburgh (2000 and 2001)

Teaching Assistant of the Year, University of Pittsburgh, 1999

President's Scholarship (1998)

Honors Scholarship (1998)

Tau Beta Pi, Chi Epsilon

SERVICE

Deputy Director, Mascaro Center for Sustainable Innovation, 2015 to Present

-Co-PI in MCSI's NSF NRT proposal in 2017.

-Local Track Lead for White House Frontiers Conference, October 13, 2016.

-Primary lead of P4 Air Measure, convened by the Heinz Foundation, Summer 2016

-Attended Grand Challenge Scholar Program (GCSP) at the National Academy of Engineers and the White House in October 2016. Working to develop GCSP at UPitt.

-Co-PI 2016 NSF National Research Traineeship Program, MEntoring through understanding Nitrogen in Urban food system (MENU)

-2014 to 2017, Leading efforts to create an M.S. degree in Sustainability – M.S. Degree in Sustainable Engineering approved in January 2017.

Assistant Director, Education and Outreach, Mascaro Center for Sustainable Innovation, 2007 to 2014

Since 2007, my work with MCSI has evolved as my research enterprise became more prolific. During my tenure at MCSI, major contributions included:

-Coordinated/managed MCSI's Summer Undergraduate Research Program in 2008, 2009, and 2010, including NSF REU site and NSF IRES program. This work included recruitment, application review and acceptance, housing coordination, summer long lecture series, service activities, and book clubs. This also included organizing international travel, Portuguese language training, Brazilian culture training, and research experiences for the IRES program.

-Related to Pitt's first NSF IGERT and GAANN programs from 2007 to ~2011, recruited students, developed international travel coordination (met bi-weekly with students prior to cohort departure), application review, strategic planning meetings, coordinated required classes, budget reviews, annual and NSF and DOE reports.

-Related to Pitt's FIPSE-CAPES, worked closely with both Brazilian students at Pitt (meeting weekly) and with Pitt students traveling to Brazil (meeting monthly) to ensure assimilation and educational requirements.

-Engineering for Humanity Certificate

-Revision to the Sustainable Engineering Certificate

-Worked on many collaborative MCSI proposals including:

2009 ERC proposal, **IN**novating **S**ustainable **P**ractices through **I**nter-disciplinary **R**esearch and **E**ducation: INSPIRE;
2010 Doris Duke, Dynamic LCA;
2010 IGERT, Sustainable Community Oriented Research & Education (SCORE;
2010, 2011, 2012 REU site proposals;
2011 RET proposal;
2011 SRN, Sustainable Consumer Innovations Network (SCINet)
2011 SRN proposal with ASU, A Collaborative Open Innovation Network (COIN) for Sustainable, Healthy Buildings;
2013 Drk12 proposal;
2014 NSF Sustainable Research Network, Re-envisioning Urban Sustainability and Health (RUSH);

<u>Outreach/co-curricular activities to support MCSI's overall outreach work:</u>

-Teach the Teacher Workshop, June 2016, Presented lecture

-Teach the Teacher Workshop, June 2015, Assisted in organizing and presented lecture

-Teach the Teacher Workshop, June 2014, Assisted in organizing and presented lecture

-Green building and indoor environmental quality learning module, Crossroads Foundation and UPitt CS department, July 30, 2013.

-Worked with Rebuilding Together Pittsburgh, Penn State Center, Kingsley Association. Completed energy retrofits (1 per month in 2012-2013) in low-income homes – outcome from student energy assessments developed in CEE1218/2218, Spring 2012.

-Special session at international One Young World Event in collaboration with CMU, Phipps, and MCSI. October 20, 2012.

-Outreach activity with Manchester Academic Charter School. Presentation and activity on Energy. October 18, 2012.

-Presentation to Pittsburgh Public School, SCITECH about Sustainable Engineering, April 18, 2012.

-Outreach activity with Manchester Academic Charter School. Presentation and activity on Energy Supply and Demand. October 18, 2011.

-Outreach activity with Manchester Academic Charter School. Presentation and activity on Sustainability and Limited Resources. September 20, 2011.

-Outreach activity with Carmalt Academy. Seminar presentation and tour of Phipps Botanical Gardens, November 10, 2011.

-Collaboration with Kingsley Association (a comprehensive, culturally relevant, educational, recreational, and social programming that positively impacts the lives of youth, their families and the East End communities) and advised a collaborative CEE and MEMS senior design project, Fall 2009 to 2015.

-Faculty advisor - Carnegie Science Center's Connect to Excellence Program with Shaler High School – Focus on Green Buildings and Indoor Environmental Quality (2009, 2010).

-Faculty advisor for the Greening the Greenhouse community project – received $5000 in funding to support efforts, lead by funded graduate students, Spring 2010.

-Engineering/Science/Trade Fair for approximately 400 students who have identified an interest in engineering career cluster. Students participating in the program were from Bethel Park, Canon-McMillan, Chartiers Valley, South Park, Mt. Lebanon, Upper St. Clair, South Fayette and Peters Township. Fall 2009

Co-director, Center for Sustainable Transportation Infrastructure, 2007 to 2010

As the founding co-director of the Center for Sustainable Transportation Infrastructure in 2007, I worked with co-director, Radisav Vidic, to establish the overall vision and initial research program. The research program was largely supported by the Pennsylvania Department of Transportation (PennDOT), and during this time I worked to secure $4.5 million with over 20 research projects. During my tenure as co-director major contributions included:

-University liaison with PennDOT to coordinate existing and new research projects

-Project management of all projects from budgets, to schedules, and project deliverables

-Development of the all marketing materials, including launching new website

-Annual University and PennDOT research symposiums

-Participation in the Transportation Research Board

- Workshop Co-Chair for Western Pennsylvania Transportation Research Forum at the International Bridge Conference –2008, 2009, 2010

Director, Construction Management and Green Construction Program, 2010 to 2013

I also served as the Director of the Construction Management and Green Construction program. In this role, I primarily facilitated collaboration and coordination with the adjunct and advisory board members, aligned course offerings and instructors, strengthened relationship with local construction community, and developed new curriculum ideas to enhance the CM curriculum.

Service (Journal)

International Journal of Life Cycle Assessment – Subject Editor, Healthcare (August 2014 to present)

Service (University)

Sustainability Task Force (2013-present)

University-wide Sustainability Committee (2016-present)

Service (University-SSOE)

Internal Advisory Board (IAB) of the AGEP PITT STRIVE Program (December 2016-present)

Member of the Engineering Diversity Advisory Committee (EDAC) (December 2016-present)

PITT STRIVE Faculty Mentor in the University of Pittsburgh's Swanson School of Engineering AGEP-KAT TDAE program. TDAE activities are focused on *Adopting Evidence-Based Strategies to Improve Academic Climate and the Success of Underrepresented Doctoral Students in Engineering (*August 2016- present)

Center for Energy Faculty Search Committee (2015 to present)

M.S. in Sustainable Engineering Chair (2015 to present)

SSOE Global Engineering Preparedness Scholarship Program Mentor (March 2015 to present)

SSOE Office of Diversity Pre-Phd Summer Program (May 2014 – August 2014)

National Engineering Forum committee (August 2014 – present)

Engineering for Humanity Certificate academic committee (2009-present)

Sustainable Engineering Certificate (2009-present)

Engineering Education Research Center Advisory Member (2012-present)

Service (University- Departmental)

Ad-hoc Faculty Performance Review Committee (2016)

Chair, Non-Tenure Stream Faculty Search (2014-2015)

Ad-hoc Committee CEE International Initiatives (2014-present)

Departmental Program Leader for Sustainability Engineering group (2012-present)

Departmental CEE Undergraduate Committee (Fall 2011 to present)

Departmental Student Recruitment Committee (2011-2012)

Departmental Faculty Search Committee (2010, 2012, 2013, 2014, 2015, **2016**)

Service (Professional)

-International Living Futures, Living Product Hub Advisory Council (2017 to present)

-P4 Metrics Committee Lead, Air Metric (2016)

-Committee on Health, Convened by Green Building Alliance (2016 to present)

-Reducing Outdoor Contaminants in Indoor Spaces Initiative, Leadership Committee (August 2014 to 2017)

-Board Member, Green Building Alliance (January 2011 to present)

-National Institute of Health, Health in Buildings Roundtable (2013 to 2016)

-Board of Trustee, Phipps Conservatory and Botanical Gardens (2013 to 2015)

-International Symposium of Sustainable Systems and Technology, Planning Committee (2013, 2014)

-Session Moderator, ASCE Structures Conference, Pittsburgh's Green Building Legacy and Future, 2013

-Co-Chair of the Higher Education Climate Consortium – Fall 2009 to January 2011

-Served as EnergyCorp/Americorp Host, August 2011 to 2012

-Phipps Conservatory Living Building Challenge Advisory Committee (2007-present)

-Phipps Center for Sustainable Landscapes Planning Committee (2008-2009)

-Committee Member, Structural Engineering Institute of the American Society for Civil Engineers, Sustainability Committee (2010)

Workshop and Conference Organizing

Technical Committee, 2017 Joint Conference International Society for Industrial Ecology and International Symposium on Sustainable Systems and Technologies Conference, *June 25-29, 2017, Chicago, Illinois***.**

Session Chair, Sustainable Built Environment, 2017 Joint Conference International Society for Industrial Ecology and International Symposium on Sustainable Systems and Technologies Conference, *June 25-29, 2017, Chicago, Illinois***.**

P4 Measure Session Facilitator for Air. October 18-19, 2016.

International Conference on Sustainable Design, Engineering, and Construction. Leadership Committee, Sustainability/Resilience Track. May 18-20, 2016, Tempe, Arizona.

Hosted 2030 Stakeholder Event – February 16, 2016

Urban Transition Cities Workshop, January 22 to 23, 2016, Pittsburgh, Pennsylvania.

Engineering Sustainability 2015 and 2017, assisted with conference organizing, including abstract review.

Michael Horman Sustainability Workshop, Co-founder and Faculty advisor - collaboration with Virginia Tech University (Annie Pearce and Denise Simmons), Clemson University (Leidy Klotz), Arizona State University (Amy Landis and Kristen Parrish), Rodolfo Vasqeuz (CSU), and David Riley (PennState), 2010, 2011, 2013, 2015, **2017**

International Conference on Sustainable Design, Engineering, and Construction. Leadership Committee. May 10-13, 2015, Chicago, Illinois. http://www.icsdec.com/

Energy implications for emerging technologies and the Affordable Care Act in the healthcare industry. Workshop at International Symposium on Sustainable Systems and Technology Conference. May 18, 2014. Oakland, California.

International Symposium on Sustainable Systems and Technology Conference, Conference Proceeding Co-editor and planning committee, 2012-2013; 2013-2014. Proceedings of the

International Symposium on Sustainable Systems and Technologies (ISSN 2329-9169) is published annually by the Sustainable Conoscente Network. Melissa Bilec and Jun-ki Choi, co-editors. ISSSTNetwork@gmail.com. http://figshare.com/authors/Proc_ISSST/428830

E***ngineering Sustainability 2013***, assisted with conference organizing, including abstract review. ***International symposium on LCA and construction (civil engineering and buildings),*** technical committee, July 11-13th 2012 in the city of Nantes (France).

Higher Education Climate Consortium's Campus Emissions Inventory & Climate Action Plan Workshop, Hosted as Co-Chair, 2011

2010 ASCE Department Heads Conference. Workshop on Sustainability in Civil Engineering. **(May 2010) held in Pittsburgh, PA.** In collaboration with GDI faculty from CMU and Dr. Landis, organized a ½ day seminar on sustainability activities at Pitt.

American Society of Civil Engineers National Conference's preconference workshop, Sustainability Primer (2009).

OUTREACH/CO-CURRICULAR

-Attend Pitt STRIVE Retreat 2016, 2017

-Presentation, Prepping PhD Students, March 2016, 2017

-Citizen Science/Bike Campaign in Larimer Community to collect ambient air quality data, July 27, 2016.

-Presentation, So You Want to be an Engineer, July 8, 2016

-Reducing Outdoor Contaminants in Indoor Spaces, Low Cost Monitoring Program, Round 8, May 27, 2016 to June 20, 2016.

-Presentation, Building Energy Use and Indoor Environmental Quality in the Mascaro Center for Sustainable Innovation Building, 2030 Stakeholder Meeting, February 16, 2016

-Reducing Outdoor Contaminants in Indoor Spaces, Low Cost Monitoring Program, Round 2, December 2015.

-Presentation, Urban Transition Cities Movement Workshop (UTCM), Rickenbacker, H.J., Bilec, M.M., (2016). "Environmental Consciousness: The Importance of Air Quality." 4th UTCM 2016, January 23, 2016, Pittsburgh, Pennsylvania.

-Environmental Justice Community Alert Matrix Community Action Team (CAT) Training Workshop. Presentation, Rickenbacker, H.J., Bilec, M.M., (2015). "Mitigating Air Quality Risk in Underrepresented Communities", CAT 2015, September 19, 2015, Pittsburgh, Pennsylvania

-Citizen Science/Bike Campaign in Larimer Community to collect ambient air quality data, July 16, 2015.

-Presentation, So You Want to be an Engineer, July 10, 2015

-Expert Panel Member, Carnegie Science Center's Student Energy Summit, October 9, 2014.

-Presentation, Day of Admitted Students, March 1, 2014

-Presentation to undergraduate students on undergraduate research, November 8, 2013.

-Organizer of *Healthy Homes Fair: Energy Efficiency at Work,* September 26, 2013.

-Presentation to Governor's students in Pittsburgh Health Career Scholars Academy, June 29, 2012.

-Presentation to prospective students during Pitt Engineering Day, April 13, 2012.

-Presentation to National Society of Black Engineers to provide information about CEE department and graduate research opportunities. March 29, 2012.

-Faculty Advisor for University of Pittsburgh Medical Center (UPMC) 2011 Sustainable Health Care Innovation Competition Winner, Student Division, 2011

-Faculty advisor for the Mascaro Center for Sustainable Innovation's Energy Efficient Building Technologies Competition – received 2nd place for Green Space Heater, 2011

-Faculty advisor for Vandergrift Improvement Program's Renovation project – Fall 2009 to Spring 2010

-Faculty mentor for the United States Green Building Council's Natural Talent Design Competition, Spring 2010

-Presentation at Mt. Lebanon's Library's Green Series – "Green Buildings, Green Building Product Labeling and Life Cycle Analysis." November 4, 2009.

-Faculty judge - NSF RET (Spring 2009).

PEER REVIEW SERVICE

National Science Foundation proposal review (2009 to present)
Environmental Protection Agency (2009 to present)
CDC, National Institute of Occupational Health and Safety (2013 to present)

ASCE Journal of Construction Engineering and Management
ASCE Journal of Engineering Education and Profession Practice
ASCE Journal of Infrastructure Systems
ASCE Journal of Energy Engineering
Building and Environment
Buildings
Energy Policy
Energies
Energy and Buildings
Environmental Science & Technology
Environmental Research Letters
Journal of Cleaner Production
Journal of Green Buildings
Journal of Industrial Ecology
Journal of Transportation Engineering
IEEE International Symposium on Sustainable Systems and Technology
Risk Analysis

PROFESSIONAL AFFILIATIONS

AEESP
American Society for Engineering Education
American Center for Life Cycle Assessment
American Society of Civil Engineers

International Society for Industrial Ecology
Society of Women Engineers

Recent Conferences Attended (since October 2013)

2016 – ICSDEC, Tempe, AZ, May 2016
2015 – ICSDEC, Chicago, IL, May 2015
2015 – SETAC, Barcelona, Spain, May 2015
2015 – Engineering Sustainability 2015, April 2015
2014 – ASEE, June 2014
2014 – Gordon Research Congress, June 2014, Lucca, Italy
2014 – ISSST, May 15-18, 2014, Oakland, California
2013 – Let's Move Pittsburgh, November 7, 2013, Pittsburgh, Pennsylvania
2013 – inLCAXII in Orlando, Florida

PROFESSIONAL EXPERIENCE

1999: Structural Engineer, SAI Consulting Engineers, Pittsburgh, PA
Contributed to the design of new and rehabilitated highway bridges including substructure and superstructure elements
Worked on hydrologic and hydraulic studies
Prepared cost estimates, construction plans, details, and specifications

1999 to 2007: Senior Project Engineer, Urban Redevelopment Authority, Pittsburgh, PA
Managed design and construction contracts including budgeting, scheduling, quality control, and risk analyses
Managed environmental concerns on brownfield sites such as remediation, waste disposal regulations, testing requirements, and site specific health standards
Developed sustainability and green design policy
Example infrastructure project: Hot Metal Pedestrian Bridge
Rehabilitation and extension of 100-year old historic railroad bridge with a new truss bridge structure and several new ramping components with a total project cost of $11,500,000
Responsible for development of funding program
Procured and managed design, construction inspection, and construction contracts

Example building project: Four Precast Parking Garages
Four precast parking garage structures with 2,300 spaces totaling approximately $33,000,000 to support a mixed-use development on a brownfield site
Responsible for managing the design and construction management contracts including developing design consensus from internal staff, community groups, planning commission, and private developer.

PAUL L. BISHOP

ADDRESS:

[redacted]

EDUCATION:

Degree	Field	Institution	Date
B.S.C.E.	Civil Engineering	Northeastern University	1968
M.S.C.E.	Environmental Engineering	Purdue University	1970
Ph.D.	Environmental Engineering	Purdue University	1972

UNIVERSITY EXPERIENCE:

Rank	Institution	Dates
Associate Dean of Engineering for Research (part-time)	University of Rhode Island	2011 - present
Fulbright Specialist	Birla Institute of Technology and Science, Hyderabad, India	2016
Visiting Professor	Parthenope University of Naples Naples, Italy	2015
Consultant	ABET Foundation, Inc.	2014 - present
Fulbright Distinguished Chair of Environmental Engineering	Parthenope University of Naples Naples, Italy	2013
Professor Emeritus of Environmental Engineering	University of Cincinnati	2011 - present
Environmental Engineering Program Director	National Science Foundation	2009 - 2011
Environmental Implications of Emerging Technologies Program Director	National Science Foundation	2008 - 2009
Associate Vice President for Research	University of Cincinnati	2006 - 2009
Director, UC/NIEHS Superfund Basic Research Program	University of Cincinnati	2005 - 2008
Professor of Environmental Health (College of Medicine)	University of Cincinnati	2004 – 2008
Associate Dean for Graduate Studies and Research	University of Cincinnati	2000 - 2006

Herman Schneider Professor of Environmental Engineering	University of Cincinnati	1996 - 2007
Professor of Environmental Eng.	University of Cincinnati	1993 - 2011
William Thoms Professor and Head of Civil and Environmental Engineering	University of Cincinnati	1987 - 1993
Professor	University of New Hampshire	1982 - 1987
Guest Professor	Technical University of Denmark Lyngby, Denmark	1986 - 1987
Visiting Professor	Cornell University	1981,1982,1985 (Summers)
Associate Professor	University of New Hampshire	1976 - 1982
Associate Professor and Chairman	University of New Hampshire	1977 - 1980
Visiting Professor	Heriot-Watt University Edinburgh, Scotland	1980
Assistant Professor	University of New Hampshire	1972 - 1976

NON-ACADEMIC EXPERIENCE:

Position Title	Company	Dates
Environmental Engineering Consultant		1972 - Present
County Sanitarian	Tippecanoe County Health Dept. Lafayette, Indiana	1971 - 1972
Environmental Engineer	Metcalf & Eddy Engineers, Inc. Boston, Massachusetts	1968
	Cooperative Engineer Engineers, Inc. 1964 - 1967 Boston, Massachusetts	Metcalf & Eddy

PROFESSIONAL REGISTRATION:

Registered Professional Engineer in the State of New Hampshire.

PROFESSIONAL ORGANIZATIONS:

American Academy of Environmental Engineers (AAEE)
- Board of Trustees, Member, 1988 - 1991, 2001 - 2004
- Seminars Committee - Chair, 1988 - 1989
- Education Committee - Chair, 1989 - 1993; 1998 - 2008; Chair, 2005 - 2008
- By-Laws Committee, 2001 - 2013

Liaison to ABET, 2005 - 2008
ABET Engineering Accreditation Commission Commissioner, 2008 - 2011
Body of Knowledge Task Force Committee, 2006 – 2008
ABET Board of Delegates Alternate, 2014-2017

Water Environment Federation (WEF)
Fellow, 2011-present
Program Committee, 1989 - 1993
Sludge Management Subcommittee, 1989 - 1993
Chair, 1991 - 1993
Hazardous Waste Committee, 1984 - 1993
University of Cincinnati Student Chapter Adviser; 1994 – 2004

Water Environment & Reuse Foundation (WERF) (formerly the Water Environment Research Foundation)
Board of Directors, 2012 – present
Research Policy Committee, Chair – 2014-2016
Paul Busch Award Selection Committee, 2006 - 2015
Paul Busch Award Steering Committee, 2015 – 2016
U2R14 Project Subcommittee, 2015 – present

American Society of Civil Engineers (ASCE)
Fellow, 1997 - present
Hazardous Waste Committee, 1981 - 1993
Cincinnati Section - Environmental Engineering Group
Management Committee, 1992 – 1997
Environmental and Water Resources Institute – 2002-present

Association of Environmental Engineering and Science Professors (AEESP)
Fellow, 2015 - present
Past President, 1993 - 1994
President, 1992 - 1993
Vice President, 1991 - 1992
Member of the Board of Directors, 1991 - 1994
Audit Committee - Chair, 1976 - 1977
AAEE Liaison, 1988 - 1991
IWA USANC Liaison, 2002 - 2008
Awards Committee Acting Chair, 1995
Nominating Committee, 1993 - 1997

International Water Association (IWA)
Fellow, 2011 - present
Board of Governors, 2002 - 2008
Strategic Council, 2002 - 2011
Specialist Group on Biofilm Systems, 1991 - present
Management Group, 1994 - 2012
Specialist Group on Environmental Engineering Education, 1993 - present
Management Group, 1994 - 2013
Chair, 1994 - 1998
Conference on Environmental Engineering Education, Singapore, Chair, 1996
Water Science & Technology Editorial Board – 2009 - present
U.S.A. National Council (USANC)
Chair, 2002 - 2008
Secretary/Treasurer, 2000 - 2002
AEESP Representative, 1994 - 2002
Reorganization Committee, 1999 - 2002
USANC Founders Award Committee Chair, 1994 – 1996

Accreditation Board for Engineering and Technology (ABET)
Engineering Accreditation Commission Commissioner, 2008 - 2013
Alternate Director, 1991 – 1998
Program Visitor, 1989 - present

International Program Visitor, 2006 – present
Readiness Review Committee, 2013-present
ABET Board of Delegates Alternate, 2014-2017
ABET Foundation, Inc.
Consultant, 2014 - present
American Society for Engineering Education (ASEE)
Engineering Research Council, 2001 – present
Engineering Conferences International (ECI)
Conferences Committee, 2013-present
Environmental Engineering Committee Chair, 2014 - present
Sigma Xi
Tau Beta Pi
Chi Epsilon

HONORS AND AWARDS:

Perry L. McCarty/AEESP Founders Award – 2017

Association of Environmental Engineering and Science Professors – Fellow, 2014

Simon Freese Prize and Lecture, Environmental and Water Resources Institute of the American Society of Civil Engineers - 2013.

American Chemical Society Special Symposium to Honor Dr. Paul L. Bishop, Philadelphia, PA, August 21, 2012

International Water Association – Fellow, 2011

Water Environment Federation – Fellow, 2011

National Science Foundation Director's Award for Collaborative Integration – 2010

American Society of Civil Engineers – Life Member, 2010

Water Environment Federation – Water Hero Award, 2009

UC College of Engineering Distinguished Engineering Research Award, 2007

International Water Association (IWA) Outstanding Service Award, 2006

AEESP /Malcolm Pirnie Frontier in Research Award, 2005

American Society of Civil Engineers – Fellow, 1997

Herman Schneider Professor of Environmental Engineering, University of Cincinnati, 1996-present

University of Cincinnati Faculty Achievement Award, 1997

AEEP/Parsons Engineering Science, Inc. Outstanding Doctoral Dissertation Advisor Award, 1995

William Thoms Professor of Civil and Environmental Engineering, 1988-1993

ASTM Faculty Fellow, 1984

Diplomate - American Academy of Environmental Engineers, 1985 - present

Listed in: *Marquis Who's Who*
Marquis Who's Who in America
Marquis Who's Who in the East
Marquis Moving Up in America
Marquis Who's Who of Emerging Leaders in America
Marquis Who's Who in American Education
Marquis Who's Who in the World
Marquis Who's Who in Science and Engineering
Dictionary of International Biography
American Men and Women of Science
Who's Who in Engineering Education

EDITORIAL AND ADVISORY BOARDS:

Editorial Boards
Water Science & Technology - Advisory Board, 2009 - 2015
The Environmental Engineer – Editorial Board, 2006 – 2012
Journal of Environmental Engineering and Science - Associate Editor, 2001 - 2010
Re/Views in Environmental Science and Bio/Technology - Advisory Board, 2001 - 2006
Journal of Hazardous Materials - Editorial Board, 1988 - 2006
Journal of Environmental Sciences and Health - Associate Editor, 1990 - 1996
IAWQ/IWSA Environmental Engineering Education Newsletter - Editor, 1994 - 1995

Advisory Boards
Water Environment Research Foundation, Board of Directors – 2012-present
Water Environment & Reuse Foundation – Board of Directors – 2015-2017
Bristol County Water Authority – Board of Directors – 2011-present
Alberta Water Research Institute – International Research Advisory Committee – 2007 - 2013
Alberta Ingenuity Centre for Water Research – International Advisory Board – 2006 - 2007
U.S. EPA Center for Clean Industrial and Treatment Technologies - Michigan Technological University - Science Advisory Board, 1992 - 2001
Center for Applied Environmental Technologies, Institute of Advanced Manufacturing Sciences, Inc. - Steering Committee, 1991 - 2000
WARZYN Engineering, Inc., Madison, WI - Technical Advisory Board, 1990 - 1994
Cincinnati State Technical and Community College, Environmental Engineering Technology Advisory Board, 2000 – 2011

MUNICIPAL ORGANIZATIONS:

Planning Board, Town of Lee, NH
Member, 1975 - 1980
Chairman, 1978 - 1980
Consultant, 1980 - 1986

Zoning Board of Adjustment, Town of Lee, NH
Member, 1980 - 1986

Durham - UNH Sewer Policy Board
Member, 1979 - 1986

Metropolitan Sanitary District of Greater Cincinnati, OH
Appellate Board, 1991 – 2006
Chair – 1991-2006
Public Advisory Committee, 2000 - 2007

Planning Advisory Committee, Anderson Township, OH
Member, 1991 - 1997
Vice-Chair, 1996
Chair, 1997

Development Advisory Committee, Anderson Township, OH
Member, 1998 - 1999
Vice-Chair, 1998

Hamilton County Storm Water District Steering Committee, Cincinnati, OH
Member, 2001 – present

Metropolitan Sewer District of Greater Cincinnati Combined Sewer Overflow Long Term Control Plan Steering Committee, 2004 – 2007

Bristol County Water Authority, Bristol County, RI
Board of Directors, 2011 – present
Engineering Committee – Chair – 2011-2013
Personnel & Finance Committee – Chair – 2013-present

STATE BOARDS:

Ohio Governor's Task Force on Waste Minimization, 1988 - 1991

New Hampshire Solid Waste Management Council
Council Member, 1981 - 1987

State of Ohio Fernald Cleanup Initiative Leadership Team, 1991 - 1992

University Clean Energy Alliance of Ohio (UCEAO), 2006 - present

Ohio Biofuels Taskforce, Transportation Subcommittee on Automobile & Truck Manufacturers, 2007 – 2008

FEDERAL BOARDS:

National Water Quality Monitoring Council, 2009-2011

National Aeronautics Research and Development Policy Working Group, 2008-2011

FUNDED RESEARCH:

1. Aerobic Digestion of Sludge under Cold Temperature Conditions - Office of Water Resources Research, U.S. Dept. of the Interior, $52,000, 1973 - 1976.

2. Strafford Region Solid Waste Management System - Strafford Regional Planning Commission, $24,000, 1974 - 1976.

3. Removal of Fluoride from Water by Use of Fluidized Activated Alumina Adsorption - Center for Industrial and Institutional Development, $9,000, 1975.

4. Water Pollution Potential of Snow Removal Operations - Town of Durham, NH, $11,000, 1976 - 1977.

5. Water Quality Modeling in the Great Bay Estuary System - Office of Sea Grant, National Oceanic and

Atmospheric Administration, $78,000, 1978.

6. Dispersive Processes for Short Duration Discharges in the Great Bay Estuary System - Office of Sea Grant, National Oceanic and Atmospheric Administration, $82,000, 1979.

7. Treatment of High Salinity Wastewater with Rotating Biological Contractors - Hubbard Fund, $15,000, 1978 - 1979.

8. Environmental Engineering in the Oceans - National Science Foundation, $92,000, 1979 - 1981.

9. Subsurface Disposal System Rejuvenation using Hydrogen Peroxide - Community Services Administration, $11,000, 1979 - 1981.

10. Pathogen Survival During Forced Aeration Composting of Municipal Sludge - Office of Water Research and Technology, U.S. Dept. of the Interior, $135,000, 1979 - 1982.

11. Tertiary Treatment of Municipal Wastewaters Using Seaweeds - Hubbard Fund, $9,000, 1981 - 1982.

12. The Role of Protozoans in Rotating Biological Contactor Biofilms - National Science Foundation, $6,000, 1981 - 1982.

13. High Energy Electron Disinfection of Municipal Wastewater Sludge Compost - High Voltage Engineering Corporation, $2,600, 1981 - 1982.

14. Examination of a Combined Secondary and Tertiary Wastewater Treatment Process for Temperate Regions Using Aquatic Macrophytes and Their Epifloral Biofilms - National Science Foundation, $343,000, 1982 - 1985.

15. Removal of Heavy Metals by Aquatic Macrophytes in Temperate Regions - National Science Foundation, $11,000, 1983 - 1984.

16. Evaluation of the Potential for Marine Disposal of Solidified/ Stabilized Inorganic Hazardous Wastes - National Oceanic and Atmospheric Administration, $80,000, 1983 1985.

17. Development of a Dynamic Leaching Test for Hazardous Wastes - New Hampshire Bureau of Hazardous Waste Management, $24,000, 1984 - 1985.

18. Radon Removal Techniques for Community Public Water Supplies in New Hampshire - U.S. Environmental Protection Agency, $90,000, 1985 - 1987.

19. Development of a Standard Solid Waste Leaching Test - New Hampshire Office of Waste Management, $33,000, 1985 - 1987.

20. Development Studies for an Automated Water Filter System - Teledyne Water Pik, $38,000, 1986 - 1987.

21. Removal of Trace Organics from Municipal Wastewater - Danish Council of Technical and Scientific Research, $110,000, 1986 - 1987.

22. Biodegradation of Azo Dyes - Ohio Board of Regents, $90,000, 1988 - 1990.

23. Aerobic Digestion of Recalcitrant Toxics - U.S. EPA, $72,000, 1988 - 1990.

24. Two-sludge Anaerobic/Aerobic Treatment of CERCLA Leachants in POTWs - U.S. EPA, $410,000, 1988 - 1990.

25. Biofilm Treatment of Xenobiotics - National Institute of Environmental Health Sciences, $415,000, 1988 - 1992.

26. Alternative Leaching Scenarios for Solidified/Stabilized Hazardous Wastes - U.S. EPA, $87,000, 1988 - 1989.

27. Assessment of Solidification/Stabilization for Superfund Contaminated Soils - U.S. EPA, $133,000, 1988 - 1989.

28. Chemical Fixation of Flue Gas Desulfurization Sludges - Ohio Coal Development Office, $250,000, 1989 - 1991.

29. Biodegradation of Hazardous Compounds in Rotating Biofilms (Co-PI) - U.S. EPA, $87,000, 1989.

30. PEI Research Subcontract - PEI, Inc. (later IT Corporation), $2,756,000, 1989 - 1994.

31. Program in Hazardous Waste Management - Ohio Board of Regents (Academic Challenge), $540,000, 1989 - 1995.

32. Assessment of Long Term Durability of Solidified/Stabilized Hazardous Waste Forms, U.S. EPA, $525,000, 1990 - 1993.

33. Micro-scale Environmental Conditions Present During Biodegradation of Toxic Organics in Biofilms - Ohio Hazardous Substance Research, Education and Management Institute, $32,000, 1990 - 1992.

34. Stabilization/Solidification Technology Evaluation - E.I. DuPont deNemours and Co., Inc., $205,000, 1990 - 1992.

35. Assessment of Solidification/Stabilization of Mixed Wastes (co-P.I.) - Westinghouse Materials Company of Ohio, $560,000, 1990 - 1992.

36. Composting of Municipal Solid Wastes - City of Cincinnati, Ohio, $150,000, 1990 -1992.

37. Review and Analysis of Environmental Training Plans - Westinghouse Materials Company of Ohio, $43,000, 1991.

38. Review and Analysis of RCRA Compliance Refresher Course and Student Testing Material - Westinghouse Environmental Management Company of Ohio, $23,000, 1991-1992.

39. Construction of a Hazardous Waste Research Facility - Ohio Board of Regents, $2,406,000, 1991.

40. Transport and Microbial Degradation in Biofilms - National Institute of Environmental Health Sciences, $880,000, 1992-1995.

41. Review of Operable Unit 2 Draft Remedial Investigation Baseline Risk Assessments - Westinghouse Environmental Management Company of Ohio, $21,000, 1992.

42. Development of Industrial Workshops - Westinghouse Environmental Management Company of Ohio, $82,000, 1992-1993.

43. UC/USEPA Cooperative Agreement - U.S. EPA, $900,000, 1993.

44. Microbial Detoxification/Degradation of Hazardous Wastes (co-P.I.) - National Institutes of Health, $149,000, 1993-1995.

45. Aerobic Degradation of Recalcitrant Volatile Chlorinated Chemicals in a Hydrogel Encapsulated Biomass Biofilter (co-P.I.) - U.S. Environmental Protection Agency, $106,376, 1994-1995.

46. Investigation of Nitrification Tower Upsets at the North Regional Wastewater Treatment Plant - Miami Conservancy District, Dayton, OH, $95,900, 1994-1996.

47. Volatile Organic Carbon Sources and Control at Metropolitan Sewer District Wastewater Treatment Plants - Metropolitan Sewer District of Greater Cincinnati, $156,000, 1994-1996.

48. Transport and Degradation of Toxic Agents in Biofilms - National Institute of Environmental Health Sciences, $862,753, 1995-2001.

49. Development of Conducting Polymer Ion Selective Microelectrodes for Use in Environmental and Biomedical Analyses - National Science Foundation, $35,000, 1995-1998.

50. International Group Travel Grant, IAWQ Biennial Conference, Singapore - National Science Foundation, $18,918, 1996-1997.

51. Incorporation of Molecular Biotechnology Concepts into Environmental Engineering - University of Cincinnati Support for Faculty Development, $2,495, 1996-97.

52. Environmentally Conscious Engineering - Ohio Environmental Protection Agency, $47,645, 1996-1998.

53. Stabilization/Solidification of Organically-Contaminated Hazardous Wastes Using Reactivated Carbon - National Science Foundation, $475,000, 1996-2000.

54. Stabilization/Solidification of Organically-Contaminated Hazardous Wastes Using Reactivated Carbon - DuPont Co., Wilmington, DE, $75,000, 1996-2000.

55. Stabilization/Solidification of Organically-Contaminated Hazardous Wastes Using Reactivated Carbon - Calgon Carbon Co., Pittsburgh, PA, $75,000, 1996-2000.

56. Improved Aeration Efficiency at the Mill Creek Wastewater Treatment Plant - Metropolitan Sewer District of Greater Cincinnati, $45,000, 1997-1998.

57. Pollution Prevention Program for Industrial Users of MSD Wastewater Treatment Plants - Metropolitan Sewer District of Greater Cincinnati, $20,000, 1997-1998.

58. Evaluating the Performance of the New Biofilters at the Mill Creek Wastewater Treatment Plant - Metropolitan Sewer District of Greater Cincinnati, $45,000, 1997-1998.

59. Use of Reclaimed Magnesium Hydroxide as a Wastewater Treatment Reagent - Ohio Coal Development Office, $275,575, 1997-2001.

60. Use of Reclaimed Magnesium Hydroxide as a Wastewater Treatment Reagent - Cinergy Corp., $139,976, 1997-2001.

61. Use of Reclaimed Magnesium Hydroxide as a Wastewater Treatment Reagent - Dravo Lime Co., $65,281, 1997-2001.

62. Alternative Waste Treatment Studies for OU4 Fernald Silo Wastes - Fermco Restoration Management Corp., (with L. Reiser), $94,999, 1997-1998.

63. Technical and Economic Comparison of Biofilter Odor Control versus Wet Scrubbing at the MSD Mill Creek Facility, Metropolitan Sewer District of Greater Cincinnati, $71,000, 1998-2001.

64. Control of Wastewater Color through Pollution Prevention, Metropolitan Sewer District of Greater Cincinnati, $38,400, 1998-2000.

65. Use of Oxidation-Reduction Potential for Control of Wastewater Treatment Operations at MSD, Metropolitan Sewer District of Greater Cincinnati, $95,400, 1998-2001.

66. Stabilization and Testing of Mercury Containing Wastes, (with M. Suidan and L. Rieser), U.S. EPA, $200,000, 1998-2000.

67. Water Chemistry at the Surface of Pipe Walls in Drinking Water Distribution Systems, U.S. EPA, $69,000, 1999-2001.

68. Technical Support for Revisions to the Land Disposal Restrictions for Mercury Process Wastes, (with M. Suidan and L. Rieser), U.S. EPA, $26,000, 1999-2000.

69. Technical Support for Revisions to the Land Disposal Restrictions for Mercury Wastes, Including Soil and Debris Contaminated with Mercury, (with M. Suidan and L. Rieser), U.S. EPA, $75,000, 1999-2000.

70. Leachability of Metals from Mineral Processing Waste, U.S. EPA, $72,627, 2000-2001.

71. Technical Support of Long Term Stewardship Meeting, Fluor Fernald, Inc., $75,000, 2000.

72. Technical Support Services for OSDF Administrative and Engineering Services, Fluor Fernald, Inc., $45,000, 2000-2001.

73. Support of the Fernald Post Closure Stewardship Technology Project (PCSTP) Integrating Stewardship Technology Team, Fluor Fernald, Inc., $45,000, 2000-2001.

74. Transport and Biodegradation of Toxic Organics in Biofilms, National Institute of Environmental Health Sciences, $1,105,567, 2001-2008.

75. Adaptation of Subsurface Microbial Biofilm Communities in Response to Chemical Stressors, (with Nancy Love, VPI&SU), U.S. EPA, $300,000, 2001-2003.

76. Performance and Evaluation of Satellite CSO Primary Tank Units, Metropolitan Sewer District of Greater Cincinnati, $140,000, 2001-2004.

77. Microelectrodes for Environmental Monitoring, National Institute of Environmental Health Sciences (sub-contract to Emerging Concepts, Inc.), $132,000, 2002-2005.

78. Biological Nutrient Removal in MSD Plants, Metropolitan Sewer District of Greater Cincinnati, $50,000, 2002-2004.

79. Control of Odors and VOCs by Recirculation of Off-Gas Emissions from Aeration Basins, Metropolitan Sewer District of Greater Cincinnati, (with Tim Keener), $50,000, 2002-2004.

80. Integrated Microelectrode Arrays for Field-Based Environmental Monitoring, (with Ian Papautsky and Fred Beyette), National Science Foundation, $99,775, 2002-2004.

81. Effectiveness of Chlorine Dioxide in the Disinfection of Biofilms in Pipes and Food Process Equipment, JohnsonDiversey, Inc., $22,442, 2004-2005.

82. Potential for Pathogen Adhesion to Water Distribution Systems Biofilm Following a Bioterrorism Attack, U.S. EPA, $87,034, 2004-2006.

83. Phosphorus Recovery from Sewage, U.S. EPA, (with D. Oerther), $10,000, 2004-2005.

84. Improvement of Wet Weather Treatment Facility Performance with Use of Polymer Addition and UV Disinfection, Metropolitan Sewer District of Greater Cincinnati, $40,000, 2005.

85. Integrated Multi-Analyte Microelectrode Sensors for In Situ Environmental Monitoring, National Science Foundation (with Ian Papautsky and Fred Beyette), $328,788, 2005-2008.

86. The Ability of Chlorine Dioxide Films to Retain Their Disinfecting Concentration, JohnsonDiversey Co., $2,500, 2006.

88. PAH Bioremediation and Monitoring in Biowalls, NIEHS, $1,050,550, 2006-2010.

89. Persistence of Spore Forming Bacteria on Drinking Water Biofilm and Evaluation of Decontamination Methods, U.S. EPA, $198,569, 2007-2009.

90. Development and Use of Microelectrodes to Evaluate Nitrification within Chloraminated Drinking Water System Biofilms, U.S. EPA, $300,000, 2007-2009.

91. Bench-Scale Pipe Leak Testing Experiment Station, U.S. EPA, $225,000, 2007-2008.

92. IWA Young Water Professionals Travel Grant, National Science Foundation, $24,000, 2008.

93. Point of Care Center for Emerging Neurotechnologies (POC-CENT), National Institute of Biomedical Imaging and Bioengineering, (Fred Beyette, PI), $9,363,719, 2007-2012.

94. Development of a Portable Multi-Analyte Sensor to Simultaneously Measure Chloride, Potassium, ORP and pH in RO Membrane Systems, (Am Jang, PI), Gwangju Institute of Science and Technology, Korea, $228,402, 2008-2011.

95. Fulbright Distinguished Chair of Environmental Engineering at the Parthenope University of Naples, Italy, American-Italy Fulbright Commission, $44,000, 2013.

96. Development of research proposal to the EU on wastewater sludge heat treatment process, Parthenope University of Naples, Italy, $12.000, 2015.

PATENTS:

1. Method and Apparatus for Reducing Levels of Organics in Liquids, U.S. Patent No. 4,534,865

2. Aerobic Fluidized Bed Reactor with Internal Media Cleaning, U.S. Patent No. 5,487,829.

3. Potentiometric Microelectrode Sensors for In Situ Environmental Monitoring, U.S. Provisional Patent No. 60/621,504.

4. Micro Sensor Arrays for In Situ Measurements, U.S. Patent No. 11/257,418.

BOOKS:

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2. Colombo, P., Barth, E., Bishop, P.L., Buelt, J. and Conner, J., *Innovative Site Remediation Technology: Stabilization/Solidification*, American Academy of Environmental Engineers, Annapolis, MD, 166 pp., 1994.

3. Bishop, P.L., *Pollution Prevention: Fundamentals and Practice*, McGraw-Hill, New York, 717 pp., 2000.

4. Bishop, P.L., *Solutions Manual to Accompany Pollution Prevention: Fundamentals and Practice*, McGraw-Hill, New York, 238 pp., 2000.

5. Wuertz, S., Bishop, P.L. and Wilderer, P.A., *Biofilms in Wastewater Treatment: An Interdisciplinary Approach*, IWA Publishing, London, 400 pp., 2003.

6. Bishop, P.L., *Pollution Prevention: Fundamentals and Practice*, Waveland Press, Long Grove, IL, 750 pp., 2004.

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1. Bishop, P.L., "Removal of powdered activated carbon from water by foam separation," *Separation Science and Technology*, 13:47-58, 1978.

2. Bishop, P.L. and Sansoucy, G., "Fluoride removal from drinking water by fluidized activated alumina adsorption," *Journal American Water Works Association*, 70:554-559, 1978.

3. Bishop, P.L. and Farmer, M., "The fate of nutrients during aerobic digestion," *Journal of the Environmental Engineering Division*, ASCE, 104:967-977, 1978.

4. Pierstorff, B. and Bishop, P., "Water pollution from snow removal operations," *Journal of the Environmental Engineering Division*, ASCE, 106:377-388, 1980.

5. Bishop, P., Howard, E., Flinkstrom, M., White, C. and Cooke, R., "Regional resource recovery center cost analysis," *Journal of the Environmental Engineering Division*, ASCE, 106:977-990, 1980.

6. Bishop, P. and Logsdon, S., "Rejuvenation of failed soil absorption systems," *Journal of the Environmental Engineering Division*, American Society of Civil Engineers, 107:47-55, 1981.

7. Kinner, N. and Bishop, P., "Treatment of saline domestic wastewater using RBCs," *Journal of the Environmental Engineering Division*, ASCE, 108:650-664, 1982.

8. Andrews, T. and Bishop, P., "The use of hydrogen peroxide for failed soil absorption system rehabilitation," *Journal of the New England Water Pollution Control Association*, 16(10):32-50, 1982.

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10. Bishop, P., "The scale-up and limitation of physical oxygen transfer in rotating biological contactors - a discussion," *Water Science and Technology*, 14(8):982-984, 1982.

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13. Eighmy, T., Maratea, D. and Bishop, P., "An electron microscopic examination of wastewater biofilm formation and structural components," *Applied and Environmental Microbiology*, 45:1921-1931, 1983.

14. Bishop, P. and Godfrey, C., "Nitrogen transformations during aerobic composting of sewage sludge," *Biocycle, Journal of Waste Recycling*, 24(4):34-39, 1983.

15. Manoliadis, O. and Bishop, P., "Temperature effects on the rheology of sludges," *Journal of Environmental Engineering*, 110(1):110-114, 1984.

16. Kinner, N., Maratea, D. and Bishop, P., "An evaluation of the bacteria and protozoa inhabiting rotating biological contactor biofilms," *Water, Science and Technology*, Pergamon Press, 1984.

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20. Shively, W., Bishop, P., Brown, T. and Gress, D., Leaching tests of heavy metals solidified and stabilized with Portland cement," *Journal Water Pollution Control Federation*, 58:234-241, 1986.

21. Bishop, P. and Kinner, N., "Aerobic fixed - film processes", Chapter 3, *Biotechnology*, Verlag Chemie, Weinheim, Germany, 114-176, 1986.

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28. Campbell, K., El-Korchi, T., Gress, D. and Bishop, P., "Stabilization of cadmium and lead in Portland cement paste using a synthetic seawater leachant," *Environmental Progress*, 6:99-103, 1987.

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17. Sundberg, D., Bishop, P. and Turner, L., "Characterization of the Diffusion of Organic Liquids from Dilute Aqueous Solutions into Polymers," Final Report, Teledyne Water Pik, Fort Collins, CO, 46 pp., 1987.

18. Bishop, P. and Keener, T., "Chemical Fixation of Flue Gas Desulfurization Sludges and Fly Ash," Final Report, Ohio Coal Development Office, Columbus, OH, 305 pp., 1992.

19. Bishop, P., Kinman, R., Kupferle, M., Reid, J. and Eberhard, J., "Composting Municipal Wastes," Final Report, City of Cincinnati Department of Public Works, 128 pp., 1992.

20. Bishop, P., Beljin, M., Biswas, P., Eberhard, J., Eckart, L., Reid, J. and Uber, J., "Review of the Fernald Environmental Management Project Remedial Investigation Baseline Assessment for Operable Unit 2," Final Report, Westinghouse Environmental Management Company of Ohio, 40 pp., 1992.

21. Hauser, T. and Bishop, P., "Workshop on Transite Decontamination, Dismantlement and Recycle/Disposal," Final Report submitted to Office of Environmental Restoration and Waste Management, U.S. Department of Energy, 1993.

22. Bishop, P.L. (editor), "Research Developments at Water Quality International '96," completion report submitted to the National Science Foundation, 208 pp., 1996.

23. Bishop, P.L., “Technical Support of Post Closure Stewardship Meeting - Final Report,” completion report to Fluor Fernald, Inc., 408 pp., 2000.

24. Bishop, P.L., “Leachability of Metals from Mineral Processing Wastes - Final Report,” completion report to U.S. EPA, 85 pp., 2001.

25. Bishop, P.L. and Keener, T.C., “Use of Reclaimed Magnesium Hydroxide as a Wastewater Treatment Reagent,” Final Report to the Ohio Coal Development Office, Columbus, OH, 230 pp., 2002.

26. Bishop, P.L. and Gong, P., “Leachability of Metals from Mineral Processing Waste,” EPA/600/R-04/051, USEPA, Cincinnati, OH, 62 pp., July 2004.

27. Al-Abed, S.R., Bishop, P.L. and Gong, P., “Leaching of oxo-anion-forming elements from mineral processing waste using constant pH test,” U.S. EPA, 2005.

28. Bishop, P.L., Boccelli, D., Papautsky, I. and Ionnides, A., “Construction and Commencement: Pipe Leak Detection Experimental Station,” USEPA, Cincinnati, 55 pp., January 2008.

PLB:plb
10/23/2017

ROBERT E. (Bob) BLANZ

Chief Technical Officer, ADEQ

Education

Ph.D. Civil Engineering, Texas A&M University
MS Zoology (Limnology), University of Arkansas
BA Zoology, University of Arkansas

Professional Registration

Professional Engineer: Arkansas, Tennessee (inactive), Mississippi, Alabama (inactive)

Relevant Experience

Dr. Blanz has over 40 years experience in environmental engineering, including 21 with CH2M HILL, an international engineering firm. He served as Vice President and Area Manager for Arkansas. He retired from CH2M HIll in February 2009 and formed Blanz Engineering and Environmental Solutions, Inc. (BEES).

His regulatory experience includes two years as a NPDES permit writer for the Arkansas Department of Pollution Control and Ecology in the mid 1970's, two years as Director of the Kentucky Division of Water Quality, and seven years as Deputy Director of the Arkansas Department of Pollution Control and Ecology, now the Arkansas Department of Environmental Quality.

As Director of the Kentucky Division of Water Quality, Dr, Blanz was responsible for programs that included permitting, enforcement, water quality management planning, and production of the first water quality standards promulgated by the Commonwealth of Kentucky.

As Deputy Director and later Interim Director, of the Arkansas Department of Pollution Control and Ecology, Dr. Blanz had responsibility for the Air, Water, Hazardous Waste, Technical Services, and Construction Grants Divisions. Duties included coordination with other state agencies, coordinating grants and loans for WWTP construction, representation before the General Assembly, and coordination with the Governor's office on a myriad of environmental issues. During his tenure he successfully gained federal delegation of the Air, Water, and Hazardous Waste Programs for Arkansas.

While with CH2M HILL, he managed projects ranging from hazardous waste permitting, hazardous waste facility design and closure, air permitting, NPDES

Permitting, solid waste permitting and construction, multi-media enforcement issues, municipal waste water treatment plant assessments and construction oversight, property transfer assessments, and water quality and air modeling.

His work on investigation, enforcement support, and permitting of hazardous waste sites includes Vertac Chemical Company in Jacksonville, Mountain Pine Lumber in Mena, Lockheed Martin in Camden, Ash Grove Cement in Foreman, US Navy site in Rocket City, West Virginia, US. Army Depot in Anniston, Alabama, and Eaker Air Force Base in Blytheville, Arkansas.

Dr. Blanz has considerable experience with the Water Quality Standards implementation and the NPDES permitting program. In addition to writing the first NPDES permits in Arkansas while at ADEQ, and later administering the program, he has was responsible for the preparation of NPDES permit applications for numerous clients in the private sector.

With BEES he continued to assist industrial and municipal clients with minor source air permitting, NPDES and No Discharge water permitting, stormwater permitting and SWPPP development, and hazardous and solid waste compliance issues and post-closure care certification. In addition, he has provided expert testimony and prepared depositions in several environmental related cases.

He is currently serving as Chief Technical Officer, Office of the Director, Arkansas Department of Environmental Quality and Acting Senior Operations Manager for the Office of Water Quality. In this (these) positions Dr. Blanz manages the NPDES permit engineering staff and coordinates staff among the various environmental media on interdisciplinary issues. He will soon step into the Acting Senior Manager for the Remediation and Enforcement programs under RCRA and the Regulated Storage Tank program until replacement staff can be located.

His military experience includes service in Germany and Vietnam as an infantry officer. In Vietnam he was a member of the 8th Regimental Combat Assistance Team and served as an infantry combat advisor to the South Vietnamese Army. He is an honor graduate of the U.S. Army Command and General Staff College. Following his active duty years he served in the Arkansas National Guard where he retired as a Lieutenant Colonel.

Membership in Professional Organizations

Arkansas Environmental Federation – Past President, Board Member, and Chair of the Water Committee
Arkansas Water Environment Association - Past President and State Director
Arkansas Council of Engineering Companies (Past Member)
Rotary Club of Little Rock (Past Member)
National Society of Professional Engineers-Arkansas Society (Past Member)
University of Arkansas Civil Engineering Academy (Inducted in 2007)
West Pulaski Public Water Authority Board – Past Chairman

Contact Information

Robert E. (Bob) Blanz
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72116-5317

Phone (501) 682-0959
[redacted]

Email: blanz@adeq.state.ar.us

Todd F. Brewer, PhD, PE

[redacted] [redacted]

PROFESSIONAL SUMMARY

Manager/Team Builder/Collaborator: ~13 years directing Water Quality Laboratory Operations:

- Managed staff of 15-25 management and union employees
- Developed/trained lab staff to function as technical consultants and skilled water quality analysts
- Developed strong relationships with internal customers such as Engineering and Field Operations
- Fostered collaborative working relationships with regulatory agencies

Skilled Engineer& Scientist:
- Compliance Planning for City Utilities and OKC Drinking Water
- Experienced analytical chemist and water quality researcher
- Professional Engineer (OK)
- Licensed W/WW Operator (OK/MO)

Experienced Teacher & Effective Speaker:
- Lectured (>100 credit hours) at University level 18^{+} years
- Instructor for Operator and Laboratory Certification Courses

WORK EXPERIENCE

May 2016 – Present: *Manager – Water Quality & Optimization*, City Utilities of Springfield, MO

- Manage re-organized workgroup, focusing on Water Quality Monitoring and Water Quality Field Operations (as detailed below from Nov 2009 – May 2016)
- Continue to represent CU as liaison with City and Greene County in Integrated Plan for the Environment

Apr 2014 – May 2016: *Manager – Water Quality Labs*, City Utilities of Springfield, MO.

- Maintain emphasis on providing excellent customer service in a safe, reliable, and responsible manner to enhance overall quality of life for the community
- *Continued direction of laboratory operations and staff* (as performed in 2009-14, please see below)
- Manage total staff of ≈ 25 union, non-union, and supervisory employees
- Prepare and manage annual budget of ≈ $2MM
- Direct operations/activities of the Water Measurement/Water Quality Operations workgroup, including:
  - Customer Service calls (water quality, pressure, meter concerns, site visits, etc.)
  - Meter shop operations and field testing of commercial meters
  - Distribution Water Quality Management & Flushing
  - Backflow/Cross-connection control program
  - New Main Disinfection
  - Aged meter program
  - Water Audits

Nov 2009 – Apr 2014: *Assistant Manager – Laboratories*, City Utilities of Springfield, MO.

- Directed laboratory staff and daily lab operations while fostering a culture of continuous improvement
- Ensured drinking water compliance with all State and Federal regulatory requirements
- Maintained all appropriate chemical and microbiological laboratory certification
- Prepared and Managed annual and long range laboratory budget (≈ $1.2MM)
  - Evaluate analytical needs and emerging technologies
  - Strategic planning of instrumentation acquisition/replacement
- Reviewed and approved monthly operational reports to Missouri Department of Natural Resources
- Represented City Utilities on Integrated Planning for the Environment Task Force with City and County
- Conceived and Directed treatment studies relative to overall improvement of finished drinking water

Nov 2009 – Apr 2014 (cont'd):

- Prepared Annual Consumer Confidence Report (CCR) for drinking water customers
- Directed Laboratory and Utility staff response to - and resolution of - water quality concerns and inquiries
- Trained Water and Power Production staff on corporate Emergency Response Plans & HAZWOPER
- Presented technical information orally and in writing to both technical and non-technical audiences

Aug 2010 – Present: *Lecturer, Civil & Environmental Engineering*, Missouri University of Science & Technology - Cooperative Engineering Program at MSU, Springfield, MO.

- Half-time appointment as Lecturer in Civil Engineering section of Cooperative Engineering Program
  - Teach courses related to Environmental Engineering, Water Treatment & Wastewater Engineering

Mar 2003 – Oct 2009: *Water Quality Lab Manager/Treatment Supervisor*, Oklahoma City Utilities Dept.

- Directed daily operations of the City Environmental Laboratory:
  - Maintained all appropriate certification for the City's Water & Wastewater Quality Laboratory
  - Chemical and microbiological analyses for drinking water regulatory compliance
  - Analysis of domestic wastewater & industrial wastewater pretreatment program samples
- Reviewed/Approved Monthly Reports for 3 Water Treatment Plants ~ 250 MGD production capacity
- Conceived and directed treatment studies relative to overall improvement of finished drinking water
- Technical resource on capital improvement projects (CIP) for drinking water:
  - ≈35MM$ Draper Water Treatment Plant Expansion/Improvement (90 to 150 MGD expansion)
  - 75 MGD expansion of Hefner Water Treatment Plant (from 75 to 150 MGD)

EDUCATION

Ph.D. Civil (Environmental) Engineering: University of Nevada, Reno - Reno, NV (1997).
Dissertation Title: *Photosensitized Oxidation of Sulfide and Cyanide Species in Aqueous Solution.*

M.S. Chemical Engineering: University of Tulsa - Tulsa, OK (1992).
Thesis Title*: Kinetics of Methanol Oxidation Over a Palladium Automotive Exhaust Catalyst*.

B.S. Chemistry, B.S. Mathematics: Northeastern State University - Tahlequah, OK (1989).

PROFESSIONAL LICENSURE & CERTIFICATION

- *Professional Engineer (PE) License # 22156* – Oklahoma State Board of Licensure for PE & LS
- *"A" Water Operator License #11777* – Missouri Department of Natural Resources
- *DS-III Water Distribution Operator License #11777* – Missouri Department of Natural Resources
- *Oklahoma Department of Environmental Quality – License #93427:*
  - Water Operator – A
  - Water Laboratory - A
  - Wastewater Laboratory - A

PROFESSIONAL AFFILIATIONS, HONORS AND AWARDS

- *City Utilities* – (2 time) H. Dean Miller Professional Achievement Award Recipient, 2014 & 2016
- Leadership CU – Competitive leadership/professional development program; Completed 2015-16
- *AWWA* - American Water Works Association

National AWWA Committees	*Missouri Section AWWA*
Organic Contaminants Control	Chair-Elect – Board of Directors
Emerging Water Quality Issues	Water Utility Council

- *Partnership for Safe Water* – PEAC Vice-Chair, Distribution Optimization Program, 2016-current
- *Chair* – Water Utility Council, Southwest Section AWWA, 2007-2009
- *Competitive Research Fellowship/Traineeship* – Department of Energy (DOE-EPSCoR), 1993-94
- *Rho Theta Sigma* (Academic Honor Society/Dean's Honor Roll, 4.0 Semester GPA)

Todd F. Brewer, PhD, PE **(405) 850-6279**

SELECTED PUBLICATIONS & PRESENTATIONS

Chlorate Formation in On-Site Hypochlorite Generators. Presented at the MO-AWWA Annual Conference, Tan-Tar-A Resort, March 2017. L. Kriem, R. Biagioni, and T. F. Brewer.

Risk Management – Regulatory and Public Health Considerations for Drinking Water Utilities, Webinar presented for AEGIS Insurance Loss Control Group, August 2016. T. F. Brewer.

Distribution System Water Quality Management: Disinfectant Residual Optimization, Presentation at the American Water Works Annual Conference and Exposition (ACE) Anaheim, CA, June 2015. T.F. Brewer

Partnership for Safe Water – Distribution Optimization Program: The Self-Assessment Process at City Utilities of Springfield, Missouri, Poster Presented at the AWWA Annual Conference and Exposition (ACE), Boston, MA June 2014. T. F. Brewer.

Distribution Optimization Program – Water Quality and Lessons Learned, Presented at Missouri Section American Water Works Association Annual Conference, Lake of the Ozarks, MO March 2013. T. F. Brewer.

Water Quality Monitoring, Lakes Management, and Treatment Strategies for Taste & Odor Control – One Utility's Perspective – Presented at Missouri Section, American Water Works Association Annual Conference, Lake of the Ozarks, MO March 26-28, 2012. T. F. Brewer.

Cyanobacteria Abundance and Toxin Production in a Drinking Water Supply Reservoir, Presented at National Association of Lake Mangers Society (NALMS) 2011 Annual Conference, Spokane Washington October 22-26, 2011. L. Reynolds, J. Havel. T. Brewer, and R. Rhodes.

Dynamics of McDaniel Lake in Springfield, MO, Presented at National Association of Lake Managers Society (NALMS) 2010 Annual Conference, Oklahoma City, OK, November 3-5, 2010. R. Gumucio, R. Aderhold, K. Adams, and T. Brewer.

Investigation of Endocrine Disruptor and Pharmaceutical Pollutant Occurrence in Oklahoma City Waters, Presented at Southwest Section, American Water Works Association Annual Conference, Shreveport, LA Oct 4-6, 2009. T.F. Brewer.

Strategic Screening of Endocrine Disruptors in Oklahoma City Source Waters, Presented at the Southwest Section, American Water Works Association Annual Conference, Springdale, AR Oct 8-10, 2007. C. Kowalik and T.F. Brewer.

Determination of Disinfectant Contact Time Using Tracer Studies, Presented at the Southwest Section, American Water Works Association Annual Conference, Oklahoma City, OK Oct 2-4, 2005. T.F. Brewer.

Initial Results of the SWAP Project for Northern Nevada. Presented at the CA-NV Section, American Water Works Association Spring Meeting, San Jose, CA, 2002 (with K.T. Gupta, J.G. Curtis, J. Restori, T.F. Brewer, and V.D. Adams. (This presentation was selected as the outstanding student paper of the conference.)

Meeting the Challenges of the New Arsenic Rule: Conventional Treatment of Surface/Groundwater Blends. *1st Place Poster Presentation at the American Water Works Association (AWWA) Annual National Meeting*, June 17-20, 2001 Washington, D.C. Brooke E. Long, Todd F. Brewer, V.D. Adams, and Paul Miller.

Arsenic Removal from Drinking Water using Sulfur Modified Iron (SMI). Presented at the CA-NV Section, American Water Works Association Spring Meeting, Monterey, CA, 2000 J.G. Curtis, J.M. Thomas, R.N. Annan, T.F. Brewer, B.E. Long, and V.D. Adams. (This presentation was selected as the outstanding student paper of the conference.)

Sensitized Photochemical Treatment of Dissolved Sulfides - Kinetic Analysis. *Proceedings of Pollution Control 97*, November 12-16, 1997, Bangkok, Thailand. T.F. Brewer, J.K Zelinska, J.G. Curtis, V.D. Adams, and E.J. Middlebrooks.

Mixture Effects and Methanol Oxidation Kinetics over a Palladium Monolith Catalyst. *I&EC Research*, v. 33, No. 3, pp. 526-533, 1994. T.F. Brewer, R.G. Silver, and M.A. Abraham.

Sensitized Photooxidation of Dissolved Sulfides in Water. *Critical Issues in Water and Wastewater Treatment: Proc. 1994 Nat'l ASCE Conference on Environmental Engineering*, Boulder, CO, July 1994. ASCE Publishing, New York. T.F. Brewer, V.D. Adams, and E.J. Middlebrooks.

SYLVIE M. BROUDER
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Department of Agronomy: Crops, Soils, and Environmental Sciences
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Academic Record.

B.A., Biology, 1985, Harvard University, Cambridge, MA
Ph.D., Ecology, 1993, University of California, Davis, CA
Postdoctoral Associate, Agroecology, 1993-1995, University of California, Davis, CA

Faculty/Professional Appointments

1995-2000	Assistant Professor, Agronomy Department, Purdue University
2000-2005	Associate Professor, Agronomy Department, Purdue University
1997-pres.	Director, Purdue University Water Quality Field Station
2005-pres.	Professor, Agronomy Department, Purdue University
2009-2013	Assist. to the Dean (25% FTE),College of Agriculture, for Agroecology Program Development
2012-pres.	Wickersham Chair of Excellence in Agricultural Research
2014-pres.	FAO/CGIAR Independent Evaluation Arrangement for CGIAR Research Project on Wheat

Memberships in Professional Societies and Organizations

American Society of Agronomy
Crop Science Society of America
Soil Science Society of America
American Association for the Advancement of Science
Council for Agricultural Science and Technology
Phi Sigma, Gamma Delta Chapter
Epsilon Sigma Phi, Alpha Lambda Chapter
Gamma Sigma Delta, Purdue University Chapter
Purdue University Cooperative Extension Specialists Association
Sigma Xi, Purdue University Chapter
Ecological Society of America

Awards and Honors Received (9 Fellowship, Scholarship, Merit & Publication Awards prior to 2005; 4 Educational/Extension Materials Awards from Professional Societies 2006 - present)

2004-2005	Faculty Fellow, Study in a Second Discipline, Dept. of Statistics, Purdue University
2005	Fellow, American Society of Agronomy
2008	Team Award, College of Agriculture, Purdue University
2009	Certified Senior Ecologist, Ecological Society of America
2010	Purdue University Spirit of the Land Grant Award for excellence across the tripartite Land Grant mission

2011 Fellow, National Academies *Keck Futures Initiative* Conference on Ecosystem Services
2012 Wickersham Chair of Excellence in Agricultural Research
2012-pres. Fellow, Cohort 8, Food Systems Leadership Institute

Professional Service to Science and Agriculture

US Agency for International Development: Technical consultant for USAID-USDA Research Priorities to help shape research priorities & set new agenda for agricultural research (Washington, D.C., Feb. 25-26 2010). Feed the Future Research Forum Group 9 Recorder and Conference Reporter on Research challenge II: Improve soil fertility, quality, and conservation (Washington, D.C. June 21 – 23, 2011). Board for International Food and Agricultural Development (BIFAD) Public Meeting on Globalization of University-USAID partnerships ~ invited presentation on Sustainable Intensification and panelist addressing the development of the new USAID Innovation Labs for established research priorities in IPM and Sustainable Intensification (Columbia, MO, March 14-15, 2013).

Independent Science and Partnership Council of the CGIAR: Commissioned review of Conservation Agriculture (CA) practice efficacy for Sub-Saharan Africa and South Asia. Sponsored in conjunction with an ISPC initiative to evaluate the role of conservation agricultural practices in meeting CGIAR system-level outcomes (7/2012 – present); project results *In Press* as lead article in special edition of Agriculture, Ecosystem, and the Environment.

FAO/CGIAR Independent Evaluation Arrangement (10 month Appt.): Review team member for CGIAR Research Project (CRP) on Wheat. Responsible for taking a lead role for the evaluation of the programme components on natural resource and crop management including assessing the WHEAT system-level Strategic Initiative 2 on sustainable wheat based systems and Strategic Initiative 3 on Nutrient – and water-use efficiency.

European Commission Joint Research Center on Science Advice to Policy: Invited expert for Foresight Study to identify useful European Union policy interventions affect 2030 global food security, contribution to 2nd Workshop on "Geography of Global Food Security."

US Nonprofits and Consortia facilitating science into policy: AGree (Agriculture research, education, extension transforming food and ag policy): 5 member expert working group tasked with setting national goals for agricultural production and environmental outcomes (April 2013 – present). Nicolas Institute for Environmental Policy: External peer review for Packard Foundation commissioned research synthesis to inform the California Air Resources Board in incorporating agriculture/GHG in their scoping reports, 2013; Technical consultant to Technical Working Group on Agricultural Greenhouse Gasses (T-AGG) as expert on N2O and methane reductions, 2010. Agricultural Conservation Innovation Center's Ad hoc Committee to Develop Insurance Programs for BMPs, 199;. Nitrogen Management Expert Panel, 1999.

Bill and Melinda Gates Foundation: Convening on "Perennial Grain Crops for Smallholder Farmers" invited expert to present/lead discussion on environmental considerations and ecosystem service tradeoffs for a potential Foundation investment in perennial grain development (Seattle Washington, Oct. 25-26, 2012).

Fostering Public Private Partnerships on Open Access Data: Developer/convener of (i) Special Symposium "Beyond File Cabinets and Field Notes: Extending the Lifecycle and Utility of Agronomic Data" (Inter. Meeting of the Amer. Soc. Agron.-Crop Sci. Soc. of Amer.-Soil Sci. Soc. of Amer. Oct. 21-24, 2012Cincinnati, OH) and (ii) follow-up

"Smarter Agriculture – A dialogue on critical data for agriculture," an invite-only, 2-d workshop for 70 "stakeholders" in open access data and the data value chain including research, Extension, industry and policy (Oct. 10-11, 2013, Potomac, MD). Participant in G-8 "International Conf. on Open Data for Ag (April 29-30, 2013). Provided written commentary to National Res. Council's open public meeting on needs/challenges of achieving open access data. Led Alliance of Crop, Soil and Environmental Sci. Soc. (ACSESS) Board Mtg discussion on service opportunities w/ open access data (Nov. 2, 2013). Currently serves on ACSESS201.1 – ACSESS Data Standards Task Force for developing data standards to facilitate open access data initiatives.

XVI and XVII International Plant Nutrition Colloquium: Co-Chair Plant Nutrition for Sustainable Development and Global Health, Session B on Nutrient Management for Sustainability and Productivity, (XVI, Aug. 26-30, 2009, Sacramento, CA), edit XVI Proceedings for publication, and Co-Chair Nutrient Cycling, Ecosystems, and Climate Change Session (XVII, Aug, 19-22, Istanbul, Turkey).

US Department of Energy: Research portfolio review for Bioenergy Technology Office's Sustainability and Feedstock Research investment. Serve on 5 member team tasked with thorough evaluation of success of funded projects in meeting BETO mandates and required metrics (April 2011 and May 2013 biennial review sessions).

US Federal Competitive Grants Programs: Panelist for (i) CSREES NRI Managed Ecosystems, 2003, 2005; (ii) NIFA AFRI Soil Processes Program, 2009; (iii) NSF Organism-Environment Interactions – Plants, 2012.

Professional Science Consortia (recent activities): (i) 15 Societies participating in the Climate Sciences Working Group: Climate Science Day to inform Members of Congress of scientific achievements and build relationships with the scientific community (Feb. 2013 and Jan. 2014); (ii) Alliance of Crop, Soil and Environmental Science Societies (ACSESS) w/ the American Association of Animal Sciences: Presenter and expert panelist for "Snack and Fact" Policy briefing program for US House Ag. Committee (April 22, 2013); (iii) ACSESS Committee to Co-Author Official Tri-Societies (ASA-CSSA-SSSA) "*Position Statement on Climate Change,"* Aug. 2010 – 2012.

Ecological Society of America Board of Professional Certification (BCP:) 7-member BCP administers the society's Certification Program and reviews/awards several ranks of professional certification (3-yr term, 2013 – present).

Journal of Global Food Security Editorial Advisory Board (EAB): Serving a 3-yr term on inaugural EAB (Jan 1, 2012-present).

Soil Science Society of America Journal Editorial Board: Associate Editor of Div. S-4 (Soil Fertility and Plant Nutrition) 2003 to 2009; Subcommittee: SSSAJ competitiveness 2003.

American Society of Agronomy: Div. A-8 (Integrated Agricultural Systems) Chair-Elect (2002), Incoming Chair (2003), Chair (2004); Annual Meetings Session Chair: Div. S-4 (1995); Div. S-8 (1997), and Div. S-4 (1999); Selection Committee for the Werner L. Nelson Award for Diagnosis of Yield Limiting Factors. 1997 to 1998 and 2002 to 2004; Chair Feasibility Committee for Information Guide for Wetlands Management of Agricultural Systems, ASA Monographs Committee

US North Central (NC) Region (NCR) Research/Education Committees: Purdue Univ./Indiana representative to (i) NCR-13 on Soil Testing and Plant Analysis, 1996 to 2009 (Member-at-large 2007); (ii) NC-218 on Characterizing N Mineralization, 1998 to 2006 (Member-at-large 1999, Secretary 2000, Chair 2001 to 2002); (iii) NC1032 on Characterizing active soil organic matter pools controlling soil N availability in maize-based cropping systems, 2006

to 2013; (iv) NCR-103 on Nontraditional Soil Additives, 1998-2006 (Chair 1999), and (v) NCR-180 on Site-Specific Management, 1997 to 2002.

Regional Extension-Industry Conference Planning: Kentuckiana Crop Production Seminar, Planning Committee 1996-2004; Indiana Program Director, 1998 to 2004; Seminar Chair, 1999, 2002 and 2003. North Central Extension-Industry Soil Fertility Conference. Conference Planning Committee, 1998; State Representative, 1998 to 2004.

Industry Advisory Boards: Indiana Plant Food Ag Chemical Association's Agribusiness Council and Knowledge Committee (1996-2004); University Advisory Board of Agriliance (formerly Farmland Industries), 1998-2005; International Plant Nutrition Institute (IPNI) Round Table / Advisory Committee for external review of IPNI goals and agendas, 2010. Indiana Soybean Alliance: Strategic Planning Committee, 2013.

Commodity Competitive Grant Programs: Proposal review for Wisconsin and California Fertilizer Research Programs – Reviews for scientific merit, recurring.

iPlant Collaborative: Genotype-to-Phenotype (iPG2P) Grand Challenge Project Plant Nutrition Working Group, 2010 – present.

US Department of Agriculture's Agricultural Research Service: Peer Review Panel for Office of Scientific Quality Review 201 Watersheds, Water Availability, and Ecosystems Restoration Program, 2006-2007

Commercial Soil Testing Industry: Serve on the Coordination of Official Methods of Soil Analysis Committee (S889), Soil Science Society of America, 1999 to 2002. Director of the Indiana Certification Program for Commercial Soil Testing Laboratories, 1997 - 2009. North American Proficiency Testing Program for Quality Assurance in Public and Private Laboratories: Steering Committee, 1996 to 1997; Proposal Committee, 1997, and appointed member of the Soil Science Society of America Ad-hoc committee, 1997.

Purdue University Service (recent/selected): Purdue Center for Global Food Security, Executive Steering Committee (2013 – present); Censure and Dismissal Committee, Chair (2012 – present); Purdue Water Community (PWC) Executive Committee Member (2010 – present); Ecological Sciences and Engineering Interdisciplinary Graduate Program, Governance Committee (2008 – present). Purdue University Water Quality Field Station Core Facility, Director (1998 – present).

Research Interests / Expertise, Education &Outreach, National / International Agenda Development & Synergistic Activities

1. ***Research Skills and Interests:*** Design/implementation/statistical analysis of field and controlled environment experiments on nutrient budgets and plant-soil nutrient cycling process in crop plants including sampling strategies and designs for spatio-temporal considerations, environmental C and N losses and crop nutrient use efficiency. Evaluation of agroecosystem viability / sustainability with emphasis on air, soil and water quality ecosystem services. Examination of rooting dynamics, the root-soil interface and root/shoot ecophysiology and linkages to genetic basis of abiotic stress tolerance. Multivariate statistical approaches to analysis of environmental data sets.
2. ***Director of the Purdue University Water Quality Field Station (WQFS) Core Facility:*** Direct research activities at a multi-user, in-field laboratory dedicated to the study of C and N cycling in agro-ecosystems. Pursue/acquire extramural funds to maintain base facility operations and manage the accruing, core database. Assist other researchers in mining data from the long-term database associated with this facility and foster numerous interdisciplinary projects focusing on relationships between nutrient cycling and agricultural

sustainability with colleagues representing a broad array of disciplines and including field-landscape-modeling for landscape optimization. Preserve and curate core database including development of protocols and policy for on-going, open-access publication. On-going research is a designated Affiliated Project of the North American Carbon Program.

3. ***Open Access Data:*** Advocate for development and broad adoption of controlled vocabularies, data and meta-data standards for describing agronomic data and that of related/collaborating disciplines including: (i) conducting pilot projects in collaboration with Purdue University Research Repository on workflows and tools for seamless agronomic data deposition and open access publishing; (ii) convening and actively participating in conferences and working groups addressing opportunities, educational needs and barriers to stakeholder (scientist, ag industry professional, farmer) participation in the data value chain, (iii) assisting librarians and information scientists in development of new curricula for data literacy and the practice of data-enabled agricultural management, and (iv) promoting reuse of data from long-term research facilities including the WQFS.
4. ***Evidence-based Agriculture and Extension***: Increase rigor and relevance of extension programming through application of systematic (quantitative) reviews (SR) with meta-analysis as a robust/transparent model for translation of the rapidly accruing empirical research results into evidence-based management and policy contextualized to biophysical and socio-cultural conditions. Develop a collaborative infrastructure modeled on the Cochrane Collaborative for evidence-based medicine including (i) educational modules for conducting high quality SRs and meta-analytical techniques, (ii) data repositories for SR protocols and extracted SR data to permit cumulative SRs on key questions, and (iii) workflows, tools and policies for acquiring and including non-traditional (e.g. farmer-, consultant- or industry-originated) data with research data in the development farm- or site-/location-specific recommendations.

Professional Publications for Peers (Peer-reviewed articles, book chapters, datasets, etc.)

1. Trybula, E., Raj, C., Burks, J., Chaubey, I. Brouder, S.M., Volenec, J. Perennial rhizomatous grasses as bioenergy feedstock in SWAT: parameter development and model improvement. GCB Bioenergy. *In press*.
2. Brouder, S.M., H. Gomez-McPherson. 2014. The impact of conservation agriculture on smallholder agricultural yields: A scoping review of the evidence. *In* special issue "Evaluating conservation agriculture for smallholders in developing countries."Agriculture, Ecosystems and Environment. http://dx.doi.org/10.1016/j.agee.2013.08.010
3. Brouder, S.M., and R.F. Turco. Soil Nitrogen and Carbon Cycling. Encycl. of Natural Resources. Ed. Y.Q. Wang. Taylor and Francis Encyclopedia Program. *In Press.*
4. Volenec, J.J. and S.M. Brouder. 201x. Nutrient Deficiencies and Toxicities. In. L.H. Rhodes and D. Sumac (eds). Compendium of alfalfa diseases and pests. Am. Phytopathological Soc., Minneapolis, MN. 14pp. *In press.*
5. Brouder, S.M., J.J. Volenec. 2013. Open Access Data: A Federal Mandate and Agriculture's Opportunity. Members Forum, CSA News Pp. 26-28, Dec. 2013, doi: 10.2134/csa2013-58-12-14
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Invitational Papers Presented (last 5 yrs; 46 prior to 2009)

47. Brouder, S.M. …a baseball allegory for Extension: What does it take to be the source of unbiased knowledge in a data-rich environment? Smarter Agriculture Workshop. Oct. 10-11, Potomac, MD.
48. Volenec, J.J. R.B. Mitchell, D. Laird, D.K. Lee, C. Rosen, S.M. Brouder, R.F. Turco, E. Heaton, K.J. Moore, I. Chaubey, J. Lamb, and M. Casler. 2013. Evaluating perennial grasses for biomass production in diverse cropping systems in the Central United States (cenUSA). Am. Assoc. Industrial Crops. Oct. 14-16, Washington DC.
49. Brouder, S.M. A cropping systems perspective on producing feed and fuel (and food and fiber). Snack and Facts Congressional Briefing to House Ag Committee, 1300 Longworth House Office Building, Washington, DC April 22,
50. Brouder, S.M. Sustainable Intensification. Board for International Food and Agricultural Development (BIFAD) Public Meeting, March 14-15, Columbia, MO.
51. Brouder, S.M. 2012. Environmental considerations & ecosystem service tradeoffs. Invitation only Convening on "Perennial Grain Crops for Smallholder Farmers" Bill and Melinda Gates Foundation, Seattle Washington, Oct. 25-26, 2012.
52. Brouder, S.M., H. Gomez-McPherson. 2012. The impact of conservation agriculture and agricultural yields: A review of the evidence. Invitation only workshop on "The role of conservation agriculture and associated soil-based technologies in achieving CGIAR system-level outcomes."
53. Volenec, J.J., R. Mitchell, S.M. Brouder, R.F. Turco, and I.Chaubey. Sustainable Feedstock Production. cenUSA Annual Bioenergy meeting. Lincoln, NE. August 7-9.
54. Brouder, S.M. 2012. Field-Scale K and P fluxes in bioenergy crops: Theoretical energy yield and management implications. 12th International Symposium on Management of

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55. U.S. DOE Biomass 2012: Confronting challenges, creating opportunities. Sustaining the commitment to bioenergy. Consultant for DOE on panel composition and discussions addressing "Integrating bioenergy crops into the landscape" Invited Purdue panel representation by J.J. Volenec for project team (S.M. Brouder, I. Chaubey, and B. Gramig). July 10-11, 2012. Washington, DC
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1. Purdue Crop Diagnostic Training and Research Center. Corn and Soybean Field Guide, 2014 Edition (Contibutors: Brouder, S.M., J.J. Camberato, S.N. Casteel, T. Creswell, J. Faghihi, C.K Gerber, B.C. Joern, W.G. Johnson, C.H. Krupke, T.R. Legleiter, J.S. Loven, R.L. Nielsen, J.L. Obermeyer, G.E. Ruhl, K.A. Wise). ID-179. Pp. 318.

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35. Reetz, H., S.M. Brouder, and J. Johnson. 1998. Negligence of Potassium in Soybeans: Are You Guilty? News and Views. Potash and Phosphate Inst. Pp. 4.Brouder, S.M., J.E. Hill, J.F. Williams, S.C. Scardaci, L.S. Whent, E. Knight, S.R. Goldman-Smith, and T.E.C. Kraus. 1996. California rice grower survey: 1993 straw management decisions and practices. Agronomy Progress Report No. 252. University of California Agricultural Experiment Station. Pp. 9.

Other Technical Publications and Published Proceedings (57; 1998-present): Non-refereed research conference proceedings and project fact sheets (31) and non-refereed guides for farmers and agricultural industry professionals (26); details on request.

Published Abstracts (last 5 yrs; 97 prior to 2009)

98. Raj, C., I.C. Chaubey, S.M. Brouder, J.J. Volenec, and K. Cherkauer. 2013. Watershed scale environmental sustainability analysis of biofuel production in changing land use and climate scenarios. AGU Annual Meetings, Dec. 9-13, San Francisco, CA.
99. Rivera Burgos Sr., L. A, S.M. Brouder, J.J. Volenec, and G. Ejeta. 2013. Development of brown midrib sweet sorghum as a biomass crop for ethanol production. Abstract 367-50. Inter. Meeting of the Amer. Soc. Agron.-Crop Sci. Soc. of Amer.-Soil Sci. Soc. of Amer. Nov. 2-6, Tampa, FL.
100. Issa, S., S.M. Brouder, J.J. Volenec, T.S. Murrell, and I. Chaubey. 2013. An in-depth study of growth, stover and grain predictions of Hybrid-Maize and CERES-Maize in rainfed conditions in northwestern Indiana. Abstract 198-2. Inter. Meeting of the Amer. Soc. Agron.-Crop Sci. Soc. of Amer.-Soil Sci. Soc. of Amer. Nov. 2-6, Tampa, FL.
101. Long, M.K., J.J. Volenec, and S.M. Brouder. 2013. Theoretical ethanol yield for potential bioenergy sorghum genotypes of differing compositions. Abstract 373-9. Inter. Meeting of the Amer. Soc. Agron.-Crop Sci. Soc. of Amer.-Soil Sci. Soc. of Amer. Nov. 2-6, Tampa, FL. https://scisoc.confex.com/crops/2013am/webprogram/Paper80060.html
102. Volenec, J.J. R.B. Mitchell, D. Laird, D.K. Lee, C. Rosen, S.M. Brouder, R.F. Turco, E. Heaton, K.J. Moore, I. Chaubey, J. Lamb, and M. Casler. 2013. Evaluating perennial grasses for biomass production in diverse cropping systems in the Central United States (cenUSA). Proc. Am. Assoc. Industrial Crops. (in press).
103. Volenec, J.J, S.M. Brouder, S. Lissbrant, W.K. Berg and P. Woodson. 2013. Cluster analysis in forms physiological and species-specific responses of alfalfa, maize and switchgrass to P and K nutrition. Int. Plant Nutrition Coll., Aug. 18-22, Istanbul, Turkey.
104. Turco, R.F., P. Chivenge, J.J. Volenec, and S.M. Brouder. 2012. Opening our file cabinets and field notes with meta-analysis: An approach to overcome the soil C sequestration data void. Abstract 179-3. Inter. Meeting of the Amer. Soc. Agron.-Crop Sci. Soc. of Amer.-Soil Sci. Soc. of Amer. Oct. 21-24. Cincinnati OH. http://scisoc.confex.com/scisoc/2012am/webprogram/Paper74076.html

105. Trybula, E., I. Chaubey, J. Frakenberger, S.M. Brouder, and J.J. Volenec. 2012. Quantifying ecohydrological impacts of perennial rhizomatous grasses on tile discharge. Abstract 297-9. Inter. Meeting of the Amer. Soc. Agron.-Crop Sci. Soc. of Amer.-Soil Sci. Soc. of Amer. Oct. 21-24. Cincinnati OH. http://scisoc.confex.com/scisoc/2012am/webprogram/Paper75175.html
106. Dierking, R., J.J. Volenec, and S.M. Brouder. 2012. The potential of maize and sorghum biomass grown on marginal sites. Abstract 247-5. Inter. Meeting of the Amer. Soc. Agron.-Crop Sci. Soc. of Amer.-Soil Sci. Soc. of Amer. Oct. 21-24. Cincinnati OH. http://scisoc.confex.com/scisoc/2012am/webprogram/Paper72548.html
107. Long, M., J.J. Volenec, and S. M. Brouder. 2012. Nitrogen impacts on the yield and cell wall composition of contrasting sorghum lines used for biomass. Abstract 383-8. Inter. Meeting of the Amer. Soc. Agron.-Crop Sci. Soc. of Amer.-Soil Sci. Soc. of Amer. Oct. 21-24. Cincinnati OH. http://scisoc.confex.com/scisoc/2012am/webprogram/Paper75148.html
108. Navarette, R., and S.M. Brouder. 2012. Spatial-Temporal Assessment of Soil Exchangeable K Concentrations As Affected by K Applications in a Long Term Experiment. Abstract 277-7. Inter. Meeting of the Amer. Soc. Agron.-Crop Sci. Soc. of Amer.-Soil Sci. Soc. of Amer. Oct. 21-24. Cincinnati OH. http://scisoc.confex.com/scisoc/2012am/webprogram/Paper72196.html
109. Burks, J., S.M. Brouder, J.J. Volenec. 2012. Seasonal Accumulation and Partitioning of Carbon- and Nitrogen-Containing Compounds in Perennial Bioenergy Crops. Abstract 99-4. Inter. Meeting of the Amer. Soc. Agron.-Crop Sci. Soc. of Amer.-Soil Sci. Soc. of Amer. Oct. 21-24. Cincinnati OH. http://scisoc.confex.com/scisoc/2012am/webprogram/Paper72902.html
110. Brouder, S.M., P. Woodson, L. Bowling, R. Turco and J. Volenec. 2011. Yield potential, water and N requirements of non-food biofuels. 2011 *In* Proceedings of the Water for Food Conference, Lincoln, NE, May 1 – 4.
111. Butler, R.A, S.M. Brouder, W.G. Johnson K. Gibson, ,. 2012. Use of Cover Crops to Suppress Weeds in Organic Tomato Production. 52nd Meeting of Weed Science Society of America, Waikoloa, Hawaii, Feb. 6-9, 2012.
112. Brouder, S.M., R. Turco, J. Volenec, G. Ejeta, D.R. Smith, L. Bowling, I. Chaubey, B. Gramig. Nitrogen partitioning and utilization in bioenergy cropping systems. *In* Proceedings of the 6th Frontiers in Bioenergy Conference & US-Brazil Symposium on Sustainable Bioenergy. West Lafayette, IN, May 15 -18 2011.
113. S.M. Brouder and J.J. Volenec. 2012. Impact of Climate Change on Crop Nutrient and Water Use Efficiencies: What we know we don't know. Plant Growth, Nutrition and Environment Interactions Conf., University of Veterinary Medicine, Vienna, Austria. Feb 18 – 21. Plenary
114. J. Volenec and S.M. Brouder. 2012. Nutrient Use in Bioenergy Cropping Systems. Plant Growth, Nutrition and Environment Interactions Conf., University of Veterinary Medicine, Vienna, Austria. Feb 18 – 21.
115. Brouder, S.M. 2011. Alternatives to Traditional Approaches to Fertilizer Recommendations. Symposium on Development of Soil-Test Based Recommendations: Historical Perspectives, Current Issues, Future Directions. *In* Proceedings of the ASA-CSSA-SSSA Annual Meetings, San Antonio, TX, Oct. 16 – 19, 2011. http://a-c-s.confex.com/crops/2011am/webprogram/Paper63885.html.

116. Smith, D.R., D. Bucholtz, S. Brouder, J. Volenec, R. Turco, G. Ejeta. 2011. Greenhouse gas emissions from traditional and biofuel cropping systems. Symposium on Crop Influences on GHG Emissions and Soil C Sequestration. *In* Proceedings of the ASA-CSSA-SSSA Annual Meetings, San Antonio, TX, Oct. 16 – 19, 2011. http://a-c-s.confex.com/crops/2011am/webprogram/Paper64779.html.
117. Woodson, P., S. Cunningham, P. Murphy, S. Brouder, J. Volenec. 2011. Influence of potassium and phosphorus on yield and composition of switchgrass. *In* Proceedings of the ASA-CSSA-SSSA Annual Meetings, San Antonio, TX, Oct. 16 – 19, 2011.http://a-c-s.confex.com/crops/2011am/webprogram/Paper65191. html.
118. Burks, J.L., J. Volenec, S. Brouder. 2011. Seasonal cycling and partitioning of N, P, and K in perennial bionergy crops. *In* Proceedings of the ASA-CSSA-SSSA Annual Meetings, San Antonio, TX, Oct. 16 – 19, 2011. http://a-c-s.confex.com/crops/2011am/webprogram/Paper64585.html.
119. Navarrete-Gonchozo, R.J., S. Brouder. 2011. Assessment of K fertilization and residual K fertilizer on yield response and soil fertility in a long-term experiment. In Proceedings of the ASA-CSSA-SSSA Annual Meetings, San Antonio, TX, Oct. 16 – 19, 2011. http://a-c-s.confex.com/crops/2011am/webprogram/Paper66455.html.
120. Brouder, S.M. 2011. Comparative Agro-ecological Performance of Perennial and Annual Biomass Systems: Metrics and Data Workflows. *In* Proceedings of the China-US 2011 Joint Symposium on Global Sustainability Issues in Energy, Climate, Water and Environment. West Lafayette, IN, Sept. 26 – 29.
121. Brouder, S.M. 2011. Minimum plant and soil metrics for characterizing Environment (E) x Management (M) impacts on crop performance. *In* Proceedings of the Yield Gap Assessment Workshop, Beijing, China, Aug. 31 – Sept. 2.
122. Brouder, S.M., and J.J. Volenec. 2010 Environmental impacts of using annual crops for biofuel. ASA-CSSA-SSSA International Meetings, Oct. 31 to Nov. 4, 2010. Presentation No. 250-1. http://a-c-s.confex.com/crops/2010am/webprogram/Paper57723.html.
123. Brouder, S.M., and J.J. Volenec. 2010. Grain and dual purpose production: system efficiencies, limitations, and potential. ASA-CSSA-SSSA International Meetings, Oct. 31 to Nov. 4, 2010. Presentation No. 124-2. http://a-c-s.confex.com/crops/2010am/webprogram/Paper58277.html.
124. Burks, J, J.J. Volenec, and S.M. Brouder. 2010. Cycling Dynamics in Perennial Bioenergy Crops. Agron. Abstracts. Poster No. 56-14 N. http://a-c-s.confex.com/crops/2010am/webprogram/Paper59353.html.
125. Brouder, S.M., and J.J. Volenec. 2010. Greenhouse gas emissions and pelicans: Ecological accounting in bioenergy cropping systems. China-US 2010 Joint Symp. on Energy, Ecosystem, and Environmental Change. Beijing, China. September 22-24.
126. Volenec, J.J., S.M. Brouder, and R.F. Turco. 2010. Agroecological considerations when growing biomass. China-US 2010 Joint Symp. on Energy, Ecosystem, and Environmental Change. Beijing, China. September 22-24.
127. Brouder, S.M., R.F. Turco, and J.J. Volenec. 2010. Nitrogen use efficiency in bioenergy cropping systems. 2nd China-US Workshop on Biotechnology of Bioenergy Plants. Beijing, China. September 19-21.
128. Volenec, J.J. and S.M. Brouder. 2010. Water-use efficiency in biomass cropping systems. 2nd China-US Workshop on Biotechnology of Bioenergy Plants. Beijing, China. September 19-21.

129. Hernandez-Ramirez, G. and S.M. Brouder. 2010. Reactive nitrogen cycling and potential ecosystem services trade-offs in an eastern Corn Belt soil. In Soil Solutions for a Changing World, Proceedings of the 19th World Congress of Soil Science, Aug. 1-6, 2010, Brisbane, Australia.
130. Ale, S., L.C. Bowling, M.A Yosef, S.M. Brouder, J.R. Frankenberger. 2010. Potential watershed nitrate load reduction with drainage water management under varied implementation options. ASABE 9th International Drainage Symposium held w/ joint CIGR & CSBE/SCGAB Proceedings. June 13 -16, Quebec, CA.
131. Volenec, J.J., S.M. Brouder, R.F. Turco, G. Ejeta, and D. Smith. 2010. Impact of water and nitrogen on biomass production and ecosystem services. Frontiers in Bioenergy, Purdue University, May 24-25.
132. Orr, M.-J., S.M. Brouder, J. Volenec, M. Bischoff, R. Turco. 2009. Unintended consequences of biofuel feedstock production on carbon and nitrogen cycle dynamics mediated by soil biology. ASA-CSSA-SSSA International Annual Meetings, Pittsburg, PA, Nov. 1 – 5, 2009. http://a-c-s.confex.com/crops/2009am/webprogram/Paper54550.html.
133. Brouder, S.M., J.J. Volenec, R. Turco, D.R. Smith, G. Ejeta. 2009. Ecosystem services of existing and candidate bioenergy cropping systems: Critical research questions. China-U.S. Workshop on Climate-Energy Nexus sponsored by the China-U.S. Joint Research Center for Ecosystem and Environmental Change. Nov. 11-13, Oakridge National Lab, Oakridge, TN.
134. Brouder, S.M., J.J. Volenec, R. Turco, D.R. Smith, G. Ejeta. 2009. Comparative productivity potential, environmental services and C, N, and water economies of candidate biofuel systems. Second Generation Biofuels Symposium 2009. West Lafayette, IN, May 18-19, 2009.
135. Orr, M.-J., S. Brouder, J. Volenec, M. Bischoff, and R. Turco. 2009. Unintended consequences of biofuel feedstock production on nitrogen cycle dynamics mediated by soil biology. Second Generation Biofuels Symposium 2009. West Lafayette, IN, May 18-19, 2009.
136. Brouder, S.M., J.J. Volenec, R. Turco, D.R. Smith, G. Ejeta. 2009. What we don't know about nutrient/nitrogen use efficiency in biofuel cropping systems. 6th Annual Bioenergy Feedstock Symposium. Urbana-Champaign, IL, Jan. 13-14, 2009.

Funded Research, Extension and Teaching Projects: (active over last 5 yrs)
(46 funded projects totaling 5.4M active 1996 – 2008 including: 14 federal and state contracts totaling 3.9M; 17 industry and private foundation awards, contracts and gifts totaling 1.0M, and 15 Purdue University competitive research awards and fellowships totaling 0.5M. Federal and state agencies included the Natural Resource Conservation Service, the Indiana Dept. of Environmental Management, the North Central Sustainable Agriculture Research and Education program, the US Department of Agriculture, the US Environmental Protection Agency, and the National Science Foundation. Private industry, commodity groups and foundations included the United Soybean Board, the Indiana Soybean Board, New Holland, IMC Agribusiness, Emerge, Agrium, the Potash and Phosphate Institute, the National Pork Producers, Georgia Pacific, Pheasants Forever, and the Boeing Corp.)

47. USDA NIFA AFRI. cenusa bioenergy, Coordinated Agricultural Project (CAP) in Bioenergy. Purdue Univ. sub-award from IA State Univ. (lead institution). J. Volenec (PU lead PI), S.M. Brouder, R. Turco, C. Chaubey, K. Johnson, P. Murphy, K. Orvis, N.

Carroll, N. Olynk, C. Martin, K. Ileleji, C. Martin (PU Co-PIs). 2011 – 2016. $3,700,000 (PU) of $25 Million (total award to 6 institutions). Fully Integrated.

48. USDA/DOE North Central Sungrant Program. Optimization of Biomass Productivity and Environmental Sustainability for Cellulosic Feedstocks: Land Capability and Life Cycle Analysis. S.M. Brouder, R.F. Turco, J.J. Volenec, B. Gramig, D. Allen (Mendel Biotechnology, Inc.), and W. Tyner. 2010 – 2013. $875,000. ($700,000/$175,000 sponsor/required match.) Integrated.
49. NIFA National Needs Fellowship. Graduate education to meet the agro-ecosystem services (AES) challenge. 2010 – 2015. $236,000. L.S. Lee, S.M. Brouder, J.J. Volenec, K.D. Gibson, L.S. Prokopy. Education.
50. DOE. Watershed scale optimization to meet sustainable cellulosic energy crop demand. I. Chaubey (PI), L. Bowling, S.M. Brouder, K. Cherkauer, B. Engel, J. Frankenberger, R. Goforth, B. Gramig, P. Murphy, J.J. Volenec (Co-PIs). 2010 – 2014. $1,991,177 (w/ match); $1,592,385 (cost to sponsor). Research and Extension
51. International Plant Nutrition Institute. Global Maize Initiative. J.J. Volenec, PI, S.M. Brouder, T. Vyn, R.F. Turco, B.C. Joern, R.L. Nielsen, and R.F. Turco Co-PIs. 2008 – 20XX. $60,000. Integrated/
52. Potash Corporation of Saskatchewan and the Mosaic Company. Graduate Fellowship in Potassium Research. $400,000. 2002 – present. S.M. Brouder, C. Beyrouty, J.J. Volenec, T. Vyn and B.C. Joern, CoPIs.
53. International Plant Nutrition Institute. Gift funds to support research on productivity and environmental impacts of bioenergy crops. 2008-20XX . $47,500. J.J. Volenec, S.M. Brouder, R.F. Turco.
54. NSF REU Program. Purdue REU Site: Tackling Some of the Grand Challenges for Engineering. I. Hua, PI, S.R. Hoffman, J.W. Sutherland, R. Turco, S. Brouder, L. Nies, E.C. Blatchley, M.T. Harris, F. Zhao, T. Harton, Co-PIs. 2010 – 2013. Education.
55. Purdue University-Moi University (PUMU) Partnership Seed Grants. Internationalizing soil and crop science curricula at Purdue and Moi Universities. D.G. Schulze, L. Unruh-Snyder, B. Joern, S. Brouder, G. Van Scoyoc, P. Owens, D.E. Stott. (AGRY) w/ W. Ng'etich, J.R. Okalebo, C.O. Othieno, P. Kisinyo, C. Serrem (Moi University). $7000. Education.
56. USAID ISE Program. A Sub-Saharan Context for Internationalizing Crop, Soil, and Environmental Science Curricula. Schulze, D.G. (PI), G.E. Van Scoyoc, L.U. Snyder, B. Joern, P.R. Owens, S.M. Brouder, M. Crawford, H. Rowe, N. Freeman, D. Stott, W. Ng'etich, P. MnKeni 2010 – 2013. $150,000. Education
57. USDA NIFA-AFRI Long-term Sustainable Agroecosytem Program-Sustainable Agricultural Systems (LTAP-SAS). Environmental and Productivity Benefits of Ecological Intensification of U.S., Maize-based Cropping Systems. S.M. Brouder, J.J. Volenec, R.F. Turco, T.S. Murrell, B. Gramig, L. Prokopy, H. Zhang, T. Vyn, C. Gerber. 2009 - 2013. $200,000. Integrated
58. USDA NRI Managed Ecosystems Program. Ecological services of agro-biofuels: Productivity, soil C storage and air and water quality. 2008 – 2013. $399,999. S.M. Brouder, PI, J.J. Volenec, R.F. Turco, G. Ejeta, and D.R. Smith, CoPIs. Research.
59. USDA Special Programs (Washington) Project. National Test Facility for Aerospace Fuels and Propulsion. $1,360,000. D. Stanley, D. Lopp, J.M. Thom (Aviation Technology), S.M. Brouder (Agronomy), S. Heister (Aeronautic and Astronautic Engineering), G. Shaver (Mechanical Engineering), R. Steuterman (Energy Center). Integrated.

60. NIFA/USDA Special Programs (Washington) Project. Integrated economic, environment, and technical analyses of sustainable biomass energy systems. (FY09 & FY10) $351,263 (direct costs). W. Tyner, S.M. Brouder, L. Lee, B. Engel. Integrated.
61. NIFA/USDA Special Programs (Washington) Project. Midwest Center for Bioenergy Grasses Phase I (FY09 & FY10). $351,236 (direct cost). N. Carpita, PI, S.M. Brouder, D. Buckmaster, G. Ejeta, K. Ileleji, N. Mosier, J.J. Volenec, C.R. Weil. Bioenergy group represents cropping system component. Integrated.
62. College of Agriculture, Mission Oriented Grant. Impact of Potassium and Phosphorus Nutrition Biomass Yield and Herbage Composition of Switchgrass Grown for Biofuels. 2008-2009. $24,680. J.J. Volenec, PI, S.M. Brouder, K.D. Johnson and B.C. Joern, CoPIs. Integrated.
63. College of Agriculture, Mission Oriented Grant. Comparative biofuel productivity potential and carbon, nitrogen, and water economies of Switchgrass, *Miscanthus*, Maize and a low-input, Big Bluestem-dominated prairie. 2008 – 2009. $25,000. S.M. Brouder, PI, J.J. Volenec, R.F. Turco and D.R. Smith, CoPIs. Integrated.
64. Showalter Trust. Comparative biofuel productivity potential and carbon, nitrogen and water economies of switchgrass, Miscanthus, maize and a low-input, big bluestem-dominated prairie. 2008 – 2009. $75,000. S.M. Brouder, PI, R. Turco, J.J. Volenec, D.R. Smith, CoPIs.
65. Mary S. Rice. Rediscovering the science base for soil specific K recommendations. $12,000. Submitted 2007 - 2009. S.M. Brouder. Outreach.

Students and Post Doctorates Advised

Externally funded undergraduates in summer research programs (2011 – present): 6 NSF-funded Research Experience for Undergraduate summer fellows; 1 Summer Research Opportunity Program fellow.

Graduate students under the direct supervision of Dr. Brouder:

Jason Wells	M.S.	(1998) co-advised w/ Dr. C. Nakatsu; Non-thesis option.
Alexis Heldt	M.S.	(1999); *Cover crop impacts on corn and soybean N acquisition and yield.*
Brenda Hofmann	M.S.	(2002); *Influence of tile spacing on crop yields, nitrate concentrations and nitrogen flux in drainage water.*
Adam Brock	M.S.	(2004); *Approaches to variable rate nitrogen management in the eastern corn belt*
Fabian Fernandez	Ph.D.	(2006) co-advised w/ Dr. C. Beyrouty; *Potassium acquisition by soybean as affected by stratified soil potassium, growth stage, and soil water content.*
Matt Ruark	Ph.D.	(2006); *Fate of dissolved organic carbon in tile drained agroecosystems.*
Jamalyn Evans	M.S.	(DNF) co-advised w/ Dr. J. Volenec; *Impact of phosphorus and potassium on alfalfa root morphology.*
Guillermo Hernandez	Ph.D.	(2007); *Carbon sequestration in corn under four management systems: Greenhouse gas fluxes and soil organic carbon fractions*

Brad Carter	M.S.	(2007) co-advised w/ Dr. E. Kladivko; *Effects of controlled drainage on crop growth, soil quality, and nitrate loading in watersheds.*
Andrea Bongen	M.S.	(2007); *Metals in the Indiana environment.*
Sofia Lissbrant	Ph.D.	(2008); co-advised w/ Dr. J. Volenec; *Innovative strategies for determining critical nutrient levels for alfalfa performance*
Jennifer Burks	Ph.D.	(2013); co-advised w/ Dr. J. Volenec. *N cycling in candidate biofuel crops*
Monique Long	Ph.D.	(expected 2014); *Physiology of N use efficiency in sorghum*
Ronald Navarrete	Ph.D.	(expected 2013); *Potassium availability and use efficiency in maize/soybean production systems*
Salah Issa	M.S.E.	(2012); *Predicting maize productivity potential in humid regions of the U.S. Corn Belt with Hybrid Maize*
Patrick Woodson	M.S.	(2011) co-advised w/ Dr. J. Volenec; *Switchgrass productivity potential on marginal soils*
Amanda Montgomery	M.S.	(expected 2014); co-advised w/ I. Chaubey; *Water quality impacts of bioenergy crops*
Elizabeth Trybula	Ph.D.	(expected 2015); *Comparative nutrient cycling of maize and sorghum across water availability gradients in South Africa and the US*

Service on graduate student advisory committees: 19 M.Sc./M.S.E and 20 Ph.D. students in the following departments/programs: Agronomy, Agricultural Economics, Agricultural Engineering, Civil Engineering, Forestry and the Ecological Science and Engineering Integrated Graduate Program.

Postdoctoral employees under Dr. Brouder's supervision: Frederick Wanjau (1999 – 2001); Katerina Dontsova (co-advised with T. Vyn: 2002), Pauline Nhamo (2010 – 2012), Ryan Dierking (2011 – present). Mary-Jane Orr (2012 – present). Visiting Scholars: Dr. X. Fang (2002 – 2003) from Chinese Academy of Sciences.

Classroom Teaching

AGRY 515 Plant Mineral Nutrition: Developed / instructor of record for 3-credit dual-level course that has been taught every other year beginning fall semester of 1996. The course is designed for students in the biological and agricultural sciences who require a comprehensive understanding of mechanisms controlling nutrient availability in soils, and nutrient assimilation and physiological function in higher plants. Diagnostic symptoms for nutrient imbalances are linked to the assimilation and transport processes and functions of minerals in plant metabolism. The course provides students with a broad understanding of the ecological principles and genetic aspects of mineral nutrition, including disease resistance, interactions with microbial communities in the rhizosphere, genetic variation in uptake- and use-efficiency, competition, and adaptation to deficiencies and toxicities.

Contributions to other courses and curriculum:

ASM 322 Technology for Precision Agriculture and related text: (3 cr): A 3-module, multi-disciplinary course that is team-taught by Agricultural Engineering, Agronomy and Agricultural

Economics faculty. Developed the portion of the curriculum pertaining to soil sampling and analysis, and plant nutrient management – a 2-wk module including lectures on the heterogeneous nature of soil chemical and physical properties, and on the theory and practice of fertility recommendations. The class includes discussions and lab exercises that explore the concept of scale of management.

AGRY 399 Undergraduate Directed Projects (3 cr): Dr. Brouder supervises undergraduate credit experiences in the soil fertility, plant nutrition and water quality. Projects are components of field research projects, and they typically combine field, laboratory, data handling / manipulation and writing experiences

AGRY 598: Ecosystem Services: Charting a Path to Sustainability (1 cr): Participatory seminar emphasizing ecosystem services as a framework for decision making in natural resource / land use and stewardship. The goal of this course was to stimulate critical thinking of MS and PhD students studying at the interface between agriculture and the environment, with a focus on sustainability.

AGRY 696 Graduate Seminar (1 cr): Participatory seminar class the responsibility for which is rotated among Agronomy faculty. The objective is to enhance graduate student skills for critically reviewing and analyzing scientific (peer-review) literature, leading discussions of literature with audiences of mixed expertise, and presenting justification for new research.

Borlaug Summer Institute for Global Food Security: Member of teaching cohort (responsible for Ecosystem Sustainability segment). Program is targeted at beginning graduate students interested in developing a holistic understanding of conceptual challenges around Global Food Security. The goal of my portion of the curriculum is to foster critical thinking about key environmental problems and trade-offs / synergies of potential development activities.

Sustainable Farming Systems Major *in the Purdue College of Agriculture:* With other AGRY faculty (R. Turco, J. Volenec) worked with BTNY, AgEcon, and Animal Science Faculty to develop the requirements for the interdisciplinary major. Major approved in Dec. 2013 College of Agriculture Faculty Meeting. First student cohort targeted for fall 2014.

Guest Lectures: Single lecture in numerous courses including AGRY 365 Soil Fertility (multiple topics); AGRY 560 Soil Physics (Topic: Introduction to Geostatistics); AGRY 101 (Topic: Managing Natural Resources); ABE 591Y Instrumentation and Data Acquisition (Topic: Real World Sensor Function), AGEC 569 Global Land Use Change (Topic: Biodiversity, Ecosystem Services and Agriculture) and Environmental Sciences and Engineering Graduate Colloquium (Topics: Tradeoffs and Tensions among Ecosystem Services, Sustainable Intensification, Extensification versus Intensification in Agricultural Landuse).

REFEREES: Please notify me prior to contacting my referees.

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Curriculum Vita

G. Allen Burton, Jr.

July 24, 2017

Education:
University of Texas at Dallas, M.S. 1980, Ph.D. 1984
Major: Environmental Science (Aquatic Toxicology)
Auburn University, M.S. 1978
Major: Microbiology
Ouachita Baptist University, B.S. 1976
Majors: Biology and Chemistry

Experience:
University of Michigan, Ann Arbor.
Professor, School of Natural Resources & Environment, 2008-present
Professor, Department of Earth & Environmental Sciences, 2011-present ("dry" appointment)
Distinguished Faculty Fellow, Graham Sustainability Institute, University of Michigan. 2014-2016.
Director, University of Michigan Water Center, 2012-2014
Director, Cooperative Institute for Limnology & Ecosystems Research, 2008-2016.

Environmental Toxicology & Chemistry, International Journal. Editor-in-Chief, 2012-present

Concurrent Professor, School of the Environment, University of Nanjing, China. 2014-present.
Honorary Professor, State Key Laboratory of Environmental Criteria and Risk Assessment, Beijing China. 2014-present.

Wright State University, Department of Earth & Environmental Sciences, 2006-2008.
Department of Biological Sciences, 1987- 2006, Dayton, Ohio
Visiting Professor, 2008-2012.
Professor of Environmental Sciences,1996 – 2008.
Chair, Department of Earth & Environmental Sciences, 2006 - 2008.
Director, Institute for Environmental Quality, 1994 - 2006.
Interim Chair, Geological Sciences Department. 2005 – 2006.
Coordinator, Environmental Health Sciences B.S. Degree Program, 1985-2006.
Associate Director, Environmental Sciences Ph.D. Program. July 2003-2005.
Brage Golding Distinguished Professor of Research, 2000 – 2003.
Director, Environmental Sciences Ph.D. Program. 2002- 2003.
Associate Professor, 1990 - 1996.
Associate Director of the Toxicant Contamination Research Program, 1987 - 1990.
Assistant Professor, 1985 -1990.

Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder.
Visiting Fellow, 1984 - 1985.

U.S. Environmental Protection Agency, Dallas, Texas
Life Scientist, GS-11. 1980 - 1984.

University of Texas at Dallas, Richardson, Texas
Teaching and Research Assistant, 1979 - 1984.

U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, Mississippi
1978 -1979

Microbiologist

Honors and Awards:

Fellow, Society of Environmental Toxicology & Chemistry, 2016-present
Board of Advisors. University of North Texas, Inaugural Board of Advisors for the Advanced Environmental Research Institute. 2016-2019.
Expert Panel. Research Institute for Fragrance Materials. 2016-2019.
Doctor *Honoris Causa*, Natural Sciences, University of Roskilde, Denmark. 2013
Distinguished Faculty Fellow. Graham Sustainability Institute, University of Michigan. 2014-2016.
Editor-in-Chief. Environmental Toxicology & Chemistry. 2012-present
Science Advisory Board, U.S. Environmental Protection Agency, Committee on Review of the Ecological Assessment Action Plan. 2012.
Science Advisory Panel, U.S. EPA Office of Pesticides Programs. Review of Methods for Characterizing Effects of Pesticides and Other Chemical Stressors to Aquatic Organisms. 2012.
Co-Editor-in-Chief. Environmental Toxicology & Chemistry. 2011.
Science Advisory Board, U.S. Environmental Protection Agency, Committee on Oil Spill Research Strategic Panel. 2011- 2012.
Science Advisory Board, U.S. Environmental Protection Agency, Committee on Ballast Water Technology Panel. 2010-2011
Science Advisory Board, U.S. Environmental Protection Agency, Committee on Risk and Technology Review Assessments for Phase II Source Categories (RTR II) Panel. 2009-2010
Science Advisory Board, U.S. Environmental Protection Agency, Ecological Processes and Effects Committee. 2005-2011
Editor, Environmental Toxicology & Chemistry. 2009-2011.
University of Michigan Road Scholar. 2009.
Science Advisory Board, U.S. Environmental Protection Agency, Scientific and Technological Achievement Awards (STAA) Panel. 2006-2008.
National Research Council Committee on Sediment Dredging at Superfund Mega-sites. 2006-2007
Immediate Past-President, Society of Environmental Toxicology and Chemistry, 2008
President, Society of Environmental Toxicology and Chemistry, 2007
Vice-President, Society of Environmental Toxicology and Chemistry, 2006
World Council, Society of Environmental Toxicology and Chemistry, 2003-2008.
Brage Golding Distinguished Professor of Research, 2000-2003.
Editorial Board, J. Brazilian Society of Ecotoxicology. 2006-present.
Editorial Advisory Board, Aquatic Ecosystem Health & Management, 2001-2006.
Editorial Board, Chemosphere, 2003-2005.
Co-Editor, Ecotoxicology and Environmental Restoration, 1995-2003.
Editorial Board. Environmental Toxicology and Chemistry. 1990-1993.
Phi Kappa Phi National Honorary Society. 2000-present.
Phi Beta Delta International Honor Society. 2004-present.
Pi Epsilon National Honorary Society. 2004-present
Expert Panel, Environmental Toxicology Assessment Panel, Non-Ferrous Metals Research Associations. 1999-present
Board of Directors, Society of Environmental Toxicology and Chemistry, 1993-1996.
Advisory Council, The Nature Conservancy of Ohio, 1994 - 1999.
NATO Senior Research Fellow, 1994, 1995, 1996.
Visiting Senior Scientist, Italian Institute for Hydrobiology. 1994, 2001, 2005.
Visiting Senior Scientist, New Zealand Institute of Water and Atmospheric Research. 1996.
Sigma Xi, Chapter President, 1991-1992, 2000.
First place award for oral presentation, 3rd International Symposium Toxicity Testing Using Microbial Systems, Valencia, Spain. 1987.
CIRES Visiting Fellow. 1984-1985.

Professional Service *(Chronological order from 2001; Academic service not included):*

Editorial Board, Aquatic Ecosystem Health & Management, 2001-2004.
Chair, Sediment- Water Interactions Group. Metals Industry. 2001-2002.
World Council, Society of Environmental Toxicology and Chemistry, 2003-2006
Editorial Board, Chemosphere, 2003-2005.
Steering Committee. Pellston Workshop on Use of Sediment Quality Guidelines and Related Tools for the Assessment of Contaminated Sediments. Aug. 2002.
Council of Environmental Deans and Directors. National Council for Science and the Environment. 2001-2005.
Steering Committee and Session Chair. Approaches to Assessing and Managing Ecological Risks at Contaminated Sediment Sites Meeting. U.S. Environmental Protection Agency and American Chemical Council. April 2002.
Peer Review Panel. U.S. Environmental Protection Agency Region 2. Bioaccumulation Testing Evaluation Framework for Dredged Materials. 2002.
IAPSO-IAHS Joint Commission on Groundwater-Seawater Interactions. 2003.
Scientific Committee, 6th International Symposium on Sediment Quality Assessment. 2004. Antwerp, Belgium.
Contaminated Sediments Committee, American Society of Civil Engineering. August 2003-2005.
Review Panel. U.S. Environmental Protection Agency. Office of Research and Development. STAR Research Grants. Entomology. Feb. 2004.
Review Panel. U.S. Environmental Protection Agency. Office of Research and Development. STAR Research Grants. Ecological Risk Assessment. Feb. 2004.
Review Panel. U.S. Environmental Protection Agency Federal Insecticide, Fungicide and Rodenticide Act Scientific Advisory Panel (SAP). Aquatic Modeling. Feb. 2004.
Peer Review Coordinator. Pellston Workshop Book "Toxicity of Dietary Metals to Aquatic Organisms". Society of Environmental Toxicology and Chemistry Press. May 2004.
Chair, Science Committee, World Council of the Society of Environmental Toxicology & Chemistry. 2003-2004.
Chair, International Programs Committee, World Council of the SETAC. 2004-2005.
Co-Chair, Technical Workshop on In Situ Effects Measures: Linking Responses to Ecological Consequences. Society of Environmental Toxicology and Chemistry. Troutdale, Oregon. November 2004.
Wolf Creek Focus Group. Watershed Enhancement Program. Dayton, OH. November 2004-2006.
Review Panel. European Union Metal Ecological Risk Assessment Guidance. Non-Ferrous Metals Industry. 2004-2005.
Great Miami River Watershed Enhancement Program Steering Committee. 2001-2005.
Advisory Board. Greene County Career Center and Bellbrook High School Environmental Program. 2004-2005.
Chair, Session on Environmental Education. Council of Environmental Deans & Directors, Washington DC, March 2005.
International Organizing Committee. SETAC Asia/Pacific meeting. Beijing, China. September 2006.
Peer Review Panel – Private Arbitration Appellate Proceedings. Houston, TX. 2005.
Science Advisory Board, U.S. Environmental Protection Agency. Ecosystem Processes and Ecology Committee (EPEC) 2005-2011.
Science Advisory Board. Scientific and Technological Achievement Awards Committee (STAA). 2005-2008
Vice-President, Society of Environmental Toxicology and Chemistry, 2006
World Council, Society of Environmental Toxicology and Chemistry, 2003-2008.
President, Society of Environmental Toxicology and Chemistry, 2007
Immediate Past-President. SETAC. 2008.
National Research Council, Committee on Evaluation of the Effectiveness of Dredging at Contaminated Sediment Sites. 2006-2007.
Chair, NIEHS Special Emphasis Panel, Innovative approaches to remediation of recalcitrant hazardous

substances in sediments (R01). 2007.
Yellow Springs Instruments Foundation. Review Panel. 2007.
Chair. Metals Assessment Session. SETAC Europe Annual Meeting. Porto Portugal. May 2007.
Co-Chair. Metals Risk Assessment Session. SETAC North America Annual Meeting. Milwaukee, WI. Nov. 2007.
Co-Chair. Sediment Dredging Effectiveness Session. SETAC North America Annual Meeting. Milwaukee, WI. 2007.
Chair, Program Review Panel. Montclair University Dept. of Earth and Environmental Studies, New Jersey. 2008.
Review Panel. NIEHS Basic Superfund Research Program. 2008, 2009
Science Advisory Board, U.S. Environmental Protection Agency, Risk and Technology Review Assessments for Phase II Source Categories (RTR II) Panel. 2009-2010
Expert Panel: ASTM E1924 as a Whole Effluent Toxicity Method. ReGenesis. Nov. 2010.
Editor, Environmental Toxicology & Chemistry. 2009-2011.
Co-Editor-in-Chief. Environmental Toxicology & Chemistry. 2011.
Great Lakes Threat Mapping Project Workgroup. The Joyce Foundation. 2009-2011.
State of Washington Department of Ecology. Freshwater Sediment Guidelines Proposed Regulation Review. 2010.
Risk Science Center Internal Advisory Panel. University of Michigan School of Public Health. 2010-2012.
Upper Midwest and Great Lakes Landscape Conservation (UMGL LCC) Technical Committee. 2010-2011.
Science Advisory Board, U.S. Environmental Protection Agency, Ballast Water Technology Panel. 2010-2011.
External Board of Reviewers. State of Washington Department of Ecology. Technology Assessment Protocol – Ecology (TAPE) for Stormwater. 2010-2012.
External Review Panel. Canadian Foundation of Innovation. University of Windsor. 2011.
Science Advisory Board, U.S. Environmental Protection Agency, Oil Spill Research Strategy Panel. 2011-2012.
Editor-in-Chief. Environmental Toxicology & Chemistry. 2012-present
Advisory Board, University of Michigan Biological Station. 2011-present.
Use of Oil Spill Dispersants Research Strategy. NOAA. Mobile, AL 2011.
Trans-boundary Research University Network. UM representative. 2011-2012.
Science Advisory Board, U.S. Environmental Protection Agency, Review of the Ecological AssessmentAction Plan. 2012.
Science Advisory Panel, U.S. EPA Office of Pesticides Programs. Review of Methods for Characterizing Effects of Pesticides and Other Chemical Stressors to Aquatic Organisms. 2012.
Scientific Committee. XII Congresso Brasileiro de Ecotoxicologia. Recife, Brazil. Sept. 2012.
Chair, Program Review Panel. School of Biological Sciences, University of Nebraska – Lincoln. Mar 2012.
Chair, External Scientific Advisory Committee ,Center for Environmental and Marine Sciences, (CESAM), University of Aveiro, Portugal.
U.S. EPA Technical Qualifications Board. Promotion review to GS-15. National Exposure Research Laboratory. 2013.
Chair, Global Partners Committee, Society of Environmental Toxicology & Chemistry. 2014-2015.
Program Review Panel. University of North Texas Department of Biological Sciences. 2015.
Advisory Panel. Ecological Toxicity Advisory Panel. Non-Ferrous Metals Research Associations. 2000-present.
Expert Panel Research Institute for Fragrance Materials. 2016-2019.
Board of Advisors. University of North Texas, Inaugural Board of Advisors for the Advanced Environmental Research Institute. 2016-2019.

Research Grant and Contract Awards *(chronological since 2012, previous grants 1985-2010 not listed):*

Total Funding 1985-2010 ~$10,000,000

RioTinto, Inc. 2012. Predicting the potential effects of metal contaminated sediments on diverse stream communities.
Non-Ferrous Metal Industry Research Organizations. 2012-2014. Experiments measuring bioavailabilty in oxic and spiked sediments (EMBOSS).
Erb Family Foundation. University of Michigan Water Center. 2012-2015.
Provost, University of Michigan. University of Michigan Water Center. 2012-2015.
2012 New Funding: $9,504,000

Water Environment Research Foundations. Secondary Data and Modeling to Support the Application of Site Screening Tools Developed in Phase I to Evaluate Ecological Effects from Trace Organics in the Aquatic Environment. AB Co-PI to LimnoTech 2013-2015.WERF Project CEC6R12
University of Michigan. MCubed. 2013-2014. Tracking water and biodiversity resources in the Great Lakes. Co-PI.
SERDP. Assessment and Management of Stormwater Impacts on Sediment Recontamination. AB Co-PI to University of Texas. 2014-2016.
NiPERA. Validating Ecological Indicators of Metal Availability: A Study of the Thompson and Birchtree Mines, Thompson, Manitoba. 2013-2015.
University of Michigan Third Century Initiative: Global Challenges. Develop the Ethiopia-Michigan Platform or Advancing Collaborative Engagement. 2013-2015.
2013 New Funding: ~$457,000

SERDP. Remedy and Recontamination Assessment Array. AB Co-PI to Bart Chadwick, SPAWAR. 2014-2016.
University of Michigan Water Center. 2013-2015. Microplastics in the Great Lakes: Towards establishing a long-term multidisciplinary research platform to assess the impact of microplastics on Laurentian Great Lakes ecosystem health. AB Co-PI.
University of Michigan Water Center. 2013-2015. Improving water quality and well-being in Great Lakes post-industrial cities: A multidisciplinary partnership to assess Detroit's green infrastructure. AB Co-PI.
2014 New Funding: ~$77,000

CH2M Hill. Assessment of Potential Toxicity in Lake Catherine, Hot Springs, Arkansas. 2015-2017.
NiPERA. Metal partitioning to oxic natural sediments and removal from water. 2015-2017.
2015 New Funding: ~$242,390

Copper Alliance. Copper removal from water. 2016-2017
CH2M Hill. Amendment to Assessment of Potential Toxicity in Lake Catherine, Hot Springs, Arkansas. 2016-2017.
2016 New Funding: $136,858

CH2M. Ecotoxicological evaluation of sediment-associated metals in East Wilson Pond. $164,289
SERDP. 2017-2018. Proof-of-Concept for the in situ Toxicity Identification Evaluation iTIE) Technology for Assessing Contaminated Sediments, Remediation Success, Recontamination and Source Identification. $200,000.
University of Michigan. 2017. Environmental Dredging: Evaluation of Human Health Benefits and Risks. $20,000
2017 New Funding: $386,289.

University Courses Taught:

Water Quality and Treatment
Environmental Toxicology
Hazardous Waste Management
Introduction to Environmental Health Sciences
Limnology
Risk Assessment I and II
Assessment of Sediment Contamination
Ecotoxicology
Problems in Environmental Health Sciences
Watershed Processes
Environmental Stressor Identification
Stream Hydrology and Ecological Interactions
Environmental Problem Solving
Sediment Quality Assessment
Aquatic Ecosystems
Aquatic Ecosystem Quality Assessment
Water and Sediment Quality Assessment
Ecological Risk Assessment
Great Lakes Stressors
Stressor Dynamics in Aquatic Ecosystems
Urban Stormwater Science and Management
Aquatic Ecosystem Stressors

Publications:

1. Burton, G.A., Jr. 1978. Isolation, Frequency of Occurrence, and Survival of *Yersinia enterocolitica* in Aqueous Environments. Thesis. 88 pp. Auburn University, Auburn, Alabama.
2. Gunnison, D., J.M. Brannon, I. Smith, Jr., and G.A. Burton, Jr. 1980. Changes in respiration and anaerobic nutrient regeneration during the transition phase of reservoir development. Proceedings ofthe Workshop on Hypereutrophic Ecosystems, Vaxjo, Sweden, 10-14 September, 1979.
3. Gunnison, D., J.M. Brannon, I. Smith, Jr., G.A. Burton, Jr. and K.M. Preston. 1980. A reaction chamber for study of interactions between sediments and water under conditions of static or continuous flow Water Res. 14: 1520-1532.
4. Burton, G.A., Jr. and J.M. Lazorchak. 1982. Substrate associated microfauna. (Review article). J. Water Pollut. Contr. Fed. 54: 922-931.
5. Burton, G.A., Jr. and J.M. Lazorchak. 1983. Substrate associated microfauna. (Review article). J. Water Pollut. Contr. Fed. 55: 863-869.
6. Lazorchak, J.M. and G.A. Burton, Jr. 1984. Substrate associated microfauna. (Review article). J. Water Pollut. Contr. Fed. 56: 787-791.
7. Burton, G.A., Jr. 1984. Microbial Activity Tests: Factors Affecting Their Potential Use in Sediments. Ph.D. dissertation, 304 pp. University of Texas at Dallas, Richardson.
8. Lazorchak, J.M. and G.A. Burton, Jr. 1985. Substrate associated microfauna. (Review article). J. Water Pollut. Contr. Fed. 57: 724-728.
9. Burton, G.A., Jr. 1985. Microbiological water quality, In: Microbial Processes in Reservoirs. D. Gunnison (ed.), Junk Publishers, pp. 79-97.
10. Burton, G.A., Jr. and G.R. Lanza. 1985. Microbial enzyme activity tests: factors affecting their use to detect toxicant impacts on sediment microbiota, pp. 214-228, In: R.D. Cardwell, R. Purdy, and R.C.Bahner (eds.), Aquatic Toxicology and Hazard Assessment, STP 854. American Society for Testing and Materials, Philadelphia, PA.
11. Lazorchak, J. and G.A. Burton, Jr. 1986. Substrate associated microfauna. J. Water Pollut. Contr. Fed. 58: 699-703.
12. Burton, G.A., Jr. and G.R. Lanza. 1986. Variables affecting two electron transport system assays. Appl. Environ. Microbiol. 51: 931-937.

13. Burton, G.A., Jr., T. Giddings, P. DeBrine, and R. Fall. 1987. A high incidence of selenite-resistant bacteria from a site polluted with selenium. Appl. Environ. Microbiol. 53: 185-188.
14. Burton, G.A., Jr., J. Lazorchak, W. Waller and G. Lanza. 1987. Arsenic toxicity changes in the presence of sediments. Bull. Environ. Contam. Toxicol. 38: 491-499.
15. Burton, G.A., Jr., D. Gunnison and G.R. Lanza. 1987. Survival of enteric pathogens in freshwater sediments. Appl. Environ. Microbiol. 53: 633-638.
16. Burton, G.A., Jr. and G.R. Lanza. 1987. *Aeromonas hydrophila* densities in thermally-altered reservoir water and sediments. Water, Air, Soil Pollut. 34: 199-206.
17. Burton, G.A., Jr., D. Nimmo, F. Payne and D. Murphey. 1987. Microbial activity and *Ceriodaphnia* stream impact survey. Environ. Toxicol. Chem. 6: 505-513.
18. Burton, G.A., Jr., A. Drotar, J. Lazorchak and L. Bahls. 1987. Relationship of microbial activity and *Ceriodaphnia* responses to mining impacts on the Clark Fork River, MT. Arch. Environ. Contam. Toxicol. 16:523-530.
19. Drotar, A., G.A. Burton, Jr., J.E. Tavernier and R. Fall. 1987. Widespread occurrence of bacterial thiol methyl-transferases and the biogenic emission of methylated sulfur gases. Appl. Environ. Microbiol. 53: 1626-1631.
20. Burton, G.A., Jr. and G.R. Lanza. 1987. Aquatic microbial activity and macrofaunal profiles of an Oklahoma stream. Water Res. 21: 1173-1182.
21. Burton, G.A., Jr. 1988. Occurrence of bacterial resistance to arsenite, copper, and selenite in diverse habitats. Bull. Environ. Contam. Toxicol. 39: 990-997.
23. Burton, G.A., Jr. and B.L. Stemmer. 1988. Evaluation of surrogate tests in toxicant impact assessments. Toxicity Assess. 3: 255-269.
24. Burton, G.A., Jr. 1988. Sediment impact assessments using microbial activity tests, In: J. Lichtenberg, J. Winter, C. Weber, and L. Fradkin (eds.), Chemical and Biological Characterization of Municipal Sludges, Sediments, Dredge Spoils and Drilling Muds, STP 976, American Society for Testing and Materials. Philadelphia, PA, pp. 300-310.
25. Burton, G.A., Jr. 1989. Health effect assessments at hazardous waste sites: increasing your expertise.
Ohio J. Environ. Health. 39: 22-23.
26. Lanza, G.R., G.A. Burton, Jr. and J.M. Doughtery. 1989. Microbial enzyme activities: potential use for monitoring decomposition processes, In: J. Cairns, Jr. and J.R. Pratt (eds.), Functional Testing of Aquatic Biota for Estimating Hazards of Chemicals, ASTM STP 988. American Society for Testing andMaterials, Philadelphia, PA. pp. 41-54.
27. Burton, G.A., Jr. 1989. Evaluation of seven sediment toxicity tests and their relationships to stream parameters. Toxicity Assess. 4: 149-159.
28. Burton, G.A., Jr., B.L. Stemmer, K.L. Winks, P.E. Ross, and L.C. Burnett. 1989. A multitrophic level evaluation of sediment toxicity in Waukegan and Indiana harbors. Environ. Toxicol. Chem. 8: 1057-1066.
29. Burton, G.A., Jr., B.L. Stemmer, P.E. Ross, and L.C. Burnett. 1989. Discrimination of sediment toxicity in freshwater harbors using a multitrophic level test battery. In, W.S. Davis and T.P. Simon (eds.), Proceedings of the 1989 Midwest Pollution Control Biologists Meeting. U.S. Environmental Protection Agency, Region V, Instream Biocriteria and Ecological Assessment Committee. Chicago, IL. EPA 905/9-89-007. pp. 71-84.
30. Burton, G.A., Jr., 1990. Ecotoxicology: The Study of the Effects of Chemicals on Natural Systems (a four part feature series--Special Editor). Environ. Sci. Technol. 24: 9.
31. Stemmer, B.L., G.A. Burton, Jr., and S. Leibfritz-Frederick. 1990. Effect of sediment test variables on selenium toxicity to Daphnia magna. Environ. Toxicol. Chem. 9: 381-389.
32. Stemmer, B.L., G.A. Burton, Jr., and G. Sasson-Brickson. 1990. Effect of sediment spatial variance and collection method on cladoceran toxicity and indigenous microbial activity determinations. Environ. Toxicol. Chem. 9: 1035-1044.
33. Burton, G.A., Jr. and P.F. Landrum. 1990. New Standard Guide for Sediment Collection, Storage, Characterization, and Manipulation of Sediments for Toxicological Testing. ASTM Standard E1391. American Soc. Testing and Materials. Philadelphia, PA.

34. Sasson-Brickson, G. and G.A. Burton, Jr. 1991. In situ and laboratorycity testing with *Ceriodaphnia dubia*. Environ. Toxicol. Chem. 10: 201-207.
35. Hieber, P., L. Bedel, and G.A. Burton, Jr. 1991. A noise survey of groundskeepers and highway workers. Ohio J. Environ. Health. 41: 26-29.
36. Kenoyer, G., J. Seaberg, J. Reese, G. Hess, and G.A. Burton, Jr. 1991. Simulation of aqfer remediation with laboratory and field tests of sorption of chlorinated VOCs. Proceedings, National Waterwell Association Outdoor Action Conference, May, 1990, Las Vegas. NWWA, Columbus, OH.
37. Burton, G.A., Jr. 1991. Assessing freshwater sediment toxicity. Environ. Toxicol. Chem. 10: 1585-1627.
38. Burton, G.A., Jr. 1991. Impacts of sediment contaminants on sediment macrofacuna. L. 'Ecotoxicologie Des Sediments, Rapport et communications du congres international de La Rochelle. Societe D'Ecotoxicologie Fondamentale et Appliquee. Paris, France.
39. Burton, G.A., Jr. 1992. Sediment Toxicity Assessment. Editor. Lewis Publishers. Boca Raton, FL. 457 p
40. Burton, G.A., Jr. 1992. Sediment collection and processing: factors affecting realism. In, Sediment Toxicity Assessment. Lewis Publishers. Boca Raton, FL. pp. 37-66.
41. Burton, G.A., Jr. 1992. Plankton, macrophyte, fish and amphibian toxicity testing of contaminated freshwater sediments. In, Sediment Toxicity Assessment. Lewis Publishers, Boca Raton, FL. pp.167-182.
42. Burton, G.A.,Jr., M.K. Nelson, and C. Ingersoll. 1992. Freshwater benthic toxicity assays. In, Sediment Toxicity Assessments. Lewis Publishers, Boca Raton, FL. pp. 213-240.
43. Chapman, P., E. Power, and G.A. Burton, Jr. 1992. Integrative assessments in aquatic ecosystems. In, Sediment Toxicity Assessment. Lewis Publishers. Boca Raton, FL. pp. 313-340.
44. Burton, G.A., Jr. 1992. Annex X4. *Daphnia* and *Ceriodaphnia* sp. In ASTM Standard Guide E1383. New Standard Guide for Conducting Sediment Toxicity Tests with Freshwater Invertebrates. Amer. Soc. Testing and Materials. Philadelphia, PA.
45. Ross, P.E., G.A. Burton, E.A. Crecelius, J.C. Filkins, J.P. Giesy, Jr., C.G. Ingersoll, M.J. Mac, T.J. Murphy, J.E. Rathbun, V.E. Smith, H.E. Tatem, & R.W. Taylor. 1992. Assessment of sediment contamination at Great Lakes Areas of Concern: the ARCS Program Toxicity-Chemistry Work Group strategy. J. Aquatic Ecosystem Health 1:193-200.
46. Burton, G.A., Jr. 1992. Assessing contaminated aquatic sediments (a two part feature series – Special Editor). Environ. Sci. Technol. Vol. 26:1862-1863.
47. Burton, G.A., Jr. 1993. Assessing the quality of life for aquatic biota. In, Proceedings 1992 International Symposium on Environmental Dredging, A Solution to Contaminated Sediments?. Erie County Environmental Education Institute, Inc.. Buffalo, NY.
48. Burton, G.A., Jr. and K.J. Scott. 1992. Sediment toxicity evaluations: Their niche in ecological assessments. Environ. Sci. Technol. Vol. 26:2068-2075.
48. Burton, G.A., Jr., T. La Point, and C. Zarba. 1993. Contamination assessment of sediments in Freshwater ecosystems, In, J. Saxena, ed., Hazard Assessment of Chemicals - Current Developments, Vol. 8: 171-205. Taylor and Francis Publ. Corp., Washington, DC.
50. Burton, G.A., Jr. 1993. Sediment quality assessments, Proceedings of the Conf. on Assessment and Treatment of Contaminated Sediments in the North Branch Chicago River. Northeast Illinois Planning Commission, Chicago, IL. pp. 23-30.
51. Nelson, M.K., P.F. Landrum, G.A. Burton, Jr., S.J. Klaine, E.A. Crecelius, T.D. Byl, D.C. Gossiaux, V.N. Tsymbal, L. Cleveland, C.G. Ingersoll, G. Sasson-Brickson. 1993. Toxicity of contaminated sediments in dilution series with control sediments. Chemosphere 27:1789-1812.
52. Burton, G.A., Jr. 1994. Assessing stormwater impacts. In, G. V. Cotroneo and R.R. Rumer (eds.), Hydraulic Engineering '94, Proceedings of the 1994 Conference. Amer. Soc. Civil Engineers Publ. pp. 1198-1202.
53. Burton, G.A., Jr. and C.G. Ingersoll. 1994. Evaluation of sediment toxicity, In Assessment Guidance Document. Assessment and Remediation of Contaminated Sediments (ARCS) Program, U.S. Environmental Protection Agency, Great Lakes National Program Office, Chicago, IL. pp. 86-130.
54. Hoffman, D.J, B.A. Rattner, G.A. Burton, Jr., and J. Cairns, Jr. (eds.) 1995. Handbook of Ecotoxicology. Lewis Publishers, Boca Raton, FL.

55. Burton, G.A., Jr. and C. MacPherson. 1995. Test methods for measuring sediment toxicity, In Hoffman, D., et al. (eds.), Handbook of Ecotoxicology. Lewis Publishers, Boca Raton, FL. pp.70-103.
56. Burton, G.A., Jr. 1995. Quality assurance issues in assessing receiving waters. In E.E. Herricks, ed., in Stormwater Runoff and Receiving Systems: Impact, Monitoring, and Assessment. Lewis Publishers, Boca Raton, FL.pp. 275-284.
57. Sarda, N. and G.A. Burton, Jr., 1995. Ammonia variation in sediments: Spatial, temporal and method-related effects. Environ. Toxicol. Chem. 14:1499-1506.
58. Ingersoll, C.G., G.T. Ankley, D.A. Benoit, E.L. Brunson, G.A. Burton, F.J. Dwyer, R.A. Hoke, P.F. Landrum, T.J. Norberg-King, and P.V. Winger. 1995. Toxicity and bioaccumulation of sediment-associated contaminants using freshwater invertebrates: a review of methods and applications. Environ. Toxicol. Chem.14:1885-1894.
59. Burton, G.A., Jr. 1995. Critical issues in sediment bioassays and toxicity testing. J. Aquatic Ecosystem Health 4: 151-156.
60. Ireland, D.S., G.A. Burton, Jr., and G.G. Hess. 1996. *In Situ* toxicity evaluations of turbidity and photoinduction of polycyclic aromatic hydrocarbons. Environ. Toxicol. Chem. 15:574-581.
61. Burton, G.A., Jr., T.J. Norberg-King, C.G. Ingersoll, D.A. Benoit, G.T. Ankley, P.V. Winger, J. Kubitz, J.M. Lazorchak, M.E. Smith, E.Greer, F.J. Dwyer, D.J. Call, K.E. Day, P. Kennedy, and M.Stinson. 1996. Interlaboratory study of precision: *Hyalella azteca* and *Chironomus tentans* freshwater sediment toxicity tests. Environ. Toxicol. Chem. 15:1335-1343
62. Burton, G.A., Jr. W.R. Arnold, L.W. Ausley, J.A. Black, G.M. DeGraeve, F. Fulk, J. Heltshe, W.H. Peltier, J. Pletl, and J.H. Rodgers, Jr. 1996. Discussion synopsis: effluent toxicity testing variability, in D Grothe, K. Dickson, and D. Reed-Judkins (eds.) Whole Effluent Toxicity Testing: An Evaluation of Methods and Prediction of Receiving System Impacts. SETAC Press, Pensacola, FL, pp. 131-156.
63. Burton, G.A., Jr., C. Ingersoll, L. Burnett, M. Henry, M. Hinman, S. Klaine, P. Landrum, P. Ross, and M. Tuchman. 1996. A comparison of sediment toxicity test methods at three Great Lakes Areas of Concern. J. Great Lakes Res. 22:495-511
64. Yu, K. O., D.E. Tillitt, J.Z. Byczkowski, G.A. Burton, Jr., S.R. Channel, J.M. Drerup, C.D. Flemming, and
J.W. Fisher. 1996. *In vivo/in vitro* comparison of the pharmacokinetics and pharmacodynamics of 3,3',4,4'-tetrachlorobiphenyl (PCB77). Toxicol. Appl. Pharm. 141:434-438.
65. Canfield, T.J., F.J. Dwyer, J.F. Fairchild, P.S. Haverland, C.G. Ingersoll, N.E. Kemble, D.R. Mount,T.W. LaPoint, G.A. Burton, M.C. Swift. 1996. Assessing contamination in Great Lakes sediments using benthic invertebrate communities and the sediment quality triad approach. J. Great Lakes Res. 22:565-583.
66. Burton, G.A., Jr., C. Hickey, T. DeWitt, D. Morrison, D. Roper, and M. Nipper. 1996. *In situ* toxicity testing: Teasing out the environmental stressors. SETAC NEWS 16(5):20-22.
67. Burton, G.A. 1996. Evaluating toxicity: test response issues. Proceedings, Workshop on Toxicity Testing Applied to Soil Ecotoxicology., National Research Council, Biotechnology Research Institute, Montreal, Canada, pp. 21-22.
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Environmental Science and Pollution Research DOI 10.1007/s11356-016-8338-x
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In Preparation, Submitted or in Press

Schiesari L, M Leibold, GA Burton. 2017. Metacommunities, metaecosystems, and the environmental fate of chemical contaminants. J Appl Eco (accepted pending revisions).

Nedrich SM, A Chappaz, ML Hudson, SS Brown, GA Burton Jr., 2017. Biogeochemical controls on the speciation and aquatic toxicity of vanadium and other metals in sediments from a river reservoir. Environ Pollution (accepted pending revisions)

Mendonxca R, J Daley, M Hudson, C Schlekat, G A Burton, D Costello. 2017 Metal oxides in surface sediment control nickel bioavailability to benthic macroinvertebrates Environ Sci Technol (submitted).

Posthuma, Leo, Dick De Zwart, Scott D. Dyer, Chris Holmes, Stuart Marshall, G. Allen Burton, Jr 2017. Prospective mixture risk assessment and management prioritizations for river catchments with diverse land uses. Environ Toxicol Chem. (submitted).

Yang, Jianghua Yang, Yuwei Xie, Chao Song, Wanwan Zhang, G. Allen Burton Jr, Xiaowei Zhang. 2016 Aquatic organism taxonomy: Improved Next-Generation Sequencing enhances DNA barcode capture and DNA metabarcoding. Environ Sci Technol. (submitted)

Wang Z, Gilbert C. S. Lui, Guang-Jie Zhou, G. Allen Burton, Jr., Kenneth M. Y. Leung. 2016. Thermal extremes can intensify chemical toxicity to freshwater organisms and hence exacerbate their impact to the biological community. Environ Sci Technol (submitted)

Hudson M.L., Costello, D., and Burton, G.A. 2017. Species-specific trophic and transfer (or accumulation?) of gold nanomaterials in *Hyalella azteca* and *Lymnea stagnalis.* Bull Env Toxicol Contam (in preparation)

Brooks, Bryan, Burton, GA, et al. 2017. Environmental quality implications of unconventional oil and gas development: Current perspectives and research needs. Environ Toxicol Chem. (in preparation)

Patents

Rapidly Amplified Polymorphic DNA Profiling: A Reliable/Sensitive Bioindicator of Ecosystem Health. Patent Pending. 1999. D. Sternberg, D. Krane, and G.A. Burton.

In situ Sediment Ecotoxicity Assessment System. Patent No. US 8,011,239 BI. 2011. Chadwick, DB, Rosen GH, Burton GA. U.S. Navy and University of Michigan.

Abstracts *(from conference presentations since 2012):*

Rosen, G, Chadwick DB, Burton GA,. 2012. Demonstration and commercialization of the sediment ecosystem assessment protocol ER-201130. ESTCP Interim Project Review. Arlington VA.

Burton GA Jr., Costello D, Farley K, Carbonaro R, Rader K, Gailani J, Schroeder P, Kim S-C 2012. Predicting fate and effects of resuspended metal contaminated sediments. ER-1746. SERDP Interim Project Review. Arlington VA.

Costello, D.M.; Burton, G.A. 2012. Variation in biofilm response to metal-contaminated sediments – the importance of ecosystem context for managing polluted ecosystems. Annual Meeting Society of Freshwater Science. Louisville, KY.

Harrison, A.M.; Costello, D.M.; Burton, G.A. 2012. Experiments measuring bioavailability in oxic and spiked sediments. Annual Meeting Society of Freshwater Science. Louisville, KY.

Wiitala, M.M.; Costello, D.M.; Burton, G.A. 2012. Effects of anthropogenic sedimentation of benthic macroinvertebrate assemblages in the upper peninsula of Michigan. Annual Meeting Society of Freshwater Science. Louisville, KY.

Nelson WA, Burton GA Jr, Steinman AD. 2012. Sediment toxicity in a Great Lakes Area of Concern: An in situ bioassay with *Chironomus dilutus* and *Hyalella azteca*. Annual Meeting Society of Freshwater Science. Louisville, KY.

Burton, GA. 2012. Improving assessments of invertebrate metal toxicity through realistic, multi-compartment, exposure scenarios. Aquatic Toxicity Symposium, Holden Village, WA. June. (invited)

Mendonça R, A Harrison, D Costello, GA Burton, C Hammerschmidt, L Podzikowski. 2012. Experiments measuring bioavailability in oxic and spike sediments. XII Congresso Brasileiro de Exotoxicologia. Recife, Brazil. Sept. 2012.

Burton GA, D Costello. 2012. Improving our Understanding of Ecologically Significant Metal Effects in Aquatic Benthos. Annu Meeting N Amer Soc Environ Toxicol Chem. Long Beach CA. Nov.

Posthuma L, D DeZwart, D Sigm, J Verhoeven, SD Dyeer, K Kapo, GA Burton. 2012. From substance- to societal solutions in risk assessment and sustainable risk reduction. Annu Meeting N Amer Soc Environ Toxicol Chem. Long Beach CA. Nov.

Costello, DM, GA Burton. 2012. Biofilm response to contaminated sediment and indirect effects on grazers varies among stream ecosystems. *North American Meeting of SETAC*, Long Beach, CA.

Harrison A, D Costello, GA Burton, L Podzikowski, R Mendonça, C Hammerschmidt. 2012. Experiments Measuring Bioavailability in Oxic and Spiked Sediments. Annu Meeting N Amer Soc Environ Toxicol Chem. Long Beach CA. Nov.

Fetters K, D Costello, A Harrison, M Eggleston, GA Burton. 2012. Sediment Resuspension Affects Metal Bioavailability. Annu Meeting N Amer Soc Environ Toxicol Chem. Long Beach CA. Nov.

Xie M, Fetters K, Jarrett B, Packman A, Cadoux C, Yuen J, El-Natour M, Gaillard J_F, Burton GA. 2012. Coupling between pore water fluxes, structural heterogeneity, and biogeochemical processes controls contaminant mobility, bioavailability, and toxicity in sediments. Annu Meet American Geophysical Union. San Francisco. December

Burton GA, G Rosen, DB Chadwick, C Stransky, H Bailey, MS Greenberg, J Radford. 2013. Improved In Situ Approach for Assessing Sediment Ecological Risk, Remediation Effectiveness and Stormwater Impacts. 7th Intern Conf Remediation of Contaminated Sediments. Dallas, TX. February.

Costello, DM, GA Burton, CR Hammerschmidt, and AM Harrison. 2013. Metal SQGs and the ecosystem concept: lessons from field and mesocosm experiments. *Seventh International Conference on Remediation of Contaminated Sediments*, Dallas.

Harrison AM, DM Costello, and GA Burton. Ecologically realistic approaches to sediment toxicology research on redox sensitive compounds. *Annual Meeting of the Society for Freshwater Science*, Jacksonville, FL, 2013.

Podzikowski, LY*, DM Costello, and GA Burton. Responses of lotic macroinvertebrate assemblages to biologically available copper in spiked sediments in Michigan's upper and lower peninsulas. *Annual Meeting of the Society for Freshwater Science*, Jacksonville, FL, 2013.

Mendonça, RM*, AM Harrison, DM Costello, GA Burton, CR Hammerschmidt, and LY Podzikowski*. 2013 Dynamic copper biogeochemistry and toxicity in sediments. *Annual Meeting of the Society for Freshwater Science*, Jacksonville, FL, 2013.

Kinsman-Costello, L, Greg Dick, Nathan Sheldon, Allen Burton, Tim Gallagher, Dan Marcus, Mike Balke, Michael Snider and Bopi Biddanda. 2013. Salty Fresh Water: Submerged sinkholes receiving high-conductance, low-oxygen groundwater inputs harbor unique microbial communities and function. *Annual Meeting of the Society for Freshwater Science*, Jacksonville, FL, 2013.

Costello, DM, AM Harrison, RM Mendonca*, D Marsh*, CR Hammerschmidt, and GA Burton. 2013. Aging spiked sediments in a flow-through artificial stream – changes in sediment Cu toxicity and speciation. *Annual Meeting of SETAC Europe*, Glasgow, Scotland, 2013.

Costello, DM, AM Harrison, GA Burton, CR Hammerschmidt, and RM Mendonca*. 2013. Experiments measuring copper bioavailability in oxic and spiked sediments. *ECHA Topical Scientific Workshop: Risk Assessment for the Sediment Compartment*, Helsinki, Finland, 2013.

Burton, GA, DM Costello, CR Hammerschmidt, EC Rogevich Garman, and CE Schlekat. 2013 Nickel phase partitioning, flux, and toxicity in field deployed sediments. *ECHA Topical Scientific Workshop: Risk Assessment for the Sediment Compartment*, Helsinki, Finland, 2013.

Burton G Allen, Gunther Rosen, D Bart Chadwick, Chris Stransky, Howard Bailey, Marc S Greenberg, John Radford. 2013. Evaluation of a new tool for assessment of *in situ* biological exposure and effects, risk and remediation effectiveness in aquatic environments. 36th AMOP Technical Seminar on Environmental Contamination and Response. Halifax, Nova Scotia. June.

Burton, G Allen, Jr, Rosen G, Chadwick B, Costello D, Fetters K. 2013. Improving linkages between exposure and effects assessments of contaminated sediments in marine harbors. 7th International Conference on Marine Pollution and Ecotoxicology. Hong Kong. June.

Burton GA. 2013. Are sediment guidelines developed from laboratory spiking studies accurate? SETAC Australia Conference. Melbourne. September

Kinsman-Costello L, Dick G, Burton GA, Sheldon N. 2013. Will climate, invasives and toxicants imperil unique biodiversity in Great Lakes Sinkhole ecosystems? MCubed Symposium. University of Michigan. November.

Burton GA. 2013. Are contaminated sediments an important stressor? University of Saskatchewan. Toxicology Centre. November.

Burton GA 2013. Metal bioavailability, multiple stressors and environmental risk assessments: Resolving impairment complexities in human dominated waterways. 7th National Environmental Chemistry Conference. Guiyang, China. September. (invited)

Burton GA 2013. Understanding the ecological risk of anthropogenic chemicals in the context of natural stressors. School of Environment. Nanjing University. September (invited).

Burton GA. 2013. Perspectives on effective management of urban water quality. Biannual Meeting Australasia Chapter of SETAC. Melbourne. October. (invited)

Burton GA. 2013. Natural and anthropogenic stressors in aquatic ecosystems. University of Roskilde. Roskilde Denmark. September. (invited)

Costello, DM, AM Harrison, DL Marsh, RM Mendonca, GA Burton, CR Hammerschmidt. 2013. Dynamic speciation and toxicity during aging of Cu-spiked sediments in a flow-through mesocosm. Ann Meeting SETAC. Nashville TN Nov.

Kapo, K, C. Holmes, S. Dyer, L. Posthuma, D. de Zwart, M. J. Whelan, R. Williams, V. Keller, A. Young, S. Marshall, G.A. Burton, and J. Murray Bligh. 2013. Leveraging Existing Data Resources with Spatial Eco-epidemiology as a Screening-Level Approach in Ecological Risk Assessment: Case Studies in the U.S. and the U.K. Ann Meet SETAC. Nashville TN

Driscoll SBK, Menzie CA, Ghosh U, Reible DD, Burton GA, Gschwend P. Sediment Bioavailability Initiative: Development of Standard Methods for the Use of Passive Samplers in Management of Contaminated Sediment. Ann Meeting SETAC. Nashville TN Nov.

Stransky C, Rosen GH, Chadwick B, Guerrero JM, Colvin MA, Tait K, Burton GA. Chesapeake Bay is our Laboratory -In Situ Sediment Toxicity and Bioaccumulation Assessment at Marine Corps Base Quantico, Virginia. Ann Meeting SETAC. Nashville TN Nov.

Fetters K, Costello D, Hammerschmidt C, Burton GA. 2013. Toxicological effects of short-term resuspension of metal-contaminated freshwater and marine sediments. Annu Meet Soc Environ Toxicol Chem. Nashville TN. November.

Harrison AM, DM Costello, GA Burton, CR Hammerschmidt. 2014. Metal Release and Toxicity of Aged versus Freshly Amended Sediments. Joint Aquatic Sciences Meeting. Portland, OR. May.

Costello DM, AM Harrison, GA Burton, CR Hammerschmidt. 2014. Variation in sediment redox potential influences metal biogeochemistry and toxicity. Joint Aquatic Sciences Meeting. Portland, OR. May.

Kinsman-Costello Lauren, Cody Sheik, Greg Dick, Nathan Sheldon, Allen Burton, Tim Gallagher, Dan Marcus, Bopi Biddanda. 2014 Dynamic biogeochemistry of microbial mat and sediment communities in submerged groundwater seeps of Lake Huron. Joint Aquatic Sciences Meeting. Portland OR. May.

Burton GA and Costello D. 2014. AVS based bioavailability models are inadequate for predicting risk in oxic sediments. No. 157. Annu Meet SETAC Europe. Basel Switzerland.

Posthuma, L, Burton GA et al. 2014. Solution-focused landscape-level eco(toxico)logical assessment and management. No. 522. Annu Meet SETAC Europe. Basel Switzerland.

Burton GA. 2014. Improving spatial and temporal characterizations of metal bioavailability in sediments and overlying waters. SETAC Asia Pacific Biannual Conference. Adelaide Australia.

Costello, D., GA Burton et al. Dyanamic speciation and toxicity of metal-spiked sediments during againg in a flow-through mesocosm. Abstracts. Annual SETAC North American Conference. Vancouver Canada. Nov 2014.

Daley, J., GA Burton et al. Multidisciplinary assessment of the ecological and environmental impacts of microplastics in the Laurentian Great Lakes. Abstracts. Annual SETAC North American Conference. Vancouver Canada. Nov 2014.

Nedrich, S. GA Burton et al. Simulating resuspension and bioturbation in aquatic sediments: Differentiating the effects on metal bioavailability. Abstracts. Annual SETAC North American Conference. Vancouver Canada. Nov 2014.

Burton GA, J Daley et al. Assessing the ecological impacts of trace organics using a weight of evidence framework. Abstracts. Annual SETAC North American Conference. Vancouver Canada. Nov 2014.

Daley, J., GA Burton et al. An in-situ toxicity identification evaluation method to assess the risk of trace organic exposures in the context of co-occurring stressors. Abstracts. Annual SETAC North American Conference. Vancouver Canada. Nov 2014.

Harrison, A., GA Burton et al. Improving metal sediment toxicity testing: methods for more environmentally relevant exposures. Abstracts. Annual SETAC North American Conference. Vancouver Canada. Nov 2014.

Burton GA, Jen Daley, Anna Harrison, Larissa Sano. 2015. Simulating Resuspension and Bioturbation in Aquatic Sediments: Differentiating the Effects on Metal Bioavailability. Battelle Conference on Remediation and Management of Contaminated Sediments. New Orleans. Jan 2015.

KJ Farley, KJ Rader, RF Carbonaro, GA Burton Release of Metals from Contaminated Sediments: Translation from Laboratory to Field-scale Assessments. Battelle Conference on Remediation and Management of Contaminated Sediments. New Orleans. Jan 2015.

Nedrich SM, Burton GA. 2016. Indirect effects of climate change on Zinc cycling in sediments: the role of changing water levels. Soc Env Toxicol Chem Annu Meeting. Orlando Nov 2016

Nedrich S, J Daley, L Sano and GA Burton. 2016. The effect of resuspension and bioturbation on metal bioavailability in Lake DePue (Illinois) sediment. Soc Freshwater Sci.

Costello DM, Schlekat CE, Garman ER, Hammerschmidt CR. Burton GA. Sediment homogenization and aging alters the toxicity of metal-amended sediments. Soc Env Toxicol Chem Annu Meeting. Orlando Nov 2016

Reible DD, Rao B, Athanasiou D, Drygiannaki I, Rakowska M, Otto M, Streets B, Pitt R, Marienne C, Rosen G, Chadwick B, Burton GA. 2016. Evaluating Stormwater Impacts on Coastal Sediment Recontamination. Soc Env Toxicol Chem Annu Meeting. Orlando Nov 2016

Mendonca, R, Schlekat C, Garman E, Daley J, Hudson M, Burton GA, Costello D. The role of metal oxide minerals in nickel bioavailability in field-contaminated sediments. Soc Env Toxicol Chem Annu Meeting. Orlando Nov 2016

Hudson ML, Burton GA, Costello D, Daley JM. Ecotoxicology of Gold Nanomaterials: Effects on periphyton, *L. Stagnalis*, and *H. Azteca* in an aquatic food chain study. Soc Env Toxicol Chem Annu Meeting. Orlando Nov 2016

Nedrich SM, Brown SS, Burton GA. 2017. Assessing Environmental Risk of Metals to Benthic Organisms in Hydrologic
9th Intern Conf Remediation and Mgmt of Contaminated Sediments. New Orleans. Feb 2017

Chadwick B, Moore D, Burton GA, Colvin M, Davidson B. Remedy and Recontamination Assessment Array: An Initial I
Conf Remediation and Mgmt of Contaminated Sediments. New Orleans Feb 2017.

Reible D, Rao B, Dmitri Athanasiou, Ilektra Drygiannaki, Magdalena Rakowska, Michelle Bejar, Colvin M, Rosen G, Cha
Burton A. (Texas Impacts of Urban Stormwater Contaminants on Coastal Sediment Recontamination. Intern Conf Reme
Contaminated Sediments. New Orleans Feb 2017

Cerevi Eduardo, Fernandes F., Hudson M, Burton GA, Paleto C. 2016. Mobilization and toxicological effects of metals in
during short-term resuspension events. Brasilian Soc Ecotox. Sept.

Reible D, Rao B, Dmitri Athanasiou, Ilektra Drygiannaki, Magdalena Rakowska, Michelle Bejar, Colvin M, Rosen G, Chadwick B, Otto M, Pitt R, Burton A. (Texas Impacts of Urban Stormwater Contaminants on Coastal Sediment Recontamination. Intern Conf Remediation and Mgmt of Contaminated Sediments. New Orleans Feb 2017

G.A. Burton, S.M. Nedrich, M.L. Hudson, S.S. Brown (May 2017). Fate, speciation, and bioavailability of vanadium in sediments. SETAC Europe, Brussels, Belgium.

S.M. Nedrich, S.S. Brown, G.A. Burton (April 2017). Assessing environmental risk of metals to benthic organisms in hydrologically variable sediments. MGU, Ann Arbor, MI, USA

S.M. Nedrich, G.A. Burton (November 2016). Indirect effects of climate change on Zinc cycling in sediments: the role of changing water levels. SETAC, Orlando, FL, USA.

Abstracts: total since 1978 = 320

Invited Lectures *(since 2012)***:**

Why are we failing to manage water quality? University of Toledo Lake Erie Research Center. January 2012. Video: http://www.knowledgestream.org/kstream/index.asp?item_id=10937

Assessing impacts in aquatic ecosystems: Unknown unknowns and the relevance paradox. Michigan Society of Toxicology Annual Meeting. Central Michigan University. May 2012.

Blue Economy. The Craig Fahley show, WDET-FM (101.9) Detroit PBS. March 28. http://www.snre.umich.edu/highlights/2012-03-28/professor_burton_talks_about_the_'blue_economy'

Plenary. Assessing water quality: Holistic approaches that reduce uncertainty. VI Encontro Nacional de Quimica Ambiental (VI ENQAmb), Londrina, Brazil. March 2012.

Improving assessments of invertebrate metal toxicity through realistic, multi-compartment, exposure scenarios. Aquatic Toxicity Symposium, Holden Village, WA. June, 2012.

Brazilian Opportunities in The Society of Environmental Toxicology & Chemistry and Publishing in Environmental Toxicology & Chemistry. XII Congresso Brasileiro de Exotoxicologia. Recife, Brazil. Sept. 2012.

Plenary. Making Ecosystem Reality Checks the Status Quo. XII Congresso Brasileiro de Exotoxicologia. Recife, Brazil. Sept. 2012.

Plastic in aquatic environments: From the Pacific Gyre Garbage Patch to the Great Lakes. Michigan Recycling Coalition. East Lansing, MI. April 2013.

Plenary. Natural and Anthropogenic Stressors in Aquatic Ecosystems. University of Roskilde. Denmark. September 2013.

Plenary. Metal Bioavailability, Multiple Stressors and Environmental Risk Assessments: Resolving Impairment Complexities in Human Dominated Waterways. 7th China National Conference on Environmental Chemistry. Guiyang. September 2013.

Understanding the Ecological Risk of Anthropogenic Chemicals in the Context of Natural Stressors. Nanjing University, China. October 2013.

Perspectives on Effective Management of Urban Water Quality. SETAC Australia Conference. Melbourne. October 2013.

Perspectives on effective management of urban water quality. Biannual Meeting Australasia Chapter of SETAC. Melbourne. October, 2013 (invited)

To Tell the Truth: Will the Real Stressor Please Stand Up? Midwest SETAC Annual Meeting. Loyola University. March 2014.

Careers in Environmental Science. School of Environment. Nanjing University (invited). April 2014

Integrating Multiple Assessment Methods to Understand Ecosystem-Stressor Relationships. School of Environment. Nanjing University (invited). April 2014

Options for Assesssing Ecosystem Quality in Human-Dominated Watersheds: Issues and Examples. College of Environmental Science & Engineering. Peking University (invited). April 2014

Careers in Environmental Science. College of Environmental Science & Engineering. Peking University (invited). April 2014

Linking Environmental Exposures to Adverse Effects: Weight-of-Evidence Based Approaches Reduce Uncertainty in Human Health Assessments. School of Public Health. Peking University. (invited) April 2014.

Asian carp, Algal Blooms, Fracking, UP Mining, Micro-plastics and Pharmaceuticals: Will the real stressor please stand up? University of Michigan Conservation Ecology Seminar Series. December 2014.

Environmental Epidemiology: Perspectives on Microplastics in Aquatic Ecosystems. Personal Care Products Council. Newark NJ. Oct. 2014

Background Issues in Superfund Cleanups. Panel Participant. Sediment Management Workgroup Symposium. Washington DC. December 2014.

Careers in Environmental Science. School of Environment. Nanjing University (invited). April 2015

Invited Seminar: Will the real stressor please stand up? Calvin College. Feb. 2015.

Invited lecture: Which aquatic stressors really matter? Nanjing University, China April 2015

Keynote: Which aquatic stressors really matter? Pragmatic diagnostic approaches and considerations. National Conference on Ecotoxicology. Xiamen, China April 2015

Invited Seminar: Metal bioavailability (thus toxicity) changes through time in sediments. Nanjing University, China April 2015.

Invited Seminar: What's messing up our streams, rivers, lakes and harbors?
How do we make them better? Central Michigan University Field Station. Beaver Island, MI July 2015

Invited lecture: Fate and transport of environmental contaminants. Nanjing University, China. October 2015
Invited lecture: Sediment characterizations and sampling for environmental assessments. Nanjing University, China. October 2015

Invited lecture: In situ cage and mesocosm testing in aquatic systems. Nanjing University, China. October 2015

Invited lecture: Using weight-of-evidence approaches to assess aquatic ecosystems. Nanjing University, China. October 2015

Invited seminar: Improving assessments of metal bioavailability in sediments in the context of multiple stressors. Nanjing University, October 2015

Invited lecture: Sediment quality guidelines and BEAST. Nanjing University, China. October 2015

Invited lecture: Sediment quality guidelines for metals: The past, present and future. Nanjing University, China October 2015

Invited lecture: How to Publish Scientific Papers. Nanjing Universtiy, China December 2015

Invited lecture: Environmental epidemiology: Perspectives on the role of microplastics in aquatic ecosystems. Nanjing University, China December 2015

Invited seminar: Diagnosing dominant stressors in aquatic ecosystems. Dalian University, China. December 2015.

Invited seminar: Which aquatic stressors really matter? Pragmatic diagnostic approaches and considerations. Expert Panel, Research Institute for Fragrance Materials, Inc. (RIFM). Miami, FL. January 2016.

Invited lecture: Iron oxides are key to bioavailability of metals in freshwater sediments: a lab and field story. Aquatic Toxicity Symposium. Bar Harbor ME Jun 2016.

Keynote: Human dominated aquatic ecosystems have a plethora of physical, chemical and biological stressors: Where do metal and synthetic organic chemicals rank amongst them. 8th Intern Conf Marine Pollution and Ecotoxicology. Hong Kong. June 2016

Keynote: Breaking from Tradition: Establishing more realistic sediment quality guidelines. Intern Conf Deriving Environ Quality Standards for the Protection of Aquatic Ecosystems. Hong Kong. June 2016.

Invited Lectures since 1984 = 201

CURRICULUM VITAE

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EDUCATIONAL:	1971 - B.S. (Medicinal Chemistry) University of Michigan 1975 - Ph.D. (Pharmacology) Michigan State University
EMPLOYMENT:	
2001-	Director of External Technology, Toxicology and Environmental Research and Consulting, Dow Chemical Company, Midland, MI 48674
1998-2001	Science Policy Leader, Toxicology and Environmental Research and Consulting, Dow Chemical Company, Midland, MI 48674
1994-1998	Technical Director, Toxicology and Environmental Research and Consulting, Dow Chemical Company, Midland, MI 48674
1992--1993	Research Manager, General Toxicology, Dow Chemical Company, Midland, MI
1989-1992	Project Manager, Toxicology Research Laboratory, Dow Chemical Company, Midland, Michigan.
1987- present	Adjunct Professor, Department of Pharmacology & Toxicology, Michigan State University, East Lansing, Michigan.
1989	Safety Pharmacology, The Upjohn Company.
1988-1989	Director, Drug Metabolism Research, The Upjohn Company.
1986-1987	Associate Director, Pathology/Toxicology (Mechanistic Toxicology Unit), The Upjohn Company, Kalamazoo, Michigan.
1984-1988	Adjunct Associate Professor, Curriculum in Toxicology, University of North Carolina School of Medicine, Chapel Hill, North Carolina; Chairman, Curriculum in Toxicology, Ph.D. Candidacy Examination Committee, 1985-86.

1984-1986	Scientist II (Biochemical Toxicologist), Chemical Industry Institute of Toxicology, Research Triangle Park, North Carolina.
1977-1984	Scientist I (Biochemical Toxicologist), Chemical Industry Institute of Toxicology, Research Triangle Park, North Carolina.
1975-1976	Assistant Professor of Environmental Health (Toxicology), University of Cincinnati, Cincinnati, Ohio.
1971-1975	National Institutes of Health Predoctoral Trainee, Department of Pharmacology, Michigan State University.

PROFESSIONAL SOCIETIES:

Sigma Xi, Michigan State Chapter (1975-1983)
American Association for the Advancement of Science (1975-1987)
Teratology Society (1977-present)
American Thoracic Society (1978-1992)
Society of Toxicology (1980-present)
American Society for Pharmacology and Experimental Therapeutics (1977-present)
American Conference of Governmental and Industrial Hygienists (ACGIH) (Associate Member, 1996-present)

PROFESSIONAL CERTIFICATION:

American Board of Toxicology, 1980; Recertified, 1985, 1990, 1995, 2000, 2005, 2010.
Fellow, Academy of Toxicological Sciences, 2006- present

PROFESSIONAL ACTIVITIES:

1. **Society of Toxicology:**

Technical Committee, 1981-1982; Chairman, 1983
Membership Committee, 1984-1987
Program Committee, 1987-1989; 1994-1995
Board of Publications, 1993-1997
Finance Committee, 1989-1991(Chairman); 1994-1997
Awards Committee, 1997-1998 (Chairman)
Toxicology Education Foundation, 1994-1998
Nominations Committee (Chairman), 1998-1999
Treasurer, 1989-1991
Councilor, 1991-1993
Vice President Elect, 1994
Vice President, 1995

President, 1996-1997
Past-President, 1997-1998
Nominations Committee (elected from Past-Presidents), 2000-2001
Ad Hoc Committee on Risk Evaluation of Mixtures: 2003-2006
Audit Review Committee, Chair, 2007-2010
Continuing Concepts in Toxicology Committee, 2010-present.
Society of Toxicology Specialty Section: Mechanisms; Mixtures
Associate Editor: Toxicol. Appl. Pharmacol., 1989-92.
Continuing Education Lecture, 2000 SOT Annual Meeting: "How to Effectively Talk to the Public"; re-presented at 2000 SETAC Annual Meeting and 2001 Spring Meeting of MISOT.

2. **North Carolina Chapter, Society of Toxicology:**

Secretary/Treasurer, 1983-1985
Newsletter Editor, 1985-1986
Acting Secretary/Treasurer, 1985-1986 (6 mos.);
Vice President, 1986

3. **Michigan Regional Chapter, Society of Toxicology:**

President Elect, 1988-1989
President, 1989-1990
Past President, 1990-1991

4. **Editorial Boards:**

Toxicol. Appl. Pharmacol., 1981-1989; Associate Editor, 1989-1992; Acquisition Specialty Editor, 2003-present
Dose Response (formerly Non-linearity in Biology, Toxicology and Medicine), 2002-present
Current Protocols in Toxicology, Co-Editor, 2005-2009
Environmental Health Perspectives, 2008-present
Toxicol. Industrial Health, 1986 - 1995
Reproductive Toxicology, 1986-1997
Toxicology Update, 1996-1997

5. **International Union of Toxicology (IUTOX):**

Program Committee, ICTVII, Seattle, WA, 1995
Program Committee, ICT VIII, Paris, France, 1998
Councilor from Society of Toxicology, 1998-1999
Director, IUTOX, 1998-2001

6. **American Board of Toxicology**:

   Board of Directors: 1983-1987
   Vice President, 1985-1986
   President, 1986-1987

7. **Board of Trustees, Covenant College**, Lookout Mountain, TN, 1984-1987; Academic Affairs Committee, 1984-1987.

8. **Safety Assessment Board of Advisors**, Merck, Sharp and Dohme Laboratories, West Point, PA, 1985-1986.

9. **Pharmaceutical Manufacturers Association**, DRUSAFE In vitro Toxicology Task Force, 1986-1989.

10. **Co-Editor, Patty's Industrial Hygiene and Toxicology**, Volume 3B, 4th Ed.: Theory and Rationale of Industrial Hygiene Practice: Biological Responses; J. Wiley & Sons, NY, 1995.

11. **American Conference for Governmental Industrial Hygienists (ACGIH):** Threshold Limit Value (TLV) Hydrogen, Oxygen and Carbon (HOC) Compound Toxicology Subcommittee, September 1993-2002. Member, Committee to assess approaches to Control Banding, 2005-2007.

12. **United States Environmental Protection Agency:** Board of Scientific Counselors, Office of Research and Development, 1996-2003; Chartered Science Advisory Board, USEPA, 2003-2009; EPA SAB STAA Cmt., 2006-present.

13. **National Institute of Environmental Health Sciences, National Toxicology Program:** Board of Scientific Counselors, Technical Reviews Subcommittee, 1997-2000. Invited Participant, NTP Program for the 21st Century Strategic Retreat, August 10-12, 2004.

14. **CIIT, Centers for Health Research (Hamner Institutes after 2008):** Development Committee, 1994-1997; Science Program Committee, 1997-2008 (Co-Chair, 1998-2008); Board of Directors, 1997-2007, Hamner: 2008-present; Executive Committee, 1998-2007, Hamner: 2008-present; Board Secretary, 2006-2007, Hamner: 2008-present.

15. **American Chemistry Council (ACC):** Chorine Chemistry Council, Science Committee, 1997-1998; Strategic Science Team, Long-Range Research Initiative (Chair), 1998-2005, member 1998-present.

16. **International Council of Chemical Associations (ICCA)**: Chair, Long-Range Research Initiative Planning Group, 2000-present. Member, Organizing Cmt., International

Conference on Biomonitoring, 2006, 2007, 2008.

17. **International Life Sciences Institute Health and Environmental Sciences Institute (ILSI-HESI):** Emerging Issues Steering Team, 1998-2006, Vice-Chairman, 1999-2000, Chairman, 2001-2003; Board of Trustees, 2002-2004.

18. **Biological Effects of Low Level Exposures (BELLE; University of Massachusetts):** BELLE Advisory Committee, 2001- present.

19. **Toxicology Forum:** Program Committee, 1997-present; Awards Committee, 2005-present.

20. **National Academy of Sciences/National Research Council**:

- Committee on Emerging Issues and Data on Environmental Contaminants, 2002-2006
- Board of Environmental Studies and Technology (BEST), 2005 – 2011.
- Committee on How Toxicogenomics Could Inform Critical Issues in Carcinogenic Risk Assessment of Environmental Chemicals, Workshop Report "Toxicogenomic Technologies and Risk Assessment of Environmental Carcinogens" National Academies Press, Wash.DC, 2005
- Report Committee "Use of Toxicogenomics in Predictive Toxicology, 2005-2007.
- Institute of Medicine Roundtable "Global Environmental Health in the 21st Century: From Government Regulations to Corporate Social Responsibility", Presentation: "The REACH Initative: Can it Realistically be Achieved?", Oct.13, 2004.

21. **United States Food and Drug Administration, National Center for Toxicology Research (NCTR):** Science Advisory Board, 2006-2010.

22. **National Institute of Environmental Health Sciences:** Superfund Basic Research Program, External Advisory Group, 2003.

23. **Purdue University:** School o f Health Sciences Industrial Hygiene Advisory Council; 1995-present.

24. **University of Michigan:** School of Public Health, Department of Environmental Sciences, *ad hoc* Advisory Committee for the Environmental Health Sciences Institute, June, 2001.

25. **Michigan State University:** External Consultant Review Team, Institute for Environmental Toxicology, Sept. 2002.

26. **Academy of Toxicological Sciences:** Member, Board of Directors, 2008-present; Vice-President, 2010 (President, 2011-12).

AWARDS AND HONORS:

1. National Institutes of Health Predoctoral Fellowship, 1971-1975.

2. Young Investigator in Pulmonary Research Grant, "Paraquat Lung Toxicity," National Heart, Lung and Blood Institute, 1975-1976, $30,000, University of Cincinnati.

3. Award of Excellence: Granted by the Chemical Industry Institute of Toxicology, September, 1978.

4. Society of Toxicology Achievement Award: Granted by the Society of Toxicology for Outstanding Contributions to the Science of Toxicology, 1987.

5. Robert A. Scala Award; Granted by the Environmental and Occupational Health Sciences Institute, Rutgers University, for outstanding contributions to the science of toxicology by an industry toxicologist, 1999.

6. Distinguished Alumnus Award, Michigan State University, Department of Pharmacology and Toxicology, October, 2001.

7. Society of Toxicology Founders Award. Granted by the Society of Toxicology for "demonstration of outstanding leadership in fostering the role of toxicological sciences in safety decision-making through development and/or application of state-of-art approaches that elucidate, with a high degree of confidence, the distinctions for humans between safe and unsafe levels of exposures to chemical and physical agents." 2010.

PUBLICATIONS:

1. Bus, J.S. and J.E. Gibson: "Effect of Phenobarbital and SKF 525-A on the Toxicity, Elimination and Metabolism of Cyclophosphamide in Newborn Mice," J. Pharmacol. Exptl. Ther. 184:749-756 (1973).

2. Bus, J.S. and J.E. Gibson: "Teratogenicity and Neonatal Toxicity of Ifosfamide in Mice," Proc. Soc. Exptl. Bior. Med. 143:965-970 (1973).

3. Bus, J.S. and J.E. Gibson: "Bidrin: Perinatal Toxicity and Effect on Development of Acetylcholinesterase and Choline Acetyltransferase in Mice," Fd. Cosmetics Toxicol. 12:313-332 (1974).

4. Drach, J.C., J.S. Bus, S.K. Schultz, and J.N. Sandberg: "Biotransformation of 9-β-D Arabinofuranosyladenine by Rat and Human Erythrocytes," Biochem. Pharmacol. 23:2761-2767 (1974).

5. Bus, J.S., S.D. Aust, and J.E.Gibson: "Superoxide-and Singlet Oxygen Catalyzed Lipid

Peroxidation as a Possible Mechanism for Paraquat (Methyl Viologen) Toxicity," Biochem. Biophys. Res. Comm. 58:749-755 (1974).

6. Bus, J.S., M.M. Preache, S.Z. Cagen, H.S. Posner, B.C. Eliason, C.W. Sharpe, and J.E. Gibson: "Fetal Toxicity and Distribution of Paraquat and Diquat in Mice and Rats," Toxicol. Appl. Pharmacol. 33:450-460 (1975).

7. Bus, J.S. and J.E. Gibson: "Postnatal Toxicity of Chronically Administered Paraquat in Mice and Interactions with Oxygen and Bromobenzene," Toxicol. Appl. Pharmacol. 33:461-470 (1975).

8. Bus, J.S., S.D. Aust, and J.E. Gibson: "Lipid Peroxidation: A Possible Mechanism for Paraquat Toxicity," Res. Comm. Chem. Pathol. Pharmacol. 11:31-38 (1975).

9. Bus, J.S., S.Z. Cagen, M.K. Olgaard, and J.E. Gibson: "A Mechanism of Paraquat Toxicity in Mice and Rats," Toxicol. Appl. Pharmacol. 35:500-513 (1976).

10. Cagen, S.Z., A.S. Janoff, J.S. Bus, and J.E. Gibson: "Effect of Paraquat (Methyl Viologen) on Liver Function in Mice," J. Pharmacol. Exptl. Ther. 198:222-228 (1976).

11. Bus, J.S., A.D. Aust, and J.E. Gibson: "Paraquat Toxicity: Proposed Mechanism of Action Involving Lipid Peroxidation," Environm. Hlth. Perspect. 16:139-146 (1976).

12. Bus, J.S., S.D. Aust, and J.E. Gibson: "Lipid Peroxidation as a Proposed Mechanism for Paraquat Toxicity," in Biochemical Mechanisms of Paraquat Toxicity, A.P. Autor, ed., Academic Press, Inc., New York, pp. 157-176 (1977).

13. Bus, J.S., A. Vinegar, and S.M. Brooks: "Biochemical and Physiological Changes in Lungs of Rats Exposed to a Cadmium Chloride Aerosol," Amer. Rev. Respir. Dis. 118:573-580 (1978).

14. Gelman, B.B., I.A. Michaelson, and J.S. Bus: "The Effect of Lead on Oxidative Hemolysis and Erythrocyte Defense Mechanisms in the Rat," Toxicol. Appl. Pharmacol. 45:119-129 (1978).

15. Bus, J.S. and J.E. Gibson: "Lipid Peroidation and its Role in Toxicology," Reviews in Biochemical Toxicology, 1:125-151 (1979).

16. White, E.L., J.S. Bus, and H.d'A. Heck: "Simultaneous Determination of n-Hexane, 2-Hexanone and 2,5-Hexanedione in Biological Tissues by Gas Chromatography-Mass Spectrometry," Biomed. Mass Spectrometry 6(4):169-172 (1979).

17. Rickert, D.E., T.S. Edgar, J.S. Bus, C.S. Barrow, and R.D. Irons: "Benzene Disposition in the Rat after Exposure by Inhalation," Toxicol. Appl. Pharmacol. 49:417-423 (1979).

18. Bus, J.S., E.L. White, R.W. Tyl, and C.S. Barrow: "Perinatal Toxicity and Metabolism of n-Hexane in Fischer-344 Rats after Inhalation Exposure During Gestation," Toxicol. Appl. Pharmacol. 51:295-302 (1979).

19. Dodd, D.E., J.S. Bus, and C.S. Barrow: "Lung Sulfhydryl Changes in Rats Following Chlorine Inhalation," Toxicol. Appl. Pharmacol. 52:199-208 (1980).

20. Gillies, P.J., R.M. Norton, and J.S. Bus: "Effect of 2,5-Hexanedione on Lipid Biosynthesis in Sciatic Nerve and Brain of the Rat," Toxicol. Appl. Pharmacol. 54:210-216 (1980).

21. Gillies, P.J., R.M. Norton, E.L. White, and J.S. Bus: "Inhibition of Sciatic Nerve Sterologenesis in Hexacarbon-lnduced Distal Axonopathy in the Rat," Toxicol. Appl. Pharmacol. 54:217-222 (1980).

22. Greenlee, W.F., J.D.Sun, and J.S.Bus: "A Proposed Mechanism of Benzene Toxicity: Formation of Reactive Intermediates from Polyphenol Metabolites," Toxicol. Appl. Pharmacol. 59:187-195 (1981).

23. Gillies, P.J., R.M. Norton, and J.S. Bus: "Inhibition of Sterologenesis but not Glycolysis in 2,5-Hexanedione-lnduced Distal Axonopathy in the Rat," Toxicol. Appl. Pharmacol. 59:287-292 (1981).

24. Gillies, P.J., R.M. Norton, T.S. Baker, and J.S. Bus: "Altered Lipid Metabolism in 2,5-Hexanedione-lnduced Testicular Atrophy and Peripheral Neuropathy in the Rat," Toxicol. Appl. Pharmacol. 59:293-299, (1981).

25. Bus, J.S., E.L. White, P.J. Gillies, and C.S. Barrow: "Tissue Distribution of n-Hexane, Methyl n-Butyl Ketone, and 2,5-Hexanedione in Rats after Single or Repeated Inhalation Exposure to n-Hexane," Drug Metab. Disp. 9:386-387 (1981).

26. Bus, J. 5.: "n- Hexane Toxicity," CIIT Activities 1(3):3-4 (1981).

27. Dodd, D.E., J.S. Bus, and C.S. Barrow: "Nonprotein Sulfhydryl Alterations in F-344 Rats Following Acute Methyl Chloride Inhalation," Toxicol. Appl. Pharmacol. 62:228-236 (1982).

28. Chapin, R.E., R.M. Norton, J.A. Popp, and J.S. Bus: "The Effects of 2,5 Hexanedione on Reproductive Hormones and Testicular Enzyme Activities in the F-344 Rat," Toxicol. Appl. Pharmacol. 62:262-272 (1982).

29. Irons, R.D., W.F. Greenlee, D. Wierda, and J.S. Bus: "Relationship Between Benzene Metabolism and Toxicity: A Proposed Mechanism for the Formation of Reactive Intermediates from Polyphenol Metabolites," in Biological Reactive Intermediates 11 (R.

Snyder, D.V. Parke, J.J. Kocsis, D.J. Jollow, C.G. Gibson, and C.M. Wilmer, eds. J, Plenum Publishing Corporation, NY, pp. 229-243, (1982).

30. Bus, J.S., D. Deyo, and M. Cox: "Dose-Dependent Disposition of n-Hexane in F-344 Rats after Inhalation Exposure," Fund. Appl. Toxicol. 2 226-229 (1982).

31. Kornbrust, D.J., J.S. Bus, G. Doerjer, and J.A. Swenberg: "Association of Inhaled 14C-Methyl Chloride with Macromolecules from Various Rat Tissues," Toxicol. Appl. Pharmacol. 65(1):122-134(1982).

32. Kornbrust, D.J. and J.S. Bus: "Metabolism of Methyl Chloride to Formate in Rats," Toxicol. Appl. Pharmacol. 65:135-143 (1982).

33. Bus, J.S.: "Integrated Studies of Methyl Chloride Toxicity," CIIT Activities 2(1):3-5 (1982).

34. Bus, J.S.: "Biochemical Mechansims Underlying the Toxic Action of Chemicals," in Structure Activity Correlation as a Predictive Tool in Toxicology Fundamentals, Methods and Applications, L. Goldberg, ed., Hemisphere Publishing Corporation, New York, 51-59 (1983).

35. Chapin, R.E., K.T. Morgan, and J.S. Bus: "The Morphogenesis of Testicular Degeneration Induced in Rats by Orally Administered 2,5-Hexanedione," Exp. Molec. Path. 38:149-169 (1983).

36. Kornbrust, D.J. and J.S. Bus: "The Role of Glutathione and Cytochrome P-450 in the Metabolism of Methyl Chloride," Toxicol. Appl. Pharmacol. 67:246-256 (1983).

37. Bus, J.S. and J.E. Gibson: "Mechanisms of Superoxide Radical-Mediated Toxicity," J. Toxicol. - Clin. Toxicol. 19:689-697 (1983).

38. Bus, J.S.: "Oxygen Activation and Lipoperoxidative Mechanisms of Toxicity of Pesticides and Other Xenobiotics," in IUPAC Pesticide Chemistry Human Welfare, and the Environment [Vol. 3, Modes of Action, Metabolism and Toxicology l. (J. Miyamoto et al., eds.), Pergamon Press, New York, pp. 457-462 (1983).

39. Beauchamp, R.O., Jr., J.S. Bus, J.A. Popp, C.J. Boreiko, and L. Golberg: "A Critical Review of the Literature on Carbon Disulfide Toxicity," CRC Crit. Rev. Toxicol. 11(3):169-278 (1983).

40. Bus, J.S. and J.E. Gibson: "Mechanisms of Superoxide-Mediated Toxicity," J. Toxicol. - Clin. Toxicol. 19:689-697 (1983).

41. Bus, J.S.: "Aniline and Nitrobenzene: Erythrocyte and Spleen Toxicity," CIIT Activities 3(12):1,6 (1983).

42. Bus, J.S. and J.E. Gibson: "Paraquat: A Model for Oxidant-Initiated Toxicity," Environmental Health Perspect. 55:37-46 (1984).

43. Bus, J.S. and J.E. Gibson: "Role of Activated Oxygen in Chemical Toxicity," in Drug Metabolism and Toxicity, J.R. Mitchell and M.G. Horning, eds., Raven Press, NY, pp. 21-32 (1984).

44. Beauchamp, R.O., Jr., J.S. Bus, J.A. Popp, C.J. Boreiko, and D. Andjelkovich: "A Critical Review of the Literature on Hydrogen Sulfide Toxicity," CRC Crit. Rev. Toxicol. 13(1):25-97 (1984).

45. Kornbrust, D.J. and J.S. Bus: "Glutathione Depletion by Methyl Chloride and Relationship to Lipid Peroxidation," Toxicol. Appl. Pharmacol. 72:388-399 (1984).

46. White, R.D., R. M. Norton, and J.S. Bus: "The Effect of Buthionine Sulfoximine, an Inhibitor of Glutathione Synthesis, on Hepatic Drug Metabolism in the Male Mouse," Toxicol. Lett. 23:25-32 (1984).

47. Chapin, R.E., R.D. White, K.T. Morgan, and J.S. Bus: "Studies of Lesions Induced in the Testis and Epididymus of F-344 Rats by Inhaled Methyl Chloride," Toxicol. Appl. Pharmacol. 76:328-343 (1984).

48. Bus, J.S.: "Bioactivation of Alkanes," in Bioactivation of Foreign Compounds, M.W. Anders, ed., Academic Press, Orlando, pp. 111-119 (1985).

49. Bus, J.S. and J.E. Gibson: "Body Defense Mechanisms to Toxicant Exposure," in Patty's Industrial Hygiene and Toxicology, Vol. IIIB: Biological Responses, Second edition (L. Cralley and L. Cralley, eds.), John Wiley and Sons, Inc., NY, pp. 143-174 (1985).

50. Bus, J.S.: "The Relationship of Carbon Disulfide Metabolism to Development of Toxicity," Neurotoxicol. 6:73-80 (1985).

51. Gottfried, M.R., D. Graham, M. Morqan, H.W. Casey, and J.S. Bus: "The Morphology of Carbon Disulfide Neurotoxicity," Neurotoxicol. 6:89-96 (1985).

52. Working, P.K., J.S. Bus, and T.E. Hamm, Jr.: "Reproductive Effects of Inhaled Methyl Chloride in the Male Fischer-344 Rats. 1. Mating Performance and Dominant Lethal Assay," Toxicol. Appl. Pharmacol. 77(1):133-143 (1985).

53. Working, P.K., J.S. Bus, and T.E. Hamm, Jr.: "Reproductive Effects of Inhaled Methyl Chloride in the Male Fischer-344 Rats. 11. Spermatogonial Toxicity and Sperm Quality," Toxicol. Appl. Pharmacol. 77(1):144-157 (1985).

54. Kloss, M.W., J. Swenberg, and J.S. Bus: "Sex-Dependent Differences in the Disposition of

[14C-5]-2,2,4-Trimethylpentane in Fischer-344 Rats," in Renal Heterogeneity and Target Cell Toxicity, P.H. Bach and E.A. Lock, eds., John Wiley and Sons, Chichester, pp. 489-492 (1985).

55. Baker, E.L., J.S. Bus, J.M. Cranmer, M.F. Curtis, L. Golberg, P. Grasso, L.W. Keller, W.H. Merigan, R.W. Morgan, R.A. Scala, and A.M. Seppalainen: "Workshop on Neuro-behavioral Effects of Solvents Consensus Summary," Neurotoxicology 6:101-102 (Editorial).

56. John-Greene, J.A., F. Welsch, and J.S. Bus: "Comments on Heart Malformations in B6C3F1 - Mouse Fetuses Induced by Methyl Chloride Continuing Efforts to Understand the Etiology and Interpretation of an Unusual Lesion," Teratology 32:483-487 (Peer-reviewed Letter to Editor).

57. Kloss, M.W. and J.S. Bus: "Hydrocarbon-Mediated Nephrotoxicity," CIIT Activities 5(5):1, 3-4, 8 (1985).

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59. Chellman, G.J., K.T. Morgan, J.S. Bus, and P.K. Working: "Inhibition of Methyl Chloride Toxicity in Male F-344 Rats by the Anti-Inflammatory Agent BW755C," Toxicol. Appl. Pharmacol. 85:367-379 (1986).

60. Working, P.K. and J.S. Bus: "Failure of Fertilization as a Cause of Preimplantation Loss Induced by Methyl Chloride in Fischer-344 Rats," Toxicol. Appl. Pharmacol. 86:124-130 (1986).

61. Chellman, G.J., R.D. White, R.M. Norton, and J.S. Bus: "Inhibition of the Acute Toxicity of Methyl Chloride in Male B6C3F1 Mice by Glutathione Depletion," Toxicol. Appl. Pharmacol. 86:93-104 (1986).

62. Bus, J.S.: "Route of Exposure: An Important Consideration in Animal Selection and the Design of Toxicity Studies," Proc. 1985 Monsanto Toxicology Symposium, (1986).

63. Working, P.K. and J.S. Bus: "Methyl Chloride Toxicity," CIIT Activities 6(8):1, 3-6 (1986).

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65. Charbonneau, M., E.A. Lock, J. Strasser, M.G. Cox, M.J. Turner, and J.S. Bus: "2,2,4-Trimethylpentane-Induced Nephrotoxicity. 1. Metabolic Disposition of TMP in Male and

Female Fischer 344 Rats," Toxicol. Appl. Pharmacol. 91:171-181 (1987).

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67. Bus, J.S. and J.A. Popp: "Perspectives on the Mechanism of Action of the Splenic Toxicity of Aniline and Structurally-Related Compounds," Fd. Chem. Toxic. 25(8):619-626 (1987).

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75. Bus, J.S. and J.E. Gibson: "Body Defense Mechanisms to Toxicant Exposure," in Patty's Industrial Hygiene and Toxicology, Vol. IIIB: Biological Responses, 3rd edition (L. Cralley and L. Cralley, J. Bus eds.), John Wiley and Sons, Inc., NY, 1995.

76. Gingell, R., R.J. Boatman, J.S. Bus, T.J. Crawley, J.B. Knaak, W.J. Krasavage, N.P. Skoulis, C.R. Stack, and T.R. Tyler: "Glycol Ethers and Other Selected Glycol Derivatives," in Patty's Industrial Hygiene and Toxicology, Vol IIC: Toxicology, 4th Ed. (G.D. Clayton and

F.E. Clayton eds.), John Wiley and Sons, NY, 1995.

77. Charles, J.M., D.W. Dalgard,., H.C.Cunny, R.D. Wilson, and J.S. Bus.: "Comparative subchronic and chronic dietary toxicity studies on 2,4-dichlorophenoxyacetic acid, amine and ester in the dog," Fund. Appl. Toxicol. 29: 78-85 (1995).

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76. Bus, J., Oliver, G., Bolles, H., Wright, J, and Shurdut, B.: "Chemical risk assessment in

theory and practice: Implications for accuracy of exposure assessments" 4th Congress of Toxicology in Developing Countries, Nov. 6-10, 1999, Antalya, Turkey. Meeting abstracts, p.66.

77. Bus, J.S.: "Implications of Biomarker Data for the Future of Toxicology and Risk Assessment", invited speaker, SOT Workshop "CDC's Annual Human Exposure Report: Can Such Biomarker Data be used to Improve Health Risk Assessments and Regulatory Actions?", Toxicologist 66: 214 (2002).

78. Bus, J. and R. Henderson: "Low-dose extrapolation: Time for a Fresh Look at an Old Problem", Society of Toxicology Roundtable Session, 2004 Annual Meeting of the Society of Toxicology.

79. Bus, J.S.: "An open forum discussion on the Canadian role in identifying, characterizing, and addressing environmental health issues on a local and global scale: Perspectives of an US industry toxicologist. 37th Annual Symposium of the Society of Toxicology of Canada, Dec.6-7, 2004, Montreal, Quebec.

80. Bus, J.S: "Seeking mid- and long term career goals: Perspectives of an industry toxicologist," Society of Toxicology 2004 Annual Meeting.

81. Saghir, S.A., A.L. Mendrala, M.J. Bartels, S.J.Day, S.C. Hansen, J.M. Shushynski, and J.S. Bus: Strategies to assess systemic exposure of test material in subchronic studies," Toxicologist 84, abstract 1242 (2005).

82. Bus, J.S: "Developing good MSDS communications in industry," Society of Toxicology 2005 Annual Meeting Sunset Session. Toxicologist 84, abstract 1666 (2005)

83. Saghir, S.A., D.L. Rick, M.J. Bartels, and J.S. Bus: "*In vitro* metabolism of ethylbenzene by rat, mouse and human liver and lung microsomes." Toxicologist, 90: 141 (2006).

84. Bus, J.S., C. Burns, and L.Ritter: "Integrating biomonitoring into epidemiology and toxicology research," Society of Toxicology 2006 Annual Meeting Workshop, Toxicologist 90: 383 (2006).

SELECTED INVITED PRESENTATIONS AND ACTIVITIES:

1. Bus, J.S.: "Paraquat Toxicity: A Proposed Mechanism of Toxicity Involving Lipid Peroxidation," SOT Symposium on Target Organ Toxicity: Lung, Cincinnati, OH, 1975.

2. Bus, J.S.: "Role of Lipid Peroxidation in Paraquat Toxicity," symposium on Biochemical Mechanisms of Paraquat Toxicity, Iowa City, IA, 1976.

3. Bus, J.S. and P.J. Gillies: "Role of Lipid Metabolism in Hexacarbon Neuropathy," symposium on Unresolved Mechanisms of Toxicity, Anuual Meeting of SOT, Washington, D.C., 1980.

4. Bus, J.S. and J.E. Gibson: "Role of Activated Oxygen in Chemical Toxicity," ASPET Workshop on Drug Metabolism and Toxicity,
Houston, TX, 1980.

5. Bus, J.S.: "Biochemical Mechanisms Underlying the Toxic Action of Chemicals," symposium on Structure-Activity Relationships in Toxicology, Chemical Industry Institute of Toxicology, and Environmental Protection Agency, Raleigh, NC, 1981.

6. Bus, J.S. and J.E. Gibson: "Mechanisms of Free-Radical-Mediated Toxicity," Annual Meeting of American Chemical Society, Las Vegas, NV, 1982.

7. Bus, J.S.: "Oxygen Activation and Lipoperoxidative Mechanisms of Toxicity of Pesticides and other Xenobiotics," invited poster and discussion, 5th International Congress of Pesticide Chemistry (IUPAC), Kyoto, Japan.

8. Bus, J.S.: "Toxicity and Metabolism of Carbon Disulfide," Second International Conf. Neurotoxicol. of Selected Chemicals: Acrylamide, Hexacarbons, IDPN and Carbon Disulfide, Chicago, IL, Sept., 1983 (J. Bus, co-chairman of hexacarbon and carbon disulfide symposiums).

9. Bus, J.S.: "Renal Injury and Carcinogenesis," Society of Toxicology Continuing Education Course, 24th Annual Meeting of the Society of Toxicology, San Diego, CA, 1985.

10. Bus, J.S.: "Activated Oxygen as a Product of Drug Metabolism: Role in Drug Toxicity," Second Annual Meeting of the Drug Metabolism Subsection of the Pharmaceutical Manufacturers Assoc., Atlanta, GA, Sept., 1985.

11. Bus, J.S.: "Route of Exposure: An Important Consideration in Animal Selection and the Design of Toxicity Studies," Monsanto Toxicology Symposium, St. Louis, MO, Oct. 31, 1985.

12. Bus, J.S.: Workshop on Neurobehavioral Effects of Solvents, Rapporteur for Session: Study of Solvent Effects in Animals, Raleigh, NC, Oct. 14-16, 1985.

13. Bus, J.S.: "Participant: Hydrocarbon Nephrotoxicity Scientific Advisory Group, The Proctor and Gamble Company, Sept. 25, 1985.

14. Bus, J.S.: "Animal Models in Chemical Toxicity: Are They Always Predictive of Toxic Effects in Other Species?", 78th Ann. Mtg. of Amer. Soc. Animal Science, Kansas State

University, Manhattan, KS, July 31, 1986.

15. Bus, J.S.: "Hyaline Droplet-Type Nephrotoxicity: Its Potential Role in Male Rat Specific Cancer Induced by Unleaded Gasoline and Other Compounds," symposium on Non-Genotoxic Carcinogens: Extent of Carcinogenic Hazard, ASPET-SOT Joint Meeting, Baltimore, MD, Aug. 19, 1986.

16. Bus, J.S.: "Mechanisms: Chemical Induction of Alpha 2u-Globulin Nephropathy," Toxicology Forum, Aspen, CO, July 15, 1986.

17. Bus, J.S.: workshop participant, "Harmonization of Cancer and Noncancer Risk Assessment: Proceedings of a concensus-building workshop.", Tox. Sci. 61: 18-31 (2001).

18. Research seminars at various institutions including: Duke University, Durham, NC; Michigan State University, E. Lansing, MI; Univ. of Kansas, Lawrence, KS; New Jersey Medical School, Newark, NJ; Univ. of Cincinnati, Cincinnati, OH; Vanderbilt University, Nashville, TN; Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM; General Motors Research Labs, Warren, MI; Exxon Corp., REHD, E. Millstone, NJ; Mobil Oil Corp., Princeton, NJ; Dow Chemical Co., Midland, MI; Merck, Sharp and Dohme, West Point, PA; U.S. Environmental Protection Agency, Washington, DC; Imperial Chemical Industries, Ltd., Macclefield, Cheshire, U.K.; Mitre Corp., McClean, VA; University of Texas, Austin; Medical College of Ohio, Toledo, OH; Purdue University, E. Lafayette IN; Wayne State University, Detroit, MI.; Texas A&M University, College Station, TX; University of Washington, Seattle, WA.

SELECTED LECTURES:

1. Bus, J.S.: "Modes of Toxic Action of Systemic Agents on the Lung," Univ. N. Carolina, Pharmacology 207-Advanced Toxicology, 1980-1985.

2. Bus, J.S.: "Biochemical Mechanisms of Toxicity," North Carolina State Univ. and N.C. Chapter, Society of Toxicology, Special Problems in Toxicology, 1981.

3. Bus, J.S.: "Liver Toxicology and Detoxification Mechanisms," Duke Univ., Pharmacology 354-Mammalian Toxicology, 1982, 1985.

4. Bus, J.S.: "Inhalation Studies Using Radiolabeled Compounds," North Carolina State Univ. and N.C. Chapter, Soc. Toxicol., Special Problems in Toxicol. 590, 1980, 1985 (Sponsored by N.C. State University only).

5. Bus, J.S.: "Teratology and Reproduction," lecturer, American Chemical Society Short Course, Toxicology, Principles and Practice, 1979-1995 (1-2 lectures/year).

8. Bus, J.S.: "Teratology and Reproduction," Michigan State University, Graduate Course "Principles of Toxicology," Dept. Pharmacology andToxicology, 1988, 1990, 1992, 1994, 1996 1998, 2000, 2002.

9. Bus, J.S.: "Male Reproductive Toxicity: Methyl Chloride," Toxicology Update '88, Current Concepts in Reproductive Toxicology, The Johns Hopkins School of Hygiene and Public Health; June 6-8, 1988.

10. Bus, J.S.: "Challenges and Opportunities in Environmental Health: Perspectives of an Industry Toxicologist", Environmental Health and Toxicology Research Symposium, Agency for Toxic Substances and Disease Registry, New Orleans, LA, April 22-24, 1997.

11. Bus, J.S.: "Dose Response Modeling", IBC Conference on New Techniques in Risk Assessment: State-of-the-Art Methods and Future Directions, Orlando, FL, Feb. 12-14, 1996.

12. Bus, J.S.: "Pesticide Effects on Birds: Perspectives of a Mammalian Toxicologist", American Bird Conservancy Symposium *Pesticide Effects on Birds: Beyond the Tip of the Iceberg,* Laurel, MD, Oct. 18-20, 2001.

13. Bus, J.S.: "Dose-Response in Toxicology: Implications for Human Risk Assessment", Spring Seminar Series, Johns Hopkins University, Bloomberg School of Public Health, Risk Sciences and Public Policy Institute, Baltimore, MD, April 29, 2002.

14. Bus, J.S.: "Impacts of Chemicals on the Elderly: Building on Testing and Research Foundations", National Academy of Sciences Workshop on Differential Susceptibility of Older Persons to Environmental Hazards, Dec. 5-6, 2002.

15. Bus, J.S.: "Teratology and Reproduction", Mid-America Toxicology Course, Kansas City, KS, April 1991-2006.

CIIT POST-DOCTORAL FELLOWS:

A. Primary Mentor:

1. Darol Dodd
2. Peter Gillies
3. Douglas Kornbrust
4. Robert Chapin
5. Russell White
6. Philmore Robertson
7. Michelle Kloss
8. Gary Chellman
9. Michel Charbonneau

B. Secondary Mentor:

1. James Sun
2. William Greenlee
3. Arthur Levin
4. Peter Working

C. Served as Host Laboratory for Dr. E.A. Lock, Visiting Scientist from ICI., U.K. (3/1/86 - 8/1/86).

DOW CHEMICAL COMPANY POST-DOCTORAL FELLOW:

1. Lynn Pottenger

REPRESENTATIVE INTERACTIONS WITH UNITED STATES GOVERNMENT AGENCIES:

1. National Institute for Occupational Safety and Health, Review Consultant for Styrene Criteria Document, 1976.

2. National Institute for Environmental Health Sciences, National Toxicology Program:

   RFP Review Consultant, Reproductive Function Parameters, 1981, 1983.

   RFP Review Consultant, Inhalation Pharmacokinetics, 1982.

   RFP Review Consultant, Metabolism Studies, 1985.

   RFP Review Consultant, National Toxicology Program Master Agreement for Toxicity and Carcinogenicity Studies in Laboratory Animals, 1988.

   Review Consultant, Superfund Basic Research Program Review Committee, October, 1991; 1994; 1999.

3. Environmental Protection Agency:

   Lecture: "Teratology and Male Reproduction," Office of Toxic Substances, In-house Toxicology Development Program, 1982.

   Peer Review Workshop, Health Assessment Document for Chloroform, 1982.

   Peer Review Panel: Health Effects Research Laboratory, Toxicology Research Program, Cincinnati, OH, May 20-22, 1986.

   Reviewer: "Summary Health Assessment Document for Xylene," submitted to EPA by Dynamic Corporation, June 1, 1986.

   Peer Review Workshop: "Summary Review of Health Effects Associated with Hydrogen

Sulfide: Health Issue Assessment," Research Triangle Park, NC, July 7-8, 1986.

Peer Review Panel, Methylene Chloride, 1986.

Chairman, Advisory Search Committee for Division Director of Genetic Toxicology, EPA Health Effects Research Laboratory, Research Triangle Park, NC, 1994

Chairman, Peer-review panel for Neurotoxicology Division, EPA NHEERL, Research Triangle Park, 1996.

Chairman, Peer-review panel for Experimental Toxicology Division, EPA NHEERL, Research Triangle Park, 1997.

4. Centers for Disease Control, Lecture: "Teratology and Reproduction," In-house Toxicology Training Program, 1982.

INTERACTION WITH THE WORLD HEALTH ORGANIZATION:

Reviewer: International Program on Chemical Safety, Environmental Health Criteria Documents, "Paraquat" and "Diquat," 1982-1983.

EDWARD J. CALABRESE, PH.D.

CURRICULUM VITAE

August, 2013

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I. SUMMARY:

- Professor of Toxicology at the University of Massachusetts, Amherst since 1976.
- Board Certified in general toxicology by the Academy of Toxicological Sciences since 1982.
- Over 750 publications in peer-reviewed journals.
- Over 600 invited presentations at major conferences and University seminars.
- Author or Co-Author of 26 books.
- Editor or Co-Editor of over 40 monographs and/or conference proceedings.
- Consultant to most environmentally oriented federal agencies.
- Consultant to numerous major U.S. corporations and trade associations.
- Extramural funding since 1976 from all sources exceeds 30 million dollars.
- Founding Editor-in-Chief Human and Ecological Risk Assessment
- Founding Editor-in-Chief Dose-Response Journal
- Honorary Doctor of Science Degree, McMaster University 2013
- Advisory Board for the first graduate training program focused on hormetic mechanisms, Friedrich-Schiller-University, Jena, Germany 2011 to present

II. BIOGRAPHICAL SKETCH:

Edward J. Calabrese is a Professor of Toxicology at the University of Massachusetts, School of Public Health and Health Sciences, Amherst. Dr. Calabrese has researched extensively in the area of host factors affecting susceptibility to pollutants, and is the author of over 750 papers in scholarly journals, as well as more than 10 books, including Principles of Animal Extrapolation; Nutrition and Environmental Health, Vols. I and II; Ecogenetics; Multiple Chemical Interaction; Air Toxics and Risk Assessment; and Biological Effects of Low Level Exposures to Chemical and Radiation. Along with Mark Mattson (NIH) he is a co-editor of the recently published book entitled Hormesis: A Revolution in Biology, Toxicology and Medicine. He has been a member of the U.S. National Academy of Sciences and NATO Countries Safe Drinking Water committees, and on the Board of Scientific Counselors for the Agency for Toxic Substances and Disease Registry (ATSDR). Dr. Calabrese also serves as Chairman of the Biological Effects of Low Level Exposures (BELLE) and as Director of the Northeast Regional Environmental Public Health Center at the University of Massachusetts. Dr. Calabrese was awarded the 2009 Marie Curie Prize for his body of work on hormesis. He is the recipient of the International Society for Cell Communication and Signaling-Springer award for 2010. He was awared an Honorary Dcotor of Science Degree from McMaster University in 2013.

Over the past 20 years Professor Calabrese has redirected his research to understanding the nature of the dose response in the low dose zone and underlying adaptive explanatory mechanisms. Of particular note is that this research has led to important discoveries which indicate that the most fundamental dose response in toxicology and pharmacology is the hormetic-biphasic dose response relationship. These observations are leading to a major transformation in improving drug discovery, development, and in the efficiency of the clinical trial, as well as the scientific foundations for risk assessment and environmental regulation for radiation and chemicals.

CURRICULUM VITAE

Name: Edward J. Calabrese
Date of Birth: [redacted]

Address: [redacted]
Phone: ([redacted]
Fax: [redacted]
E-Mail: edwardc@schoolph.umass.edu

III. ACADEMIC TRAINING

University of Massachusetts at Amherst, MA	1972-1974	Education Science Ed.	Ed.D.	1974
University of Massachusetts at Amherst, MA	1971-1973	Physiology/ Toxicology (Entomology Department)	Ph.D.	1973
State College at Bridgewater, MA	1969-71	Biology	M.A.	1972
State College at Bridgewater, MA	1964-68	Biology	B.A.	1968

IV. WORK EXPERIENCE

Graduate Program Director, Environmental Health Sciences Department, December 2003-2004.

Division Chair, Environmental Health Sciences Division, December 2003-2006.

Director - Northeast Regional Environmental Public Health Center,
October 1985-Present.

Professor - Promoted from Associate Professor, June 1982-Present.

Associate Professor - Promoted from Assistant Professor, June 1980.

Assistant Professor - September 1976 - Environmental Health Sciences Program, Division of Public Health, University of Massachusetts, Amherst, MA. Duties include: teaching introductory and advanced courses in environmental toxicology, directing thesis research.

Assistant Professor - July 1974-August 1976 - Department of Occupational and Environmental Medicine, University of Illinois, School of Public Health, and Assistant Director of the Environmental Health Resource Center. Duties included: the identification and quantification of present and potential environmental health hazards within the state, the development and review of environmental health legislation, standards and regulations, testimony at regulatory and legislative hearings on standards of environmental quality and teaching courses in environmental health.

Environmental Research Director for the Massachusetts Public Interest Research Group - December 1973-June 1974. Duties included: determination of research and educational goals of the organization, direction of student research projects, direction of Water Quality Training Institutes throughout Massachusetts.

Adjunct Professor - Southwest Residence College - University of Massachusetts. January 1974. Taught environmental science courses to undergraduate and graduate students.

Assistant Professor - Fall 1973 - North Adams State College, North Adams, MA. Biology Department - taught Ecology, Evolution, and Introductory Biology.

V. GRANTS AND RESEARCH FUNDING

Principal Investigator. Air Force Office of Scientific Research. Enhancing Biological Performance: Occurrence, Mechanisms and Applications. 2013-2018. ($1,197,558).

Principal Investigator. ExxonMobil. Hormesis Research. 2007-2013. ($150,000 per year).

Director. Hormesis Conference general support. Multiple public and private organizations. 2010-2013. (Approximately $50,000).

Principal Investigator. Air Force Office of Scientific Research. Conference on Adaptive Responses and their Biomedical Applications. 2012. ($25,544).

Principal Investigator. Air Force Office of Scientific Research. Conference on Adaptive Responses and their Biomedical Applications. 2011. ($25,580).

Principal Investigator. Lounsbery Foundation. Development of an Integrative Mechanistic Framework. 2010-2012. ($25,000)

Principal Investigator. Air Force Office of Scientific Research. Chemical/Radiation Hormesis Database, Evaluation of Hormetic Mechanisms & Their Biomedical and Risk Assessment Implications. 2008-2010. ($299,371).

Director. Hormesis Conference general support. Multiple public and private organizations. 2008-2009. (Approximately $120,000).

Principal Investigator. Air Force Office of Scientific Research. Chemical/Radiation Hormesis Database, Evaluation of Hormetic Mechanisms & Their Biomedical and Risk Assessment Implications. 2007. ($84,778).

Principal Investigator. Air Force Office of Scientific Research. Chemical/Radiation Hormesis Database, Evaluation of Hormetic Mechanisms & Their Biomedical and Risk Assessment Implications. 2007. ($199,845).

Director. Hormesis Conference general support. Multiple public and private organizations. 2007. (Approximately $150,000).

Director. Hormesis Conference general support. Multiple public and private organizations. 2006. (Approximately $100,000).

Principal Investigator. Alfred P. Sloan Foundation. Hormesis Center. 2004-2007. ($45,000).

Principal Investigator. Dow Chemical Co. Distributions for Monte-Carlo Soil Ingestion Risk Assessment. 2004-2007. ($160,470).

Principal Investigator. Lounsbery Foundation. Workshop to Create a Hormesis Institute/Center. 2005-2007. ($75,000).

Principal Investigator. ExxonMobil. Hormesis Research. 2006. ($150,000).

Principal Investigator. Air Force Office of Scientific Research. Chemical/Radiation Hormesis Database, Evaluation of Hormetic Mechanisms & Their Biomedical and Risk Assessment Implications. 2006. ($214,645).

Principal Investigator. ExxonMobil. BELLE – Chemical Hormesis Database. 2005. ($150,000).

Principal Investigator. Air Force Office of Scientific Research. Chemical/Radiation Hormesis Database, Evaluation of Hormetic Mechanisms & Their Biomedical and Risk Assessment Implications. 2005. ($211,026).

Principal Investigator. U.S. Department of Energy. International Conference – Hormesis Implications for Toxicology, Medicine, and Risk Assessment. 2005-2006. ($5,000).

Principal Investigator. Dow Chemical Co. Distributions for Monte-Carlo Soil Ingestion Risk Assessment. 2004-2006. ($160,470).

Principal Investigator. Alfred P. Sloan Foundation. Hormesis Center. 2004-2006. ($45,000).

Principal Investigator. U.S. Department of Energy. Non-Linear Dose Response Relationship in Biology, Toxicology and Medicine. 2004-2005. ($20,000).

Principal Investigator. General Electric Foundation. BELLE Initiative. 2004. ($100,000).

Principal Investigator. ExxonMobil. BELLE – Chemical Hormesis Database. 2004. ($75,000).

Principal Investigator. Air Force Office of Scientific Research. Chemical/Radiation Hormesis Database, Evaluation of Hormetic Mechanisms & Their Biomedical and Risk Assessment Implications. 2004. ($174,302).

Principal Investigator. U.S. Department of Energy. Non-Linear Dose Response Relationship in Biology, Toxicology and Medicine. 2003-2004. ($12,500).

Principal Investigator. Florida Power and Light. Assessment of Arsenic Bioavailability in Humans. 2002-2003. (~$110,000).

Principal Investigator. Air Force. Toxicological Assessment of Hormesis. 2001-2003. ($450,000).

Principal Investigator. US EPA/American Chemical Council. Soil Ingestion in Construction Workers. 2001-2003. ($750,000).

Co-Principal Investigator. Health Risks and Fish Consumption from the Pasiac River. 2001-2002. ($125,000).

Principal Investigator. CA EPA. Single Exposure Carcinogen Database Update and Evaluation. 2002. ($50,000).

Co-Director. 11th Annual Soil and Groundwater Conference. San Diego, CA. March 2002. ($100,000).

Co-Director. 18th Annual Soil, Groundwater and Sediment Contamination Conference. University of Massachusetts. October 2001. ($125,000).

Principal Investigator. Conference on Non-Linear Dose-Response. Multiple sponsors (EPA, NIEHS, AWWARF, Air Force, and other). June 2001. ($150,000).

Co-Director. International Conference on Contaminated Soil, Sediment, and Groundwater. London. August 2000. ($300,000).

Co-Principal Investigator. Soil ingestion workshop/assessment. U.S. EPA. June/July 2000. ($50,000).

Principal Investigator. Soil ingestion in construction workers. U.S. EPA/CMA. October, 1999 ($650,000).

Principal Investigator. Development of an ionizing radiation hormesis database. Nuclear Regulatory Commission. September 1997 - September 1999 ($188,000).

Principal Investigator. Biological effects of low level exposures. Three year cooperative agreement. Reviewed once, 1999. Nuclear Regulatory Commission, 1996-1998, 1999-2001. ($60,000 or $20,000/year).

Principal Investigator. Assessment of soil ingestion in children. Health Canada. January 1999 ($6,500).

Principal Investigator. Biological effects of low level exposures (BELLE). From multiple sponsors. 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004. (approx. $120,000/year from multiple sources).

Co-Principal Investigator. Florida Power and Light. Biological effects of arsenic contaminated soil. January 1998 ($100,000), March 1999 ($50,000).

Principal Investigator. ARCO. Assessment of the role of particle size on soil ingestion estimates in children. June 1997 ($150,000).

Principal Investigator. Health Research Foundation (Japan). Biological effects of low level exposures. September 1997 ($15,000).

Principal Investigator. U.S. Air Force. Assessment of the societal and scientific implications of hormesis. October 1997 - October 2000 ($345,000).

Principal Investigator. U.S. EPA. Single exposure carcinogen database. October 1997 – May 1999 ($75,000).

Principal Investigator. GE Foundation. Biological effects of low level exposures (BELLE). October 1997 ($15,000).

Co-Principal Investigator. EPA. Assessment of groundwater contamination by MTBE. September 1997 ($43,000).

Principal Investigator. Exxon. Biological effects of low level exposures. 1996-1999 $20,000/year. ($80,000).

Principal Investigator. Dow-Corning. Biological effects of low level exposures. 1996-1999 $10,000/year. ($40,000).

Principal Investigator. Canadian Electric Utilities. Biological effects of low level exposures. 1996 ($10,000).

Co-Director. Bitor-Venezuela. Evaluation of the endocrine disruption potential of surfactants. June 1996 ($447,000).

Co-Principal Investigator. Massachusetts Department of Environmental Protection. Determination of heavy metal background levels. June 1996 ($23,000).

Principal Investigator. ARCO. Assessment of the role of particle size on soil ingestion estimates in children. June 1996 ($150,000).

Principal Investigator. Radiation, Science and Health, Inc. Critical assessment of selected literature on radiation hormesis. December 1996 ($26,000).

Principal Investigator. Environmental effects of Orimulsion. December 1996 ($836,000).

Principal Investigator to support BELLE related activities. January 1995. RJReynolds, Inc., $25,000; Electric Power Research Institute, $10,000; Dow Corning, $10,000; and Canadian Electric Utilities, $10,000.

Principal Investigator. RJReynolds, Inc. The effects of low levels of chemical agents on biological responses. February 1995 ($25,000).

Principal Investigator to assess soil ingestion in children living in Northwest of the U.S. ARCO. September 1992 - June, 1996 ($748,000).

Principal Investigator. Louisiana DEQ. Assessment of soil ingestion in children. June 1995 ($50,000).

Principal Investigator. US EPA. An evaluation of gender differences in susceptibility to toxic substances. June 1995 ($55,000).

Principal Investigator. US EPA. Single exposure carcinogen database. October 1995 ($75,000).

Principal Investigator. Health Canada. Develop new methodologies to assess human high risks. November 1994 ($60,000).

Principal Investigator to direct BELLE activities. EPRI, Dow Corning, Center for Indoor Research, and EPA. October 1994 ($55,000).

Principal Investigator. Florida Power and Light. Development of a framework to conduct an ecological risk assessment on Tampa Bay. April 1994 ($140,000).

Principal Investigator. Gillette, Inc. Support of BELLE-related activities. May 1994 ($3,000).

Principal Investigator. Florida Power and Light. Assess the effects of several types of fuel oil on red blood cells. September 1994 ($31,000).

Co-Director of a series of conferences on petroleum contaminated soil. Held at the University of Massachusetts, Amherst. 1985, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002. Approximately $100,000/conference from external co-sponsors.

Co-Director of a series of conferences on soil and groundwater contamination. Held in the greater Los Angeles area. 1989-2002. $100,000/year.

Principal Investigator on a grant to assess interspecies differences in hepatic peroxisomes proliferation and its role in the development of fish tumors. Department of Defense, U.S.A. April 1988-1993 ($749,000).

Florida Power and Light. Critical Evaluation of the PM_{10} standard. November 1993 ($20,000).

Principal Investigator to direct BELLE activities: EPRI, Dow Corning, Center for Indoor Research, and others. April 1993 (approx. $50,000).
Principal Investigator to assess single exposure carcinogens. ATSDR/September 1993 ($50,000).

Principal Investigator to assess the prevalence of soil pica in children and soil ingestion in children with soil pica. State of Colorado. July 1992 ($151,000).

Principal Investigator to direct the development of a newsletter on the Biological Effects of Low Level Exposures (BELLE). U.S. EPA. September 1992 ($60,000).
Director of the Council for Health and Environmental Safety of Soils Funded by EPA, ATSDR and other organizations. 1988 – 1992 ($150,000/yr.)

Principal Investigator. U.S. EPA. Lead Training Center. March 1992 ($320,000); October 1993 ($220,000); October 1994 ($290,000).

Co-Director of National Conference on Hydrocarbon Contaminated Soils. From multiple agencies/organizations. ($70,000).

Co-principal Investigator - Development of risk assessment methods for human and ecological risks. Health and Welfare Canada. April 1 1992 ($75,000).

Co-principal Investigator for Regional Lead Training Center. U.S. EPA. April 1992 ($250,000).

Principal Investigator to conduct national conference on the Biological Effects of Low Level Exposures to Chemicals and Radiation. NIEHS. April 1992 ($10,000).

Principal Investigator to support research activities concerning the biological effects of low level exposures (BELLE). Ontario Hydro. January-May 1992 ($20,000); RJR-Nabisco ($35,000); EPRI ($10,000).

Principal Investigator to assess the effects of selected oxidant stressor contaminants on red blood cells. State of Colorado. May 1992 ($44,000).

Principal Investigator to assess factors assessing the siting of waste sites in the U.S. Waste Management Inc. June 1992 ($200,000).

Principal Investigator to assess environmental factors affecting stream health. Wyman-Gordon, Co. July 1992 ($135,000).

Co-Director of the Hydrocarbon Contaminated Soil and Groundwater Conference. Newport Beach, California. 1991 - co-sponsorship $100,000 (approx.).

Principal Investigator to unrestricted support on predictive toxicology. Proctor and Gamble. June 1991 ($5,000).
Co-principal Investigator to develop a toxicological based risk communication program for lead in water. U.S. EPA. August 1991 ($50,000).

Co-Director of the 6th Annual Hydrocarbon Conference. Sept. 1991 (combined sponsorship $100,000. From multiple agencies, federal, state and private sector).

Principal Investigator of a project to differentiate soil and dust ingestion in children. U.S. EPA. Sept., 1991 ($50,000).

Principal Investigator to support research activities concerning the biological effects of low level exposures (BELLE). Dow Chemical. November 1991 ($5,000).

Principal Investigator to support research activities concerning the biological effects of low level exposures. RJR Nabisco, Inc. July 1990 ($45,000).

Principal Investigator-Evaluation of the health basis for EPA's regulations of SOTs and IOCs in drinking water. American Water Works Association Research Foundation. July 1990 ($100,000).
Principal Investigator on contract to assess the relative potency of methemoglobin forming agents. EPA. July 1990 ($28,000).

Principal Investigator-Methemoglobin forming agents: Toxicologic and risk assessment. EPA. August 1990 ($28,000).

Principal Investigator to support research activities concerning the biological effects of low level exposures. Dow Chemical. November 1990 ($10,000).

Principal Investigator to support research activities concerning the biological effects of low level exposures. The Electric Power Research Institute. December 1990 ($10,000).

Co-Director of the Hydrocarbon Contaminated Soil and Groundwater Conference. Newport Beach, California. 1990 - co-sponsorship $100,000 (approx.).

Principal Investigator of a contract to assess the Public Health risks associated with medical waste. Funded by the Rockefeller Institute of Government, Albany, New York. January 1989 ($15,000).

Co-Principal Investigator on a grant to assess factors affecting heavy metal tissue distribution in selected fish species. General Electric. July 1989 ($112,500).

Co-Principal Investigator on a grant to assess public health aspects of soil contaminated with petroleum. U.S. EPA. July 1989 ($43,000).

Principal Investigator to continue research on how to estimate how much soil children ingest. Gradient Corporation. August 1989 ($35,000).

Director of a conference on drinking water and health. American Water Works Association Research Foundation. September 1989 ($10,000).

Principal Investigator of a contract to assess the methodological approaches for establishing an Air Toxic Programs. Rohm and Haas, Inc. Part 1 - January 1987 ($60,0000. Part 2 - January 1988 ($60,000).

Principal Investigator on a grant to develop an approach for assessing human risk for soil contamination. Hercules Corporation. January 1988 ($10,000).

Principal Investigator of a contract to assess environmental exposure from the application of lawn care chemical treatment practices. Massachusetts Department of Food and Agriculture. January 1987 - June 1987 $75,000; July 1987 - June 1988 ($75,000).

Director on a grant from Proctor and Gamble in the general area of research in animal extrapolation. July 1988 ($5,000).

Principal Investigator of a grant to assess the amount of soil children consume. Syntex, Corporation. August 1988 ($25,000).

Principal Investigator of a study to assess the environmental and public health effects of soils contaminated with petroleum products including disposal options. Mass. Depart. of Environ. Engineering. July 1986 - June 1987 ($108,000).

Director of workshop on risk assessment for aerial spraying of insecticides for control of gypsy moths. U.S.D.A. - Forest Service. January 1986 ($12,000).

Co-principal Investigator of a grant to assess the effects of acid rain on selected freshwater fish species. Massachusetts Fish & Wildlife Service. May 1986 ($7,000).

Co-principal Investigator of a contract to assess the environmental and public health implications of disposal options for petroleum contaminated soil. Edison Electric Institute. July 1986 ($50,000).

Co-principal Investigator to establish an aquatic toxicology research program in the School of Public Health. Funded by the Mass. Department of Fisheries and Wildlife. July 1986 ($100,000/year).

Principal Investigator of a study to assess the environmental and public health effects of soils contaminated with petroleum products including disposal options. Mass. Depart. of Environ. Engineering. September 1984 - June 1985 ($71,000). July 1985 - June 1986 ($76,000).

Director on a grant from Proctor and Gamble in the general area of research in animal extrapolation. August 1986 ($5,000), an additional $5,000.00 was received in July 1987.

Principal Investigator of a grant to assess the amount of soil children consume. Syntex, Corporation. August 1986 ($344,000).

Co-principal Investigator of the 3-year grant to assess the aquatic toxicity of chlorination of waste water treatment plants. Mass.Water Pollution Control Assoc. September 1986 ($90,000).

Director of EPA sponsored conference on the Environmental and Health effects of Ozone. U.S. EPA. October 1986 ($10,000).

Principal Investigator of a grant from the University of Illinois - Effects of ozone on mice with low levels of glucose-6-phosphate dehydrogenase in red cells. January 1985 ($5,000).

Principal Investigator of a study entitled "The Effect of Environmental pH and Modifying Factors on the Reproduction of Rainbow Smelt." Massachusetts Fish and Wildlife Service. January 1985 ($9,873).

Director of a contract to provide toxicological and risk assessment consultation and research to the Connecticut State Health Department. February 1985 ($90,000).

Principal Investigator of a study to assess possible reproductive hazards in the semi-conductor industry. Digital Corporation: Phase 1 - July 1984 ($244,000); Phase 2 - March 1, 1985 ($194,000).

Director of the Northeast Regional Environmental Health Center, sponsored by the six New England States. Starting October 1985 (goal of $250,000/year).

Principal Investigator on the assessment of the occurrence of biological factors affecting interindividual variation in response to toxic substances. Hercules Corporation. October 1985 ($11,000).

Director of a national conference on "Environmental and Public Health Effects of Soils Contaminated with Petroleum Products." Funded by the Massachusetts Department of Environmental Quality Engineering, EPRI, ARCO, Northeast Utilities and other companies. October 1985 ($50,000).

Director of a contract to assess the public health hazards associated with leaking underground storage tanks. EPRI. October 1985 ($20,000).

Co-Investigator of a study to assess the possibility of using surrogate parameters in monitoring for the presence of volatile organic contaminants in drinking water. American Water Works Association Research Foundation. October 1984 ($60,000).

Principal Investigator of a study to assess the effects of elevated levels of sodium in drinking water on school children. Massachusetts Department of Environmental Quality Engineering. June 1983 ($10,000).

Developed the concept and proposal for a state-supported Environmental R & D Center. It was funded by the Massachusetts Legislature in July 1983 for up to $500,000 per year.

Director of a grant from the U.S. EPA to conduct an International Conference on Cardiovascular Disease and Inorganic Constituents in Drinking Water. August 1983 ($65,000).

Director of a contract from the Massachusetts Department of Environmental Quality Engineering to assess the impact of several plastics manufacturing plants on ambient air quality. September 1982 ($5,068).

Principal Investigator of a contract to assess government policy with respect to genetic screening in the workplace. U.S. Congress' Office of Technology Assessment. January 1982 ($7,400).

Principal Investigator of a Biomedical Research Grant from the University of Massachusetts Graduate Research Council to study the development of an animal model to simulate human hereditary blood disorders (i.e., G-6-PD deficiency). April 1982 ($5,000).

Director of a quarterly newsletter entitled "Health Effects Update" for members of the American Water Works Association. May 1982 ($20,000/year).

Principal Investigator of a grant to investigate the efficacy of the guinea pig heterologous model to predict the effects of ozone on human erythrocytes with a G-6-PD deficiency. Hoffmann-LaRoche, Inc. June 1982 ($10,000).

Principal Investigator of a grant to study the effects on blood pressure of a reduction in sodium in drinking water from 120 ppm to 25 ppm. American Water Works Research Foundation. June 1982 ($29,000).

Principal Investigator on a study designed to evaluate the effect of ascorbic acid supplementation on the body burden of lead. Hoffmann-LaRoche, In. July 1982 ($14,700).

Co-principal Investigator on an unrestricted grant from the State of Massachusetts Department of Environmental Quality Engineering to study the potential of organics in drinking water as pollutants in household air. November 1981 ($600).

Principal Investigator of a grant to investigate the effects of variable dietary ascorbic acid intake on the toxicity of a proposed toxic ozone intermediate on human subjects (in vitro). Hoffmann-LaRoche, Inc., N.J. December 1981 ($10,000).

Director of a $41,000 grant from the U.S. EPA to conduct an International Conference on Cardiovascular Disease and Drinking Water during May 1979.

Principal Investigator on a contract from the U.S. EPA to provide a critical assessment of the epidemiological and toxicological studies concerning the health implications of widespread use of diesel fuel. June 1979 ($9,500).

Co-principal Investigator on a contract from the U.S. EPA to evaluate the effects of chlorite on the kidney, blood pressure, and blood parameters in adult and neonate rats and mice. December 1979 ($176,198).

Co-principal Investigator on a grant from the U.S. EPA to conduct a study on the effects of elevated levels of sodium in drinking water on cardiovascular function. March 1978 ($950,000).

Director of a $24,000 grant from the U.S. EPA to conduct an International Conference on the Effects of Pollutants on High Risk Groups during June 1978.

Principal Investigator on a grant from the U.S. EPA to conduct a study on the effects of ozone and nitrogen dioxide on mice with low levels of glucose-6-phosphate dehydrogenase in their red cells. June 1978 ($211,000).

Co-principal Investigator on a grant from the U.S. EPA to conduct a study on the effects of chloramines, chlorite, and copper on pregnant female mice with red cells having low levels of glucose-6-phosphate dehydrogenase. July 1978 ($95,000).

Co-principal Investigator on a U.S. EPA grant to evaluate the effect of chlorine dioxide disinfection on neonates born during 1946 in a community that temporarily adopted the use of chlorine dioxide for disinfection. 1978 ($50,000).

Co-principal Investigator of a grant from the Water Research Resources Center at the University of Massachusetts to investigate the effects of elevated levels of sodium in drinking water on the health of community residents. January 1977 ($4,500).

Co-Principal Investigator. Massachusetts Department of Environmental Protection. Determination of heavy metal background levels. June 1997 ($30,000).

Co-principal Investigator on a contract from the Environmental Protection Agency to conduct: (1) a study of the incidence of death from circulatory system causes between two communities with markedly different sodium levels in drinking water and (2) an analysis of the difference in drinking water quality with respect to minerals and heavy metals between these two communities. July 1977 ($10,000).

Co-principal Investigator on a grant from the U.S. EPA to conduct a study on the effects of chlorine dioxide on mice with low levels of glucose-6-phosphate dehydrogenase in their red cells. October 1977 ($50,000).

Principal Investigator of a grant from the University of Massachusetts Graduate Research Council - Biomedical Effects Section - to continue studies on the effects of ozone on mice with low levels of glucose-6-phosphate dehydrogenase in red cells. December 1976 ($5,000).

VI. CONSULTING ACTIVITY – Partial Listing

Occupational Health and Safety Administration (OSHA). Advisor and expert witness on litigation proceedings on the area of establishing health risk to workers in different occupations with particular emphasis on chemical coordinating exposure. Consultation has focused on carcinogenic risk from exposure to aromatic amines such as 3,3'-dichlorobenzidine and "MOCA."

Environmental Protection Agency (EPA). (1) Invited as a consultant to advise what EPA's research priorities should be for FY 1981. (2) Selected to critically review the development of several criteria documents for drinking water contaminants (i.e., antimony, copper, cyanide, dichlorobenzidine, nickel, and zinc). (3) Selected for a national committee to evaluate the methodology by which EPA develops health criteria from which national drinking water regulations are established. (4) Selected as a member of the solvent taskforce to assess risk to the general public from drinking water with variable levels of contamination from a variety of common solvents. (5) Invited member of a select committee to advise EPA on developing methodologies for dealing with epigenetic carcinogens. (6) Selected to chair the health effects committee on nationwide public hearings on volatile organic contaminants in drinking water. (7) Selected as a member of an advisory group to help establish methodologies for assessing risk

from carcinogens in drinking water. (8) Selected by EPA to give the principal address on health effects of drinking water pollutants at four nationwide workshops concerning the re-evaluation of the Primary Drinking Water Standards. (9) Selected by EPA to Chair a congressionally mandated study on the comparative health risks of seven different drinking water treatment technologies, (10) consultant Scientific Advisory Board (SAB) on dioxin and environmental exposures.

National Semi-Conductor Co. (Danbury, CT). Provide direction for the development of a new industrial hygiene program. Supervised the developments of risk assessment resulting from occupational exposure to arsenic, arsine, silver, gold, antimony, boron compounds, phophene, hydrofluoric acid, acetic acid, silane, and hydrazine.

North Atlantic Treaty Organization (NATO). Drinking Water and Human Health committee.

Massachusetts State Pesticide Board. Human health effects advisor to an advisory committee of the board. 1977-1981. In September 1981, invited to the State Pesticide Board by the Governor for a 4-year term, but declined invitation.

Ecology and Environment, Inc. (Buffalo, NY). This is an international consulting firm concerned with toxic substance regulation, hazardous wastes, and occupational health. I served on a health advisory board, which provides direction for their industrial hygiene program.

Department of Environmental Quality Engineering (DEQE) for the State of Massachusetts. (1) On matters pertaining to ambient air quality standards and toxic substances in drinking water. (2) Helped to create a 25-hour course on toxicology and risk assessment for DEQE staff. I co-instructed the course. (3) Ad Hoc Committee on sodium in drinking water. (4) Member of a committee to develop a statewide air toxic program.

State of California - Energy Resources Conservation and Development Commission. Provided information on human high-risk groups in a power plant setting.

U.S. Army - Division of Environmental Health and Safety (Fort Dietrick, MD). Provided guidance on the development of a program to establish permissible exposure limits to chemicals employed in various army occupations.

National Sanitation Foundation. Nominated and elected to the NSF Council of Public Health Consultants from 1980 to 1983, specializing in toxicology.

Governor's Hazardous Waste Siting Council. Advise the Massachusetts Legislature and the Governor on the public health considerations in dealing with the proper disposing of hazardous wastes in Massachusetts.

Mitre Corporation. Served on a selected committee to formulate and review methodology for establishing acceptable exposures to toxicants to U.S. Army personnel in combat and training operations.

State of Massachusetts - Department of Public Health and Department of Environmental Quality Engineering Joint Advisory Committee on Environmental Risk Assessment.

National Academy of Sciences. (1) Advised on the development of a possible national study of persons at increased risk to environmental pollutants and (2) Participated as a member of the Safe Drinking Water Committee.

Praeger Scientific Publishers (NY). Reviewer of book proposals in the areas of environmental and occupational health and toxicology.

John Wiley and Sons, Publishers (NY). Reviewer of proposed books in the area of environmental and occupational health and toxicology.

MacMillan Publishing Co. (NY). Reviewer of proposed books in the areas of environmental and occupational health and toxicology.

Sybron Corporation (Rochester, NY). To direct a human risk assessment of exposure to propylene dichloride.

Perkins-Jordan, Co. (Portland, ME). Environmental/industrial engineering company advisor in the area of toxicity of hazardous substances.

Office of Technology and Assessment for the U.S. Congress. I am advising in the area of genetic susceptibility to pollutants.

Pierce, Atwood et al. - a Portland, Maine Law Firm. I am advising with regard to risk assessment for environmental agents.

Canal Electric Co. To advise on the possible health risks of switching from 2.2% sulfur oil to 2.8% sulfur oil for the generation of electricity.

Research Foundation of the American Water Works Association. To develop and conduct courses on toxicology and environmental risk assessment.

Northeast States for Coordinated Air Use Management (NESCAUM). I have been invited to present lectures for NESCAUM staff members on high-risk groups and standard setting during their Air Pollution Health Effects Course. January 1981 (Hartford, CT); March 1982 (Durham, NH).

U.S. Consumer Product Safety Commission and their contractor, JRB Associates. To advise and critically review their studies on consumer products and high risk groups especially children.

Electric Power Research Institute. I have been invited to participate in their nationwide study on the human health effects of inhalable particles from coal-fired power plants.

Gordon A. Enk and Associates, Inc. (Medusa, NY). I was invited to advise in the area of development of toxicological assays to prevent potential human health effects for coal-fired power plants.

Geomet. Inc. (Rockville, MD). I have advised on projects dealing with toxicological hazards in the utility industry.

American Industrial Hygiene Association. Non-Traditional Shiftwork Periods Ad Hoc Committee Membership. July 1982.

Bioassays, Inc. (Woburn, MA). I have advised in the area of developing animal models for predicting the response of humans to ozone and nitrogen dioxide.

Arthur D. Little Company. I have advised on projects dealing with the role of high-risk groups in establishing ambient air standards for mobile source pollutants.

Dynamic Corporation. I advise on a project dealing with assessing the toxicological health hazards associated with the generation of electricity.

Waste Management of Wisconsin, Inc. I advise on the health effects of groundwater contamination by organic substances.

Committee on Human Health Effects and Drinking Water for the American Water Works Association.

Center for Environmental Health and Human Toxicology. Advised on the health effects of formaldehyde.

Massachusetts Railroad Association. To advise on the potential human health risks associated with herbicide spraying.

Harvard University. I advise on the carcinogenic potential of diesel emissions from power generating plants.

State of Florida. I advise the State's Department of Environment on development of a water reuse policy.

City of Los Angeles, Department of Water and Power. I advise concerning risk assessment of carcinogens in drinking water.

State of Connecticut, Preventable Diseases Division. I advise on several areas of health hazards assessment of a wide range of pollutants.

National Institute of Environmental Health Sciences. Selected for the Third Task Force for Research Planning on the Environmental Health Sciences - specialty: Role of host variations, 1984.

American Industrial Health Council. I have advised on the areas of risk assessment and in developing ways to improve scientific communication with the media.

Envirologic Data. I advise in the general area of toxicology and risk assessment.

Academy of Toxicological Sciences. Selected to peer-review the applications of those persons seeking to become board certified in toxicology.

National Science Foundation (NSF). I advise on the area of long-term environmental health research goals with particular emphasis on human high-risk groups and risk assessment.

Council for Environmental Quality (CEQ). I advise on the area of long range planning of EPA research goals as they pertain to pollutant effects on high-risk groups and research methodologies.

U.S. Forestry Service. I advise on the human health risk associated with the aerial spraying of selected pesticides.

U.S. Consumer Product Safety Commission. I was selected based on a national competition to serve as a member of the Consumer Product Safety Commission's Chronic Hazard Advisory Panel on the use of the plasticizer, di(2-ethylhexyl)phthalate (DEHP) in children's products, e.g., pacifer, rubber pants, etc.

Scientific Advisory Panel. Health and Human Services, State of Connecticut.

Media Training. I was one of three toxicologists who participated in an intensive media training program which focused on how to be interviewed by the media on environmental issues. This was sponsored by Chemlawn Inc. February 1985; I had another media training session in November 1985 sponsored by Hoffman-LaRoche, Inc.

Doctor's Data. I was invited to be on the Scientific Board of Directors of this organization. February 1985.

National Academy of Sciences. I was appointed to a special study committee commissioned to assess the health effects of pollutants in commercial aircraft. 1985 to 1986.

World Health Organization. I was invited to participate in development of basic research needs associated with toxic oil syndrome on June 27-28, 1985, in Copenhagen.

Associated Industries of Vermont. I advised on the toxicological basis of the proposed State of Vermont air toxics program.

Gulf and Western, Inc. I advise on the toxicological effects of cadmium and lead contamination of water, air and soil.

State of California - U.S. EPA. I advise on the development of methodologies for establishing a health-based air toxics program.

Rohm and Haas, Inc. I was invited to provide a one-day program on animal extrapolation and risk assessment; also, I was invited to critique their approaches for deriving air quality standards for air toxics.

Southern California Edison. I advise on the environmental and public health implications of soils contaminated with petroleum products.

Monsanto. I was selected to be a member of an expert independent panel of scientists to review toxicology data of pesticide products.

Navy. I advise the Navy on the health effects of contaminants in drinking water.

Syntex Corporation. I advise on the health effects of soil contamination with various organic contaminants.

Tambrands, Inc. I have been invited to become a member of their Institutional Review Committee.

Pacific Power and Light. I have advised in the area of assessing public health implications of PCB contaminated soil.

Digital Equipment Corporation. Assess the health implication of ozone emissions from manufactured equipment.

U.S. Justice Department. Advise on health risk assessment associated with hazardous waste sites.

Department of Defense, U.S. Army. Advise on the extrapolative relevance of alternative animal models for predicting human responses to environmental toxins.

Council for Agricultural Science and Technology. Invited to serve on national committee to assess risk from 2-4D exposure.

Alliance Technologies. Advise in the area of risk assessment and toxicology on a variety of environmental issues.

Roy Weston, Inc. Advise in the area of risk assessment and toxicology.

Colorado Department of Public Health. Advised on the development of risk assessment methodologies to estimate human health risks from possible exposure from the Rocky Mountain Arsenal.
NOITE Corporation. Denver, Colorado. Advise on the potential public health risks associated with drinking water contaminants.

Smith, Kline and Beckman. Advise on the public health risks associated with incineration of medically related waste.

Gelman, Inc. Advise on the public health implications of organic contaminants in groundwater.

GZA Corporation. Advise on the public health risks of petroleum contamination.

Gelman Sciences. Advise on the public health risk of various issues relating to risk assessment procedures to estimate public health hazards for chemical contaminants such as 1,4 dioxane.

State University at Albany - Center for Policy Research. Advise on the issue of medical infectious waste and public health.

World Health Organization (WHO). I advise on the role of genetic factors in affecting the occurrence of occupationally-induced disease.

Woodward-Clyde Consultants, Inc. Advise on the public health risks associated with exposure to toxics from multi-media.

Environ Corp. Advise on the issue of soil ingestion by children.

W.R. Grace. Advise on various risk assessment issues.

Committee on Urban Environmental Protection for the Division of Urban Affairs of the National Association of State Universities and Land Grant Colleges.

Member of the International Joint Commission, Great Lakes Science Advisory Board's Health Committee, 1991-1992.

Florida Power and Light. Advise on various risk assessment areas.

3M Corporation. Advise on environmental and occupational health issues.

National Academy of Sciences. Invited to be a member of the committee assessing the human health effects of the fuel additive MTBE.

State of Colorado. Advised on risks associated with contamination at the Rocky Mountain Arsenal. 1988-present (2002).

Journal Reviewer (examples of):

Ageing Research Reviews
Archives of Environmental Contamination and Toxicology
Biogerontology
BioEssays
BioMed Central Genomics
Chemical Research in Toxicology
Chemosphere
Drug Safety
Ecology Letters
Ecotoxicology
Ecotoxicology and Environmental Safety
Environment International
Environmental and Experimental Botany
Environmental Health Perspectives
Environmental Science and Technology
Ecperimental Gerontology
Free Radical Biology and Medicine
Fresenius Environmental Bulletin
Food and Chemical Toxicology
Frontiers in Bioscience
GLIA
Hazarouds Materials
HortScience
Human and Experimental Toxicology
International Journal of Obesity
International Journal of Toxicology
Italian Journal of Zoology
Journal of Alzheimer's Disease
Journal of Plant Growth Regulation

Journal of Zhejiang University Biologia Plantarum
Journal of Zoology
Molecular Biology Reports
Pest Management Science
Rejuvenation Research
Risk Analysis
Science
Science of the Total Environment
Toxicology Sciences

Journal Editorship:

Guest-Editor – Proceedings of the National Academy of Science
Advisory Borad - Invited member of the Advisory Board of the ICCNS Journal of Cell Communications and Signaling, 2012
Editor-in-Chief - Dose Response (formerly Non-linearity in Biology, Toxicology and medicine), 2005-present
Editor-in-Chief – Non-linearity in Biology, Toxicology, and Medicine, 2001-2005
Editor-in-Chief - Human and Ecological Risk Assessment - 1995-2009
Editorial Board - Inhalation Toxicology - 1990-1998
Editorial Board - Soil and Sediment Contamination: An International Journal – 1993-2000
Editorial Board - Human and Experimental Toxicology - 1995-present
Editorial Board - Environmental Toxicology and Safety - 1994-1998
Editorial Board - Biomedical and Environmental Sciences - 1996-1998

Book Editorship:

Guest Editor, Distribution of Artificial Radionuclides in the Abandoned Cattle in the Evacuation Zone of the Fukushima Daiichi Nuclear Power Plant. Proceedings of the National Academy of Sciences. 2012.

Co-Editor, Hormesis: A Revolution in Biology, Toxicology and Medicine. Humana Press Inc., 2010, 213 pages.

Advisory Board, Toxicology Desk Reference, The Toxic Exposure and Medical Monitoring Index, 1996.

Co-Editor, Annual review of Ecotoxicology and Environmental Toxicology & Chemistry, 1996.

Co-Editor, Current Topics in Ecotoxicology and Environmental Chemistry, published by Taylor and Francis, 1995-present.

Editor of the series Environmental Health and Toxicology published by Lewis Publishers, 1990-1993.

Co-Editor of a Monograph Series on Remedial Technologies for Hydrocarbon Contaminated Soils published by Lewis Publishers, 1990-1992

Co-Editor, Soils Contaminated by Petroleum, Environmental and Public Health Effects, John Wiley & Sons, 1988

VII. ACADEMIC AND OTHER HONORS

Honorary Degree, Doctor of Science. School of Nursing and Medical Radiation Sciences Program, McMaster University Canada
Invited member of the Advisory Board of the ICCNS Journal of Cell Communications and Signaling, 2012
Honorary member of the International CCN Society, 2012
Awarded the second International Cell Communication and Signaling-Springer award, Belfast Northern Ireland, 2010.
Awarded the Marie Curie Prize from the World Council of Nuclear Workers at the 8th LOWRAD International Conference in Rio de Janeiro, Brazil, 2010.
Selected to present the Third Annual Environmental Toxicology Lectureship at the Institute for Environmental Studies at the University of Illinois, 1991.
Nominated for Teacher of the Year Award - several times
Appointed to the Food and Nutrition Board of the National Research Council, 1988- 1991.
Appointed by the Institute of Medicine to the Food and Nutritional Board, 1988-1990.
Adrian Rondileau Award for outstanding leadership and professional achievement, 1988.
Appointed to the National Academy of Sciences Safe Drinking Water Committee, 1982-1984, 1986.
Appointed to the NATO countries Safe Drinking Water Committee
Appointed to the 11 member Scientific Counselors of the Agency for Toxic Substances and Disease Registry
Phi Delta Phi - a national academic fraternity
Kappa Delta Pi - a national education fraternity requiring the member to be in the upper 1/10 of the graduating class.
William Vinal Zoological Award - awarded to graduating senior biology major with the highest academic average in zoology.
Danforth Fellowship Nomination
Dean's List - 7 semesters

VIII. SOCIETIES

Dose-Response Society
Association for the Advancement of American Sciences (AAAS)
Society for Occupational and Environmental Health (SOEH) - Elected to the Governing Council, 1980-1982.
American College of Toxicology (ACT) - Elected to be a Councilor, 1981-1983
Society of Environmental Toxicology and Chemistry (SETAC)
Society of Risk Analysis (SRA)
Society of Toxicology (SOT)
New England Chapter of the Society of Toxicology - Councilor
International Society for the Regulatory Toxicology and Pharmacology
Council for Health and Environmental Safety of Soil (CHESS) – Selected to Chair, 1987-present
BELLE, Chairman of the Advisory Committee, 1990-present.

IX. UNIVERSITY ASSIGNMENTS

Animal Care
University-wide Environment Committee
Advisory Board of the Institute of Environmental Studies
Ph.D. Policy and Admissions Committee
Biohazards Regulation and Control Committee
Advisory Board of the Water Research Resource Center
Division of Public Health - Nutrition Department Joint Student Admission Committee
School of Health Sciences - Personnel Committee, 2006-2009, 2011-2013
Search Committee for New Director of the Division of Public Health, 1983
Teaching Evaluation Committee, 1982
By-Laws Committee, 1978-1982
Curriculum Committee, 1978-1981
Academic Affairs Council, 1976-1979
Ph.D. Proposal Committee, 1977-1978

X. CERTIFICATION

Elected to the Board of Directors of the Academy of Toxicological Sciences,1987-1989
Elected Vice President of the Board of Directors of the Academy of Toxicological Sciences, 1987-1989
Board Certified in General Toxicology by the Academy of Toxicological Sciences,1982, renewed 1987- 2007, 2012-2017
Elected to the Professional Evaluation Board

XI. VISITING PROFESSORSHIP

Visiting Professor Lecture Program, September 2011. U.S. Food and Drug Administration, White Oaks Campus, Silver Spring, Maryland.

University of Illinois at Champagne-Urbana, April 1989. Toxicology scholar in residence. Invited to present seminar/lecture on toxicology and human risk assessment.

Harvard University, School of Public Health, September 1985, and 1986. Invited to be a guest faculty member in the course "Risk Analysis in Environmental Health." My topic is "Use of Animal and Other Data as Predictors of Human Risks."

University of North Carolina School of Public Health at Chapel Hill. February 12-16, 1984.

XII. PUBLICATIONS

2013

1. Iavicoli, I., Leso, V., Fontana, L., Marinaccio, A., Bergamaschi, A., and Calabrese, E.J. (2013). The effects of Rhodium on the renal function of female Wistar rats. *Ecotoxicology and Environmental Safety* (submitted).

2. Calabrese, E.J., and Dhawan, G. (2013). How radiotherapy was historically used to treat pneumonia: Could it be useful today? *Yale Journal of Biology and Medicine* (submitted).

3. Calabrese, E.J. (2013). Biphasic dose responses in biology, toxicology and medicine: Accounting for their generalizability and quantitative features. *Environmental Pollution* (in press).

4. Cornelius, C., Zanghi, A., Perrotta, R., Graziano, A., Calabrese, E.J., and Calabrese, V. (2013). Stress responses, vitagenes and hormesis as critical determinants in aging and longevity: Mitochondria as a "Chi". *Immun. Aging* (submitted).

5. Calabrese, E.J. (2013). The dose-response: A fundamental concept in toxicology. In: Principles and Methods of Toxicology, Sixth Edition (Hayes, AW, editor). (in press).

6. Calabrese, E.J. (2013). The dose response: Comparing hormesis and threshold models. In: Fundamentals of Ecotoxicology. The Science of Pollutions, 4th Edition. (in press).

7. Crupi, R., Cornelius, C., Calabrese, V., Perotta, R., D'Agata, V., Graziano, A., Pennisi, G., Milone, P., Zanghi, A., Radak, Z., Calabrese, E.J., and Cuzzocrea, S. (2013). Traumatic brain injury (TBI): Oxidative stress and neuroprotection. *Antioxid. Redox Signal.* (in press).

8. Calabrese, E.J. (2013). The hormetic dose response often describes drug therapies for stroke and traumatic brain injury. In: Brain Injury and Stroke: Spectrum Effects and Implications, Chapter 14 (J. Giordano and P. Water, Editors). Potomac Institute Press, Arlington VA. (in press).

9. Calabrese, E.J. (2013). Origin of the linearity-no threshold (LNT) dose response concept. *Archives of Toxicology* DOI:10.1007/s00204-013-1104-7 (in press).

10. Calabrese, EJ. (2013). How the U.S. National Academy of Sciences mislead the world community on cancer risk assessment: New findings challenge historical foundations of the linear dose response. *Archives of Toxicology* DOI:10.1007/s00204-013-1105-6 (in press).

11. Calabrese, E.J., and Dhawan, G. (2013). The historical use of radiotherapy in the treatment of sinus infections. *Dose-Response*, (in press).6. Calabrese, EJ. (2013). Low doses of radiation can enhance insect lifespans. *Biogerontology* DOI:10.1007/s10522-013-9426-5 (in press).

12. Calabrese, E.J., and Dhawan, G. (2013). Historical use of X-Rays: Treatment of inner ear infections and prevention of deafness. *Human and Experimental Toxicology*, DOI: 10.1177/0960327113493303 1-12.

13. Calabrese, EJ. (2013). A brief history of hormesis. In: Hormesis in Healthy Aging (Rattan S and LeBourg E, Editors). Springer Publishers (in press).

14. Calabrese, EJ. (2013). Hormesis and risk assessment. In: Hormesis in Healthy Aging (Rattan S and LeBourg E, Editors). Springer Publishers (in press).

15. Calabrese EJ. (2013). Hormetic mechanisms. *Critical Reviews in Toxicology* 43(7):580-606.

16. Calabrese, E.J. (2013). X-ray treatment of carbuncles and furuncles (boils): An historical assessment. *Hum. Exper. Toxicol.* 32(8):817-827.

17. Calabrese EJ. (2013). Edward J. Calabrese, Ph.D.: Hormesis and the biphasic adaptive stress response – Interview by Craig Gustafson, Amercian Association of Neturopathic Physicians 2013 Conference. Integrative Medicine 12(3):18-22.

18. Calabrese, E.J. (2013). Historical foundations of wound healing and its potential for acceleration: Dose-response consideration. *Wound Rep Regen.*, 21(2):180-193.

19. Calabrese, E.J., and Calabrese, V. (2013). Reduction of arthritic symptoms by low dose radiation therapy (LD-RT) is associated with an anti-inflammatory phenotype. *Int. J. Rad. Biol.*, 89(4):278-286..

20. Calabrese, E.J., and Calabrese, V. (2013). Low dose radiation therapy (LD-RT) is effective in the treatment of arthritis: Animal model findings. *Int. J. Rad. Biol.*, 89(4):287-294.

21. Calabrese, E.J. (2013). Hormesis. In: *Encyclopedia of Environmetrics, Second Edition* (A.-H. El-Shaarawl and W. Piegorsch, Editors). John Wiley & Sons Ltd: Chichester, UK. DOI: 10.1002/9780470057339.vah014.pub2. Published online 1/15/2013.

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13. Calabrese, E.J. (1978). Gunn rats: Animal model to simulate exposure of human high risk groups to polychlorinated biphenyls. *The American Jour. of Pathol.,* 91(2):405-407.

1977

1. Calabrese, E.J. (1977). Further comments on novel work schedule TLVs. *Amer. Indus. Hyg. Assoc. Jour*., 38:443-446.

2. Calabrese, E.J. and Tuthill, R.W. (1977). The toxicological and epidemiologic basis for a sodium drinking water standard. *Jour. Environ. Health*., 40(2):80-83.

3. Calabrese, E.J. and Tuthill, R.W. (1977). The effects of elevated levels of sodium in community drinking water on the blood pressure distribution patterns of high school sophomores. *Arch. Environ. Health,* 32(5):200-202.

4. Calabrese, E.J. (1977). Environmental quality indices predicted by evolutionary theory. *Medical Hypotheses,* 3(6):241-244.

5. Calabrese, E.J. and DiNardi, S.R. (1977). APCA Special Conference - Toxic substances in the air environment. *Proceedings of the Conference. Air Poll. Control Assoc.*

6. Calabrese, E.J., Riddiough, D., and Musselman, R. (1977). Is EPA's radium-226 drinking water standard justified? *Medical Hypotheses,* 3(5):171-174.

7. Calabrese, E.J. (1977). Insufficient conjugate glucuronidation: A possible factor in PCB toxicity. *Medical Hypotheses,* 3(4):162-165.

8. Calabrese, E.J. and Sorenson, A.J. (1977). The health effects of PCB's with particular emphasis on high risk groups. *Reviews on Environmental Health,* 2(4):285-304.

9. Friedman, L. and Calabrese, E.J. (1977). The carcinogenic potential of open leaf burning. *Reviews of Environmental Health,* 2(4):257-283.

10. Calabrese, E.J. (1977). Excessive levels of barium and radium-226 in Illinois drinking water. *J. Environ. Health,* 39(5):366-369.

11. Calabrese, E.J., Kojola, W., and Carnow, B.W. (1977). Ozone: A possible cause of hemolytic anemia in glucose-6-phosphate dehydrogenase deficient individuals. *J. Toxicol. Environ. Health,* 2:709-712.

1976

1. Calabrese, E.J. and Edwards, L.J. (1976). Of light and gravity in leaf-side selection by *Myzus Persicae*, the green peach aphid. *Annals of the Entomological Society,* 698(2):1145-1146.

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3. Calabrese, E.J. (1976). The evolutionary basis of environmental indices. *J. Environ. Education,* Spring Issue, 7(3):20-27.

4. Calabrese, E.J. and Howe, K.J. (1976). The effects of phosfon on the growth of peppermint (*Mentha piperita* L.) *Physiologica Plantarum,* 37:163-165.

5. Calabrese, E.J. (1976). Student involvement in governmental decision-making. *Science Activities*. March/April. pp. 33-35.

1975

1. Calabrese, E.J. and Sorenson, A.J. (1975). Potential public health problems from the catalytic activity of atmospheric manganese. *J. Air. Poll. Cont. Assoc.,* 25:81-82.

2. Calabrese, E.J. (co-author). (1975). The health implications of the catalytic converter. IIEQ Document Number 13.

1974

1. Calabrese, E.J. (co-author). (1974). Development of an ambient standard for mercury. IIEQ Document Number 18.

2. Calabrese, E.J. (co-author). (1974). Advisory report on the health effects of polychlorinated biphenyls. IIEQ Document Number 17.

3. Calabrese, E.J. (co-author). (1974). The health effects and recommended air standard for chlorine. IIEQ Document Number 16.

4. Calabrese, E.J. (co-author). (1974). The health effects and recommended air standard for manganese. IIEQ Document Number 15.

5. Calabrese, E.J. (co-author). (1974). The health effects and recommended air standard for ozone. IIEQ Document Number 14.

6. Calabrese, E.J. (co-author). (1974). The health effects of vanadium and recommended air standard. Illinois Institute for Environmental Quality (IIEQ) Document Number 12.

7. Calabrese, E.J. and Stoffolano, J.G. (1974). The effects of diapause on respiration of the adult black blowfly, *Phormia regina* (Meigen). *Ann. Ent. Soc. Amer*., 67(4):715-717.

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9. Calabrese, E.J. and Stoffolano, J.G. (1974). The effects of diet and age on the respiratory rate of adult male and female black blowflies, *Phormia regina* (Meigen). *J. Insect. Physiol.*, 20:383-393.

10. Calabrese, E.J. (1974). The evolutionary basis of logotherapy. Ed.D. Dissertation, University of Massachusetts at Amherst, Massachusetts.

1973

1. Calabrese, E.J. (1973). The effects of diet, age and diapause on the respiratory rates of adult male and female black blowflies, *Phormia regina* (Meigen). Ph.D. Dissertation, University of Massachusetts at Amherst, Massachusetts.

1972

1. Calabrese, E.J. (1972). The effects of phosfon on the growth of *Mentha piperita* L. Master's thesis at State College at Bridgewater, Massachusetts.

1968

1. Calabrese, E.J. (1968). The effects of a phosphon on *Mentha piperita* L. in different growth media. Eastern College Science Conference. Yale University, New London, CT. April 20th.

XIII. PRESENTATIONS AT MAJOR CONFERENCES/INVITED SEMINARS

2013

1. Calabrese, E.J. (2013). Soil ingestion rates in children and adults: Implications for human health risk assessment. Soils, Sediments, Water and Energy conference, AEHS Foundation. October 22, 2013. (to be presented).

2. Calabrese, E.J. (2013). Low dose radiation therapy induces and anti-inflammatory phenotype: Biomedical implications. Environmental Mutagen Society Inflammation Symposium. September 23, 2013. (to be presented).

3. Calabrese, E.J. (2013). Historical foundations of the linear-non-threshold dose response model. American Association of Physicists in Medicine, 54th Annual Meeting. Indianapolis. August 5, 2013.
4. Calabrese, E.J. (2013). Hormesis: Its biomedical foundations and therapeutic implications. American Association of Naturopathic Physicans. Keystone, Colorado. July 10-13, 2013.

5. Calabrese, E.J. (2013). A method to evaluate hormesis in nanoparticle dose-response. 5th International Symposium - Nutrition, Oxygen Biology and Medicine. Paris France. June 5-7, 2013.

6. Calabrese, E.J. (2013). Does it or doesn't it? Evidence for the existence of non-monotonic dose resonse. Webinar. Society of Toxicology Risk Assessment Specialty Section. San Antonio, TX. May 8, 2013.

7. Calabrese, EJ. (2013). Origin of the linearity-no threshold (LNT) dose response concept. Dose-Response 2013: Implications for Toxicology, Medicine, and Risk Assessment. University of Massachusetts, Amherst. April 23, 2013.

8. Calabrese EJ, Calabrese V. (2013). Low dose radiation therapy (LD-RT) is effective in the treatment of arthritis: Animal model findings. Dose-Response 2013: Implications for Toxicology, Medicine, and Risk Assessment. University of Massachusetts, Amherst. April 23, 2013.

9. Calabrese EJ, Dhawan G. (2013). The historical use of radiotherapy in the treatment of sinus infections. Dose-Response 2013: Implications for Toxicology, Medicine, and Risk Assessment. University of Massachusetts, Amherst. April 23, 2013

10. Calabrese, E.J. (2013). Web interview and presentation. Atoms for Peace, Italy. April 11, 2013

11. Calabrese, E.J. (2013). Hormesis: Scientific revolution in environmental regulations. Department of International Development, Community and Environment. Clark University, Worcester, MA. April 2, 2013.

12. Calabrese, E.J. (2013). A looming scientific rebolutionin environmental regulations? Cato Institute. Washington DC. March 21, 2013.

2012

1. Calabrese, E.J. (2012). Chemical and radiation hormesis: Toxicological foundations and biomedical applications. Uniformed Services University, Armed Forces Radiobiology Research Institute. Bethesda, MD. November 30, 2012.

2. Calabrese, E.J. (2012). Hormesis: Toxicological and Risk Assessment Implications. University of Massachusetts, School of Public Health and Health Sciences. Presented to medical students and faculty from Russia, Novgorod State University. Amherst, MA. October 26, 2012.

3. Calabrese, E.J. (2012). The hormesis dose response. University of Louisville, Louisville. KY. October 24, 2012.

4. Calabrese, E.J. (2012). Hormesis: Its biological foundations and therapeutic implications. European Society of Integrative Medicine. Florence, Italy. September 20-21, 2012.

5. Calabrese, E.J. (2012). Hormesis: Its significance for toxicology, risk assessment and medicine. Plymouth Marine Laboratory. Plymouth, UK. July 18, 2012.

6. Calabrese, E.J. (2012). The hormetic dose response. United Kingdom Environmental Mutagen Society, Taliesin Arts Centre, Swansea Univeristy. Swansea Wales. July 15-18,2012.

7. Calabrese, E.J. (2012). How the LNT myth was launched. American Nuclar Society Annual Meeting. Hyatt Regency Hotel. Chicago, IL. June 25, 2012.

8. Calabrese, E.J. (2012). The hometic dose response. European Food Safety Authority Scientific Colloquium XVII on Low Dose Response in Toxicology and Risk Assessment. Parma, Italy. June 14, 2012 (video presentation).

9. Calabrese, E.J. (2012). Muller's deceptive Nobel Prize lecture and its risk assessment implications. New England Health Physics Society Symposium, Westford, MA. May 24, 2012.

10. Golder, R., and Calabrese, E.J. (2012). Re-evaluation of the LNT. Society of Toxicology Annual Meeting, San Francisco, CA. March 11-15, 2012.

11. Calabrese, E.J. (2012). Hormesis and the Salk polio vaccine. International Conference on Dose-Response 2012, University of Massachusetts. Amherst, MA. April 24-25, 2012.

12. Calabrese, E.J. (2012). Key historical studies serving as the basis for the linear dose response challenged. International Conference on Dose-Response 2012, University of Massachusetts. Amherst, MA. April 24-25, 2012.

13. Calabrese, E.J., and Dhawan, G. (2012). The role of x-rays in the treatment of gas gangrene: A historical assessment. International Conference on Dose-Response 2012, University of Massachusetts. Amherst, MA. April 24-25, 2012.

14. Golden, R., and Calabrese, E.J. (2012). Revisiting assumptions of linearity for radiation-induced cancer: Implications for chemical cancer risk assessment. International Conference on Dose-Response 2012, University of Massachusetts. Amherst, MA. April 24-25, 2012.

15. Sarill, M.A., and Calabrese, E.J. (2012). Biphasic dose responses to phytoestrogens: An evaluation of mechanisms. International Conference on Dose-Response 2012, University of Massachusetts. Amherst, MA. April 24-25, 2012.

16. Calabrese, E.J. (2012). Hormesis: Its significant for toxicology, pharmacology and drug development. Tufts University, Medford/Somerville, MA. April 17, 2012.

17. Calabrese, E.J. (2012). The hormetic dose response. Hormesis Research Training Group at

the Friedrich-Schiller-University, Jena, Germany. Opening Ceremonies February 14, 2012.

18. Calabrese, E.J. (2012). Hormesis: Its significance for toxicology, pharmacology and drug development. Computer Science Department, University of Massachusetts. Amherst, MA. April 10, 2012.

19. Calabrese, E.J. (2012). School of Marine Sciences, University of Massachusetts, Amherst, MA. February 1, 2012.

20. Calabrese, E.J. (2012). Hormesis: a dose response revolution. IMMAG, Georgia Health Sciences University. Augusta, GA, January 23, 2012.

2011

1. Calabrese, E.J. (2011). Hormesis: Its significance for toxicology, pharmacology, and risk assessment. 43rd Society of Toxicology of Canada. Montreal, Canada, December 4-6, 2011.

2. Calabrese, E.J. (2011). When science fails society: Toxicology's 20th century legacy. Joint Meeting of the New England Sections of American Physical Society, American Association of Physics Teachers and the Soceity of Physics Student, Physics Department, University of Massachusetts, Amherst MA. November 19, 2011.

3. Calabrese, E.J. (2011). How toxicology got the dose response half right. FISH/BSU seminar. Bridgewater State University, Bridgewater, MA. November 18, 2011.

4. Calabrese, E.J. (2011). Hormesis: enhancing biological performance. Department of the Air Force – Photo-Electric-Magnetic-Bio-Stimulation (PEMB) Workshop. San Antonio, TX. October 31-November 1, 2011.

5. Calabrese, E.J. (2011). Harvard School of Public Health, Harvard University, JBL Symposium. Boston, MA. October 29, 2011.

6. Calabrese, E.J. (2011). Hormesis: Its significance for risk assessment and regulatory agencies. Mary Kay O'Connor Process Safety Center. Texas A&M University, College Station, Texas. October 25-26, 2011.

7. Calabrese, E.J. (2011). Hormesis: Its significance for toxicology, pharmacology and risk assessment. University of Connecticut, Advanced Toxicology Seminar. Connecticut. October 12, 2011

8. Calabrese, E.J. (2011). Hormesis: Its significance for food safety. Food Safety versus Food Secutiry – A Global Challenge. Wageningen, The Netherlands. October 4, 2011.

9. Calabrese, E.J. (2011). U-Shaped dose response curves. RIKILT, Wageningen, The

Netherlands. October 3, 2011.

10. Calabrese, E.J. (2011). Hormesis: Its significance for toxicology, pharmacology and risk assessment. Prevention and Intervention: From Molecular Biology to Clinical Perspectives, Halle, Germany. September 16-18, 2011.

11. Calabrese, E.J. (2011). Hormesis; Its significance for toxicology, pharmacology and drug development. FDA Center for Drug Evaluation and Research (CDER), Rockville, MD. September 12, 2011.

12. Calabrese, E.J. (2011). Hormesis: Its significance for toxicology, pharmacology and risk assessment. Colloque ARET, Museaum National d'Histoire Naturelle, Paris, France. June 20-21, 2011.

13. Calabrese, E.J. (2011). Hormesis: Its significance for toxicology, pharmacology and riak assessment. Mary Kay O'Connor Process Safety Center, Texas A & M University, College Station, TX. May 5, 2011.

14. Nascarella, M.A., and Calabrese, E.J. (2011). Characterization of the biphasic antioxidant response of human cells to multi-walled carbon nanotubes. The 10th Annual International Conference on Dose-Response 2011: Implications for Toxicology, Medicine, and Risk Assessment. University of Massachusetts, Amherst, MA. April 26-27, 2011.

15. Calabrese, E.J., and Stanek III, E.J. (2011). Hormesis demonstrated for mutagenicity. The 10th Annual International Conference on Dose-Response 2011: Implications for Toxicology, Medicine, and Risk Assessment. University of Massachusetts, Amherst, MA. April 26, 2011.

16. Nascarella, M.A., and Calabrese, E.J. (2011). Case study: Quantitative assessment of the biphasic dose-response of polyN-isoproplacrylamide (PNIPAM) nanoparticles. The 10th Annual International Conference on Dose-Response 2011: Implications for Toxicology, Medicine, and Risk Assessment. University of Massachusetts, Amherst, MA. April 26, 2011.

17. Stanek III, E.J., and Calabrese, E.J. (2011). Simulation studies to complement observational data: what can we learn? How should they be used? The 10th Annual International Conference on Dose-Response 2011: Implications for Toxicology, Medicine, and Risk Assessment. University of Massachusetts, Amherst, MA. April 27, 2011.

18. Calabrese, E.J. (2011). Hormesis: Changing how we think about toxicology, medicine and risk assessment. Endocrine Disruptive Effects of Pesticides from Low Dose Exposure: Evidence for Non-Monotonic Dose Response Curves? The SAFE Consortium. Brussels, Belgium, March 12-17.

19. Calabrese, E.J. (2011). When Science Fails Society: Toxicology's 20th Century Legacy. Howard University, Washington, DC. March 30, 2011.

2010

1. Calabrese, E.J. (2010). Hormesis: Its scientific foundations and biomedical implications. L'Oreal, Clichy, France. November 3, 2010.

3. Calabrese, E.J. (2010). Hormesis: A revolution in toxicology, medicine, and risk assessment. Clark University, November 18, 2010.

4. Calabrese, E.J. (2010). 6th International Workshop on the CCN Family of Genes. International CCN Society. Belfast, Northern Ireland. October 20, 2010.

5. Calabrese, E.J. (2010). Hormesis: Its scientific foundations and biomedical implications. State University of New York, Albany, New York. October 8, 2010.

6. Calabrese, E.J. (2010). Hormesis: A revolution in toxicology, medicine, and risk assessment. Skidmore College, Skidmore, New York. October 7, 2010.

7. Calabrese, E.J. (2010). Historical blunders: How EPA got the dose response half right. Iona College, New Rochells, New York. September 30, 2010.

8. Calabrese, E.J. (2010). Historical blunders: The road to linearity. McMaster Univeristy, International Scientific Symposium, Ontario, Canada. August 26, 2010.

9. Calabrese, E.J. (2010). Hormesis: Scientific foundations and public health implications. Fermented Beverages and Health: Enhancement of Biological Responses Relevant for Human Health. Madrid, Spain. July 14, 2010.

10. Calabrese, E.J. (2010). Hormesis applications for neurodegenerative diseases. Drug Development for Neurodegenerative Diseases, Boston, MA. May 18, 2010.

11. Calabrese, E.J., Baldwin, L.A., and Leonard, D.A. (2010). The history of chemical hormesis. Presented at the 9th Annual International Conference: Dose-Response: Implications for Toxicology, Medicine, and Risk Assessment. University of Massachusetts-Amherst, MA. April 27-28, 2010.

12. Calabrese, E.J., Baldwin, L.A., and Leonard, D.A. (2010). The history of radiation hormesis. Presented at the 9th Annual International Conference: Dose-Response: Implications for Toxicology, Medicine, and Risk Assessment. University of Massachusetts-Amherst, MA. April 27-28, 2010.

13. Calabrese, E.J. (2010). Hormesis Update 2010. Presented at the 9th Annual International Conference: Dose-Response: Implications for Toxicology, Medicine, and Risk Assessment. University of Massachusetts-Amherst, MA. April 27-28, 2010.

14. Calabrese, E.J., and Nascarella, M.A. (2010). The frequency of hormetic responses in the

Ames Assay. Presented at the 9th Annual International Conference: Dose-Response: Implications for Toxicology, Medicine, and Risk Assessment. University of Massachusetts-Amherst, MA. April 27-28, 2010.

15. Mosakowski, T., and Calabrese, E.J. (2010). Hormesis research in the People's Republic of China: Past trends in the academic literature and future directions. Presented at the 9th Annual International Conference: Dose-Response: Implications for Toxicology, Medicine, and Risk Assessment. University of Massachusetts-Amherst, MA. April 27-28, 2010.

16. Iavicoli, I., Calabrese, E.J., and Nascarella, M.A. (2010). Exposure to nanoparticles and hormesis. Presented at the 9th Annual International Conference: Dose-Response: Implications for Toxicology, Medicine, and Risk Assessment. University of Massachusetts-Amherst, MA. April 27-28, 2010.

17. Nascarella, M.A., and Calabrese, E.J. (2010). A Case Study: the risk of a hormetic response chemotherapy treatment. Society of Risk Analysis – New England Meeting. Camp, Dresser, Mckee, Cambridge, MA. April 1, 2010.

18. Calabrese, E.J. (2010). Hormesis in Toxicology and Pharmacology. Maastricht University. The Netherlands, March 26, 2010.

19. Calabrese, E.J. (2010). The limits of legislation. Koopman International European Commission and Parliament and joint Centre for European Policy Studies. Brussels, March 25, 2010.

20. Calabrese, E.J., and Nascarella, M.A. (2010). Estimating the frequency of hormesis in the Ames assay. Presented at the Society of Toxicology Annual Meeting, Salt Lake City, UT. March 10, 2010.

21. Calabrese, E.J. (2010). Estimating the frequency of hormesis in the Ames Assay. To be presented at the 49th Annual Meeting of the Society of Toxicology. Salt Lake City, UT. March 7-11, 2010.

22. Calabrese, E.J. (2010). Hormesis: Why it Transforms Toxicology, Molecular Biology and Clinical Medicine. Brown University, Providence, RI. March 3, 2010.

23. Calabrese, E.J. (2010). Hormesis: Why it transforms toxicology and risk assessment. Presented at Worcester Polytechnic Institute-REACH. February 5, 2010.

24. Calabrese, E.J. (2010). Hormesis is central to pharmacology and toxicology. Northeastern University, Boston MA. January 21, 2010.

2009

1. Calabrese, E.J. (2009). Hormesis: State of the science. Presented at the Society for Risk Analysis Annual Meeting, Baltimore, MD. December 9, 2009.

2. Calabrese, E.J., and Nascarella, M.A. (2009). Hormesis: Scientific foundations and risk assessment implications. Presented at the Society for Risk Analysis Annual Meeting, Baltimore, MD. December 9, 2009.

3. Lewis, S.C., and Calabrese, E.J. (2009). Hormesis: Barriers for regulatory risk assessment. Presented at the Society for Risk Analysis Annual Meeting, Baltimore, MD. December 6-9, 2009.

4. Jones, A.C., Anderton, D.L., Stanek, E.J., and Calabrese, E.J. (2009). Survey Results for the hormesis knowledge and opinion survey administered to risk assessment and toxicology professionals. Presented at the Society for Risk Analysis Annual Meeting, Baltimore, MD. December 6-9, 2009.

5. Calabrese,E.J. (2009). Hormesis Enhances Environmental Toxicology Research and its Applications. Presented at William & Mary, Virginia Institute of Marine Science. Gloucester Point, VA. November 6, 2009.

6. Calabrese, E.J. (2009). Hormesis: Why it should transform toxicology and pharmacology. Northeast Chapter of the Society of Toxicology, Cambridge, MA. October 16, 2009.

7. Calabrese, E.J. (2009). Hormesis is central to biology and medicine. University of Rhode Island, Kingston, RI. October 13, 2009.

8. Calabrese, E.J. (2009). Hormesis is central to biology and medicine. 8th LOWRAD International Conference, Rio de Janeiro, Brazil. September 28-30, 2009.

9. Calabrese, E.J. (2009). Hormesis: Scientific foundations and risk assessment implications. ExxonMobil Biomedical Sciences, Inc., Iselin, NJ. September 15, 2009.

10. Calabrese, E.J. (2009). Hormesis: A central concept in biology and carcinogenesis. The University of Vermont, Department of Pathology, Burlington, VT. September 14, 2009.

11. Calabrese, E.J. (2009). Hormesis and Medicine. Boiron. Lyon, France. June 22-23, 2009

12. Nascarella, M., Beck, B., and Calabrese, E.J. (2009). Quantifying Hormetic (Biphasic) Dose-Responses in the Assessment of Nanoparticle Toxicology. International Conference on the Environmental Implications and Applications of Nanotechnology, June 9-11, 2009

13. Calabrese, E.J. (2009). Hormesis: A dose response revolution. New England Chapter of the Health Physics Society annual meeting, Westford, MA. June 4, 2009.

14. Nascarella, M.A., and Calabrese, E.J. (2009). A Comparison of Multiple Methods to Evaluate Biphasic (Hormetic) Dose Responses in High-Throughput In Vitro Toxicology Screens. NRC Symposium on Toxicity Pathway-Based Risk Assessment: Preparing for Paradigm Change. May 11-13, 2009.

15. Calabrese, E.J. (2009). Hormesis: A dose response revolution. Binghamton University, State University of New York. April 17, 2009.

16. Calabrese, E.J. (2009). Challenging the assumptions about toxicological dose response: Scientific, ethical and policy implications of hormesis. Clark University. March 20, 2009.

17. Stanek, E.J. III and Calabrese, E.J. (2009). Meta Analysis of Soil Ingestion Intake for Childhood Risk Assessment, Eastern North American Region Biometrics Meetings, March 16, 2009, San Antonio, Texas.

18. Nascarella, M.A., and Calabrese, E.J. (2009). The relationship between IC50, toxic threshold, and the magnitude of stimulatory response in biphasic (hormetic) dose-responses. Society of Toxicology Annual Meeting, Baltimore, MD. March 15-19, 2009.

19. Jones, A.C., Anderton, D.L., Stanek, E.J., and Calabrese, E.J. (2009). Hormesis knowledge and opinion survey results. Presented at the Society of Toxicology Annual Meeting, Baltimore, MD. March 15-19, 2009.

20. Calabrese, E.J. (2009). Hormesis: What it means for toxicology, the environment and public health. FISH Spring 2009, Biology Department Seminar Hour. Bridgewater State University. Februaru 27, 2009.

21. Calabrese, E.J. (2009). Hormesis: What it means for toxicology, the environment and public health. Plant and Soil Science, University of Massachusetts, Amherst, MA. February 3, 2009.

2008

1. Stanek, E.J. III and Calabrese, E.J. (2008). Exposure Assessment for Children: Soil Ingestion, Indian Statistical Institute Seminar, Oct 31, 2008, ISI Kolkata, India.

2. Nascarella, M.A., and Calabrese, E.J. (2008). Characterizing the quantitative features of hormetic dose-responses in a single high-throughput assay evaluating anticancer agents. To be presented at the Society for Risk Analysis Annual Meeting, Boston, MA. December 8, 2008.

3. Stanek, E., and Calabrese, E.J. (2008). Exposure assessment in children: Soil ingestion. Indian Statistical Institute, Kolkata, India. October 31, 2008.

4. Jones, A.C., Anderton, D.L., Stanek, E.J., and Calabrese, E.J. (2008). Hormesis knowledge and opinion survey results. Presented at the Society of Toxicology Northeast Regional Chapter Fall Meeting, Shrewsbury, MA. October 24, 2008.

5. Nascarella, M.A., and Calabrese, E.J. (2008). Toxic potency and hormesis in dose-response assessment. Presented at the Society of Toxicology Northeast Regional Chapter Fall Meeting, Shrewsbury, MA. October 24, 2008.

6. Calabrese, E.J. (2008). Hormesis: a central concept in biology, the biomedical sciences and toxicology. University of Connecticut, Storrs, CT. October 22, 2008.

7. Waters, D.J., and Calabrese, E.J. (2008). The U-shaped curve: when more is not better. Environmental Mutagen Society. Puerto Rico. October 21, 2008.

8. Calabrese, E.J. (2008). Hormesis: What it means for pharmacology and toxicology. The Boston Area Pharmaceutical Toxicology Group (BAPTG). Novartis Institutes of Biomedical Research, Inc., Cambridge, MA. September 18, 2008.

9. Calabrese, E.J. (2008). Why I think hormesis is the most fundamental dose response relationship in biology. McMasters University, Hamilton, Canada. September 15, 2008.

10. Calabrese, E.J. (2008). Hormesis: Its significant to toxicology, risk assessment and Medicine. North American Congress of Clinical Toxicology, Toronto, Canada. September 14, 2008.

11. Calabrese, E.J. (2008). Hormesis and the pharmaceutical industry. Millennium Pharmaceuticals, Inc, Cambridge, MA. June 16, 2008.

12. Calabrese, E.J. (2008). Separating stimulant and impairing function in hormetic profiles with independent component analysis (ICA). The 7th Annual International Conference – Session II: Biomedical. Dose-Response 2008: Implications for Toxicology, Medicine, and Risk Assessment. University of Massachusetts, Amherst, MA. April 29, 2008.

13. Calabrese, E.J. (2008). Hormesis – 2008 – Current Status. The 7th Annual International Conference – Session I: Plenary. Dose-Response 2008: Implications for Toxicology, Medicine, and Risk Assessment. University of Massachusetts, Amherst, MA. April 29, 2008.

14. Nascarella, M.A., Stanek, E.J., and Calabrese, E.J. (2008). Evaluating stimulatory cell proliferation in anticancer drug dose-responses. University of Massachusetts School of Public Health and Health Sciences, 11th Annual Poster Session. University of Massachusetts, Amherst, MA. March 27, 2008

15. Nascarella, M.A., Stanek, E.J., and Calabrese, E.J. (2008). The quantitative evaluation of hormesis in anticancer drug dose-response. Society of Toxicology Annual Meeting. Seattle, WA. March 19, 2008.

16. Calabrese, E.J. (2008). Hormesis: The most fundamental dose response model. University of Ottawa Seminar, Ottawa, Canada. February 1, 2008.

17. Calabrese, E.J. (2008). Hormesis: Improving health reducing costs. Health Canada Seminar, Ottawa, Canada. January 31, 2008.

2007

1. Nascarella, M.A., and Calabrese, E.J. (2007). The quantitative characterization of the dose-response relationship of a panel of yeast (*Saccharomyces cerevisiae*) strains to prospective anticancer agents. Society for Risk Analysis Annual Meeting. San Antonio, TX. December 12, 2007.

2. Calabrese, E.J. (2007). Hormesis: The most fundamental dose response model. Department of Kinesiology, University of Massachusetts, Amherst, MA. October 29, 2007.

3. Nascarella, M.A., Stanek, E.J., and Calabrese, E.J. (2007). The quantitative characterization of hormesis in the National Cancer Institute's Yeast Anticancer Drug Screen Data. Society of Toxicology Northeast Regional Chapter, Fall Meeting. Groton, CT. October 26, 2007.

4. Calabrese, E.J. (2007). Hormesis and its relevance for clinical psychology. Harvard Medical School, Newton, MA. March 12, 2007.

2006

1. Calabrese, E.J. (2006). Hormesis: How it may affect toxicology and pharmacology. Sanofi-Aventis U.S. Inc. Bridgewater, MA. November 15, 2006.

2. Calabrese, E.J., and Stanek, E.J. (2006). Arsenic bioavailability in humans. The Gradient Corporation. Cambridge, MA. October 5, 2006.

3. Calabrese, E.J. (2006). Historical foundations of hormesis. University of Kansas Medical Center, Kansas City, KS. October 3, 2006.

4. Calabrese, E.J. (2006). Hormesis scientific foundations. University of Kansas Medical Center, Kansas City, KS. October 3, 2006.

5. Calabrese, E.J. (2006). Hormesis as a vehicle for therapeutic agents. Therapeutic Discovery Conference. Rensillierville, NY. September 10, 2006.

6. Staudenmayer, J. and Calabrese, E.J. (2006). Hormesis is more common than the threshold model in large NCI yeast database study. International Hormesis Society Conference. University of Massachusetts, Amherst, MA. June 7, 2006.

7. Calabrese, E.J. (2006). Hormesis: scientific foundations. Florence, Italy. April 7, 2006.

8. Calabrese, E.J. (2006). Hormesis: A challenge to the linear dose-response model, and its implications in risk assessment, regulatory policy, and biomedical research. Society of Toxicology 2006 45th Annual Meeting & ToxExpo. San Diego, CA. March 8, 2006.

9. Calabrese, E.J. (2006). Hormesis: Toxicological update and potential applications to the air force. Air Force Office of Scientific Research, Arlington, VA. January 31, 2006.

10. Calabrese, E.J. (2006). Experimental data relevant to single dose cancer assessment. 31st Annual Winter Toxicology Forum, Washington, DC. January 31, 2006.

11. Calabrese, E.J. (2006). Hormesis: Scientific development and implications for risk assessment. 31st Annual Winter Toxicology Forum, Washington, DC. January 31, 2006.

12. Calabrese, E.J. (2006). Hormesis: Common, generalizable and significant. Eli Lilly Research Laboratories, Greenfield, IN. January 11, 2006.

2005

1. Calabrese, E.J. (2005). Hormones is Important for Toxicologists and Risk Assessors: The Case for Hormesis as the Most Fundamental Dose Response Relations. Michigan State University, MI. December 8, 2005.

2. Calabrese, E.J. (2005). Historical Foundations of the Dose Response. Michigan State University, MI. December 8, 2005.

3. Calabrese, E.J. (2005). Soil Ingestion in Children and Adults. RIVM, Utrecht, The Netherlands. November 7, 2005.

4. Calabrese, E.J. (2005). Introduction of the Concept of Hormesis: Implications for Risk Assessment.. Utrecht University, Utrecht, The Netherlands. November 8, 2005.

5. Calabrese, E.J. (2005). Hormesis: Historical Perspectives, and Recent Advances. Health Council of the Netherlands, The Hague, The Netherlands. November 9, 2005.

6. Calabrese, E.J. (2005). Hormesis: Societal Implications. International Policy Network & the Institute of Economic Affairs. London, United Kingdom. November 10, 2005.

7. Calabrese, E.J. (2005). Hormesis and Its Impact on Future Toxicity Testing Strategies. National Research Council, Committee on Toxicity Testing and Assessment of Environmental Agents, Washington, DC. October 20-21, 2005.

8. Calabrese, E.J. (2005). Hormesis Its Impact on Toxicology and Risk Assessment. Yale University, New Haven, CT. October 6, 2005.

9. Calabrese, E.J. (2005). Is There Non-Random Biological Activity Below the NOAEL? Center for Risk Science and Communications. University of Michigan, Ann Arbor, MI. September 16, 2005.

10. Calabrese, E.J. (2005). Hormesis: Challenging the EPA Dose Response Paradigm. Environmental Management Association. Annual Sound Science Seminar, Michigan. September 15, 2005.

11. Calabrese, E.J. (2005). The Emergence of Hormesis in Biology, Toxicology and Medicine. 4th International BELLE Conference, University of Massachusetts, Amherst, MA. June 6, 2005.

12. Calabrese, E.J. (2005). Scientific underpinnings of hormesis. European Union. Video Presentation. Italy, May 19, 2005.

13. Calabrese, E.J. (2005). Costing the Earth. BBC Radio interview. April 5, 2005.

14. Calabrese, E.J. (2005). Biomedical and Clinical Implications of Hormesis (Guest Speaker). Annual Meeting Franklin and Hampshire Districts of Massachusetts Medical Society. Sunderland, MA. April 20, 2005

15. Calabrese, E.J. (2005). Hormesis Seminar. US EPA. Research Triangle Park, NC. April 26-27, 2005.

16. Calabrese, E.J. (2005). Soil Ingestion Estimation in Children and Adults: A Dominant Influence in Site-Specific Assessment. Health Canada Environmental and Occupational Toxicology Seminar Series. March 23, 2005.

17. Calabrese, E.J. (2005). Hormesis: The Dose-Response Revolution. Health Canada Environmental and Occupational Toxicology Seminar Series. March 24, 2005.

2004

1. Calabrese, E.J. (2004). Hormesis as a biological concept. Amherst College. October 25, 2004.

2. Calabrese, E.J. (2004). Hormesis as a concept in Toxicology. Holy Cross College. Worcester, MA. October 20, 2004.

3. Calabrese, E.J. (2004). Hormesis Roundtable. American Industrial Hygiene Conference and Exposition. Atlanta, GA. May 13, 2004.

4. Calabrese, E.J. (2004). Hormesis and the LNT. MIT. Cambridge, MA. April 1, 2004.

5. Stanek III, E.J., and Calabrese, E.J. (2004). Arsenic bioavailability in humans. Environmental Institute, University of Massachusetts. March 26, 2004.

6. Blain, R.R., and Calabrese, E.J. (2004). Hormesis database. Society of Toxicology 43rd Annual Meeting. Baltimore, MD. March 24, 2004.

7. Calabrese, E.J. (2004). Hormesis: Its implications for hazard and risk assessment. Society of Toxicology 43rd Annual Meeting. Baltimore, MD. March 22, 2004.

8. Ewald, K.A., and Calabrese, E.J. (2004). Protection against mechanistically distinct hepatotoxicants is associated with acute phase response. Society of Toxicology 43rd Annual Meeting. Baltimore, MD. March 22, 2004.

9.Calabrese, E.J. (2004). Hormesis and its implications for State health departments (Video Conference). Marin County Health Department. California. February 27, 2004.

10. Calabrese, E.J. (2004). Hormesis and its implications for aging. National Institute of Aging. Baltimore, MD. February 26, 2004.

11. Calabrese, E.J. (2004). Hormesis and new developments in assessing the dose-response. Johns Hopkins University. Baltimore, MD. February 25, 2004.

12. Calabrese, E.J. (2004). Hormesis and public health. Environmental Media Services. Washington, DC. February 25, 2004.

2003

1. Nascarella, M.A., and Calabrese, E.J. (2003). Stage specific toxicity and the hormetic dose response relationship in the black blowfly. 3rd Annual Institute of Environmental and Human Health Toxicology Exposition. Lubbock, TX. April 4, 2003.

2. Calabrese, E.J. (2003). Toxicological Foundations of Hormesis. Canadian Society of Toxicology. Plenary Address. Montreal, Canada. December 2003.

3. Calabrese, E.J. (2003). Hormesis and its role in Toxicology. Society of Toxicology of Canada. Plenary Session. Montreal, Canada. December 8, 2003.

4. Calabrese, E.J. (2003). The dose-response relationship: A new paradigm with broad biomedical implications. University of Massachusetts School of Public Health. Amherst, MA. November 25, 2003.

5. Calabrese, E.J. (2003). Hormesis. Hazard and risk assessment. Texas Tech University (Video Conference). November 7, 2003.

6. Calabrese, E.J. (2003). Hormesis. College of the Holy Cross. Worcester, MA. October 14, 2003.

7. Calabrese, E.J. (2003). Hormesis and risk assessment. The Dow Foundation. Midland, MI. September 17, 2003.

8. Calabrese, E.J., and Baldwin, L.A. (2003). Hormesis at the NTP. Second Non-Linearity Dose Response Relationships in Biology, Toxicology and Medicine Conference. Amherst, MA. June 8, 2003.

9. Calabrese, E.J. (2003). Biomedical implications of hormesis. Second Non-Linearity Dose Response Relationships in Biology, Toxicology and Medicine Conference. Amherst, MA. June 8, 2003.

10. Calabrese, E.J. (2003). Non-Linearity Dose-Response Relationships in Biology, Toxicology and Medicine, International Conference. Amherst, MA. May 28, 2003.

11. Calabrese, E.J. (2003). Bowdoin College, Department of Chemistry. Hormesis: New Concepts in our Understanding of the Dose Response. Brunswick, ME. May 2, 2003.

12. Calabrese, E.J. (2003). Tufts University, Department of Environmental Engineering. Hormesis: Occurrence and Mechanistic Foundations. Medford, MA. April 17, 2003.

13. Calabrese, E.J. (2003). Tufts University Medical School. Medical Implications of Hormesis. Boston, MA. April 17, 2003.

14. Calabrese, E.J. (2003). Society of Environmental Toxicology and Chemistry (SETAC) North Atlantic Chapter, Annual Meeting. Hormesis: Occurrence, Generalizability and Applications to Toxicology and Risk Assessment. Mystic, CT. April 24, 2003.

15. Calabrese, E.J. (2003). Columbia University, School of Education. Hormesis: Conceptual Framework and Application to Environmental Science Curriculum. New York. February 17, 2003.

16. Calabrese, E.J. (2003). Boston University School of Public Health. Biphasic Dose Response Relationships in Biology, Toxicology and Medicine. February 21, 2003.

17. Calabrese, E.J. (2003). Are Human Exposure Limits Too Conservative? Non-Linear Dose Response Relationships and “Hormesis”. Aberdeen Proving Grounds. January 14, 2003.

2002

1. Nascarella, M.A., and Calabrese, E.J. (2002). A model system to explore the hormesis dose response relationship. Society for Risk Analysis Annual Meeting. New Orleans, LA. December 9, 2002.

2. Nascarella, M.A., Stoffolano, J.G., and Calabrese, E.J. (2002). Hormesis and stage specific toxicity induced by cadmium in an insect model, the queen blowfly, *Phormia regina* Meig. Society for Environmental Toxicology and Chemistry Annual North American Meeting. Salt Lake City, UT. November 19, 2002.

3. Calabrese, E.J. (2002). International Conference on Chemical Mixtures (ICCM). Atlanta, GA. September 11, 2002.

4. Calabrese, E.J. (2002). Toxicological Risk Assessment of DIMP. Colorado Water Quality Control Commission. Denver, CO. December 10, 2002.

5. Calabrese, E.J. (2002). Hormesis and High Risk Groups. UMDNJ – New Jersey Medical School. November 14, 2002.

6. Calabrese, E.J. (2002). The Hormetic or Threshold Model: Which is the Most Common Phenomenon in Toxicology. Cornell University. November 7, 2002.

7. Calabrese, E.J. (2002). Federal-State and Risk Analysis Committee (FSTRAC). (2002). U-Shaped Dose Responses in Toxicology and their Risk Assessment Implications. October 23, 2002.

8. Calabrese, E.J. (2002). ATSDR. The Hormetic Dose-Response Model is More Common Than the Threshold Model in Toxicology. Atlanta, GA. September 11, 2002.

9. Calabrese, E.J. (2002). NCAC-SOT. U-shaped Dose Responses Curves – What, Why and How?. May 16, 2002.

10. Calabrese, E.J. (2002). Toxicological Foundation of Hormesis. Bates College. February 14, 2002.

11. Calabrese, E.J. (2002). Applications of Hormesis in Environmental Science. Bates College. February 15, 2002.

12. Calabrese, E.J. (2002). AMEC Corp. Risk Assessment and Hormesis. February 14, 2002.

13. Calabrese, E.J. (2002). Hormesis as Generalizable Hypothesis. General Electric. February 2, 2002.

14. Calabrese, E.J. (2002). Applications of Hormesis in Toxicology, Risk Assessment and Chemotherapeutics. University of Rhode Island. January 30, (2002).

2001

1. Nascarella, M.A., and Calabrese, E.J. (2001). The development of toxicological bioassay using black blow fly *Phromia regina* (Diptera: Calliphordae) larvae to evaluate physiological response to low level environmental stress. University of Massachusetts, School of Public Health and Health Sciences 4th Annual Poster Session. Amherst, MA. March, 2001.

2. Nascarella, M.A., Stoffolano, J.G., and Calabrese, E.J. (2001). Stage specific and hormetic effects induced by cadmium in the black blowfly. American Public Health Association 129th Annual Meeting. Atlanta, GA. October, 2001.

3. Calabrese, E.J. (2001). Hormesis: Current Status. Medical College of New York, Department of Animal Science. November 28, 2002. November , 14 2001, GE S

4. Calabrese, E.J. (2001). U-shaped dose responses in biology, toxicology and medicine: frequency, quantitative features and possible significance. Yale University. October 3, 2001.

5. Calabrese, E.J. (2001). The history of the dose-response relationship: reassessing the foundation of toxicology. Yale University. October 3, 2001.

6. Nascarella, M.A., Stoffolano, J.G., and Calabrese, E.J. (2001). Stage specific toxicity and hormetic effects induced by cadmium in the black blowfly phormia regina. *Academic Public Health Caucus*, Poster Presentation. Abstract#:31416.

7. Calabrese, E.J. (2001). Harvard University. Hormesis. September 21, 2001.

8. Calabrese, E.J. (2001). Hormesis: Pharmacological and Toxicological Foundations. University of Rhode Island. June 31, 2001.

2000

1. Calabrese, E.J. (2000). Scientific data on low dose radiation and cancer. Health Benefits of Low Dose Radiation. Radiation, Science, and Health, Inc. Washington, DC. November 15, 2000.

2. Calabrese, E.J. (2000). Radiation Hormesis. BEIR VII Committee meeting. National Academy of Sciences, Washington, DC. September 20, 2000.

3. Calabrese, E.J. (2000). When adults are at greater risk than children. Conference on 10X factors. Hoffman-LaRoche, Nutley, NJ. May 3, 2000.

4. Calabrese, E.J. (2000). Hormesis as a biological phenomenon. Dept. of Entomology, University of Massachusetts, Amherst, MA. March 22.

5. Calabrese, E.J. (2000). The historical foundations of chemical hormesis. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

6. Calabrese, E.J. (2000). The historical foundations of radiation hormesis. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

7. Calabrese, E.J. (2000). Factors contributing to the marginalization of both hypotheses. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

8. Calabrese, E.J. (2000). Establishment of quantitative evaluative criteria for assessing hormesis. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

9. Calabrese, E.J. (2000). Description of the chemical and radiation hormesis database. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

10. Calabrese, E.J. (2000). Why is hormesis not always seen? Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

11. Calabrese, E.J., and Baldwin, L.A. (2000). Apoptosis and biphasic response. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

12. Calabrese, E.J., and Baldwin, L.A. (2000). Cancer and U-shaped curves. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

13. Calabrese, E.J., and Baldwin, L.A. (2000). Alcohol and U-shaped curves. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

14. Calabrese, E.J., and Baldwin, L.A. (2000). The history of chemical hormesis. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

15. Calabrese, E.J., and Baldwin, L.A. (2000). The history of radiation hormesis. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

16. Calabrese, E.J., and Baldwin, L.A. (2000). Quantitative evaluation method for hormesis. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

17. Calabrese, E.J., and Baldwin, L.A. (2000). Reproductive toxicity & U-shaped curves. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

18. Calabrese, E.J., and Baldwin, L.A. (2000). Adenosine: Biphasic receptor binding via allosteric enhancement. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

19. Calabrese, E.J., and Baldwin, L.A. (2000). Adenosine: Adenosine induces biphasic responses in renal vasculature. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

20. Calabrese, E.J., and Baldwin, L.A. (2000). Adenosine: Apomorphine induced biphasic penile erection: Occurrence and mechanistic basis. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

21. Calabrese, E.J., and Baldwin, L.A. (2000). Biphasic response of estrogens: Angiogenesis, bone formation, and immunostimulation. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

22. Calabrese, E.J., and Baldwin, L.A. (2000). Biphasic response of estrogens: Human breast cell proliferation, and DNA synthesis in human vascular cells. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

23. Calabrese, E.J., and Baldwin, L.A. (2000). Biphasic response of estrogens: Phytoestrogen and clot formation. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

24. Calabrese, E.J., and Baldwin, L.A. (2000). Cadmium induced biphasic responses. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

25. Calabrese, E.J., and Baldwin, L.A. (2000). Biphasic effects of amyloid β-peptide. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

26. Calabrese, E.J., and Baldwin, L.A. (2000). Biphasic dose-response relationship between peripheral corticosterone and memory. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

27. Calabrese, E.J., and Baldwin, L.A. (2000). Biphasic effects of nitric oxide: Osteoclast differentiation, macrophase synthesis of vitamin D3, and vasodilation in the human forearm. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

28. Calabrese, E.J., and Baldwin, L.A. (2000). Biphasic effects of nitric oxide: Myocardial contraction, and calcium current in the heart. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

29. Calabrese, E.J., and Baldwin, L.A. (2000). Biphasic effects of nitric oxide: Methylene blue and behavior, excitatory amino acids, and neutrophil migration. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

30. Calabrese, E.J., and Baldwin, L.A. (2000). Biphasic effects of nitric oxide: Carbon monoxide induces a biphasic release of NO, biphasic effects of neuroleptic drugs on NOS, and NO and sperm function. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

31. Calabrese, E.J., and Baldwin, L.A. (2000). Biphasic effects of testosterone: Chondrocytes, and sertoli cell function. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

32. Calabrese, E.J., and Baldwin, L.A. (2000). Biphasic effects of testosterone: Prolactin, and prostate cancer cells (LNCaP). Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

33. Calabrese, E.J., and Baldwin, L.A. (2000). Biphasic effects of prostaglandins: PGE_2 and verapamil, a calcium channel blocker, and bone formation. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

34. Calabrese, E.J., and Baldwin, L.A. (2000). Biphasic effects of nonsteroidal anti-inflammatory drugs (NSAIDS): Prostaglandin production and transport. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

35. Calabrese, E.J., and Baldwin, L.A. (2000). Biphasic effects of prostaglandins: neutrophil migration, corticosteroids, and transforming growth factor β. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

36. Calabrese, E.J., and Baldwin, L.A. (2000). Biphasic effects of opiates: Cardiovascular and respiratory effects. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

37. Calabrese, E.J., and Baldwin, L.A. (2000). Biphasic effects of opiates: Cardiovascular and respiratory effects fetal breathing movements (FBM) in the lamb, neutrophil migration, peripheral blood lymphocyte (PBL) natural killer-activity, and corticosterone production. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

38. Calabrese, E.J., and Baldwin, L.A. (2000). Biphasic effects of opiates: hCG secretion, HIV growth, and behavioral responses pain/euphoria. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

39. Calabrese, E.J., and Baldwin, L.A. (2000). Biphasic effects of opiates: binding to brain receptors. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

40. Calabrese, E.J., and Baldwin, L.A. (2000). Biphasic chemotaxis effects of alcohol, alpha-1 proteinase inhibitor (API), FMLP, and mouse nerve growth factor. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

41. Calabrese, E.J., and Baldwin, L.A. (2000). Biphasic chemotaxis effects on neutrophils, tumor cells, and fibroblasts. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

42. Calabrese, E.J., and Baldwin, L.A. (2000). Biphasic effects of dopamine: Background and biomedical significance, and prolactin secretion. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

43. Calabrese, E.J., and Baldwin, L.A. (2000). Biphasic effects of dopamine: artery relaxation. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

44. Calabrese, E.J., and Baldwin, L.A. (2000). Biphasic effects of dopamine: Apomorphine on pain, and locomotion. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

45. Calabrese, E.J., and Baldwin, L.A. (2000). Biphasic effects of dopamine agonists on memory. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

46. Calabrese, E.J., and Baldwin, L.A. (2000). Apoptosis and biphasic response. Poster presentation. Chemical and Radiation Hormesis Scientific Foundations. Amherst, MA. January 19-20.

1999

1. Calabrese, E.J. (1999). Toxicology of DIMP. National Academy of Sciences. Washington, DC. November 22.

2. Calabrese, E.J. (1999). Radiation hormesis: current status. U.S. Nuclear Regulatory Commission. Rockville, MD. March 29.

3. Calabrese, E.J. (1999). Hormesis and adaptation. NIH. Bethesda, MD. April 26.

4. Calabrese, E.J. (1999). Single exposure carcinogen database. U.S. EPA. Washington, DC. June 12.

5. Stanek, E.J., and Calabrese, E.J. (1999). Soil ingestion in children. U.S. EPA. Research Triangle Park, NC. June 14.

6. Calabrese, E.J. (1999). Health effects of DIMP. U.S. National Academy of Science. Washington, DC. November 4.

7. Calabrese, E.J. (1999). Radiation hormesis. NE Radiology Society. Boston, MA. June 18.

1998

1. Calabrese, E.J. (1998). New developments on hormesis. AIHC. Washington, DC. January 13.

2. Calabrese, E.J. (1998). Scientific foundations of hormesis. North Carolina Chapter of the Society of Risk Analysis. Carey, NC. April 27.

3. Calabrese, E.J. (1998). Chair – conference on societal implications of hormesis. Research Triangle Park, NC. October 5-6.

4. Calabrese, E.J. (1998). Historical foundations of chemical hormesis. Conference on societal implications of hormesis. Research Triangle Park, NC. October 5-6.

5. Calabrese, E.J. (1998). Implications of hormesis for risk assessment. 10X uncertainty factor conference. Medical College of New Jersey. Newark, NJ. November 11.

6. Calabrese, E.J. (1998). Non-monotonic dose-response relationships and their risk assessment implications. EPA National Symposium. Carey, NC. April 28.

7. Calabrese, E.J. (1998). Single exposure carcinogens and its implications for state public health risk assessors. National Teleconference Presentations for the ATHO Foundation. May 7.

8. Calabrese, E.J. (1998). U-shaped dose-response relationship. EPA Drinking Water Office-FASTAC. Boston, MA. May 8.

9. Calabrese, E.J. (1998). Hormesis and its risk assessment implications. Pfizer. Groton, CT. May 21.

10. Calabrese, E.J. (1998). Low dose responses to chemical stressor agents. General Electric. Schenectady, NY. July 30.

11. Calabrese, E.J. (1998). Hormesis and the biological effects of low level exposures. Occupational Safety and Health Group. Washington, DC. August 4-5.

1997

1. Calabrese, E.J. (1997). Dose-response relationships and endocrine disruption. Conference on Endocrine Disruption. Research Triangle Park, NC. January 13.

2. Calabrese, E.J. (1997). Single exposure carcinogen data base. NIOSH. Cincinnati, OH. January 23.

3. Calabrese, E.J., Blain, R.B., Leonard, D., and Ewald, K. (1997). Role of neutrophils and acute phase proteins in the hepatotoxic interaction between kepone and carbon tetrachloride. SOT Annual Meeting. Cincinnati, OH. March 10.

4. Calabrese, E.J., and Stanek, E.J. (1997). The amount of particle size of soil ingested by children. SOT Annual Meeting. Cincinnati, OH. March 12.

5. Calabrese, E.J., and Blain, R.B. (1997). Stress effects on carbon tetrachloride toxicity. SOT Annual Meeting. Cincinnati, OH. March.

6. Calabrese, E.J. (1997). Role of hormesis in risk management. DOD conference at NIH, Bethesda, MD. May 15.

7. Calabrese, E.J. (1997). Development of a chemical hormesis database: strengths, limitations, and generalized ability. Toxicology Forum. Aspen, CO. July 7-11.

8. Calabrese, E.J. (1997). Hormesis: Database and underlying mechanisms. Toxicology Forum, Aspen, CO. July 13.

9. Calabrese, E.J. (1997). Development of a chemical hormesis data base: Strengths, limitations, and generalized ability. Toxicology Forum. Aspen, CO. July 11.

10. Calabrese, E.J. (1997). Acute episodes of soil ingestion. Society of Risk Analysis. Washington, DC. December 7.

11. Calabrese, E.J. (1997). Single exposure carcinogens. Society of Risk Analysis. Washington, DC. December 7.

1996

1. Calabrese, E.J. (1996). Adaptive mechanisms and dose-response relationships. Texas A&M University. Texas. February, 19.

2. Calabrese, E.J. (1996). Acute exposures to genotoxic carcinogens. University of Montreal. Canada. April 10.

3. Calabrese, E.J. (1996). Current issues in risk assessment. Harvard University. Boston, MA. August 5.

4. Calabrese, E.J. (1996). Acute exposures to chemical carcinogens. National Academy of Sciences. Washington, DC. September 17.

5. Calabrese, E.J. (1996). Chemical hormesis. Texas Chemical Industry Association. Houston, TX. September 23.

6. Calabrese, E.J. (1996). Chaired session on genetic factors and environmental exposures. EPA Conference. Durham, NC. September 25.

7. Calabrese, E.J. (1996). Ecogenetics: genetic predisposition to toxic substances. EPA conference on interindividual differences in susceptibility. Durham, NC.

8. Calabrese, E.J. (1996). Single exposure carcinogens. New England Society for Occupational and Environmental Medicine. Boston, MA. December 5.

9. Calabrese, E.J. (1996). Chemical Hormesis. Safety factors in risk assessment. Nutley, NJ. December 6.

1995

1. Calabrese, E.J. (1995). Single exposure carcinogens. Society of Toxicology. Baltimore, MD. March 5-9.

2. Calabrese, E.J. (1995). Retrieval database on single exposure carcinogens. Society of Toxicology. Baltimore, MD. March 5-9.

3. Calabrese, E.J. (1995). Development of annual soil ingestion distributional estimates of 64 children based on daily soil ingestion values. Society of Toxicology. Baltimore, MD. March 5-9.

4. Schmidt, C.W., Leonard, D.A., Baldwin, L.A., Zhao, X.Q., and Calabrese, E.J. (1995). Administration of G2 activating agents modulates carbon tetrachloride induced hepatotoxicity. Society of Toxicology. Baltimore, MD. March 5-9.

5. Johnson, R.B., and Calabrese, E.J. (1995). The effects of repeat dosing and repeat blood withdrawal on carbon tetrachloride toxicity. Society of Toxicology. Baltimore, MD. March 5-9.

6. Calabrese, E.J. (1995). Uncertainty factors: their toxicological bases. Conference on Uncertainty Factors in Risk Assessment. NJ Medical School. Nutley, NJ. April 7.

7. Calabrese, E.J. (1995). Carcinogens that cause cancer with an single dose. Clark University. Worcester, MA. April 16.

8. Calabrese, E.J. (1995). Single exposure carcinogens. Risk Science Institute/Brookings Institute. l Washington, DC. April 23.

9. Calabrese, E.J. (1995). Soil ingestion in children and adults. Louisiana Department of Environmental Quality. Baton Rouge, LA. June 28.

10. Calabrese, E.J. (1995). Soil ingestion estimates. 10th Annual Soil Contamination Conference. University of Massachusetts. Amherst, MA. October 23.

11. Calabrese, E.J. (1995). Variability in response to toxic substances. Conference on Multiple Chemical Sensitivity. Baltimore, MD. October 30.

12. Calabrese, E.J. (1995). BELLE-An overview and a long-term view. Texas Chemical Industry Institute. Houston, TX. November 7.

13. Calabrese, E.J. (1995). Tissue repair as a toxicological principle. American College of Toxicology. Vienna, VA. November 12.

1994

1. Calabrese, E.J. (1994). Biological effects of low level exposures to chemicals and radiation. Society of Risk Analysis. Baltimore, MD. December 7.

2. Calabrese, E.J. (1994). Chemical mixtures - a primer. US EPA. Raleigh, NC. November 7.

3. Calabrese, E.J. (1994). Current soil ingestion estimates. Louisiana State University. New Orleans, LA. November 2.

4. Calabrese, E.J. (1994). Children and adult soil ingestion. 9th Conference on Hydrocarbon Contaminated Soils. Amherst, MA. October 20.

5. Calabrese, E.J. (1994). BELLE as a concept. American College of Toxicology. Williamsburg, VA. October 26.

6. Calabrese, E.J. (1994). How to derive daily estimates of soil ingestion. U.S. EPA Exposure Assessment Group. Washington, DC. June 1.

7. Calabrese, E.J. (1994). Recent developments in soil ingestion. International Association for Lead and Zinc Industries. Chapel Hill, NC. May 26.

8. Calabrese, E.J. (1994). Biological effects of low level exposures (BELLE). American Occupational Health Conference. Chicago, IL. April 21.

9. Calabrese, E.J. (1994). Discussion of the key risk assessment issues. Symposium on Synthetic Vitreous Fibers: Scientific and Public Policy Issues. ISRTP. Arlington, VA. March 2-3.

10. Calabrese, E.J., and Mehendale, H.M. (1994). Cellular repair processes-the role of tissue repair as an adaptive strategy: why low doses are often non-toxic and why high doses can be fatal. Society of Toxicology 33rd Annual Meeting. Dallas, TX. March 1994.

11. Calabrese, E.J. (1994). Discussion of the key public policy issues and discussion of issues identified and recommendations made. Symposium on Synthetic Vitreous Fibers: Scientific and Public Policy Issues. ISRTP. Arlington, VA. March 2-3.

12. Calabrese, E.J. (1994). Chair session on unusual dose-response curves and implications for risk assessment. Society of Toxicology. Dallas, TX. March 17.

13. Calabrese, E.J. (1994). Cellular repair processes--the role of tissue repair as an adaptive strategy: why low doses are often non-toxic and why high doses can be fatal. Society of Toxicology Annual Meeting, Poster Discussion Session: Unusual Dose-Response Relationships: Mechanisms and Implications for Risk Assessment. Dallas, TX. March 17.

14. Calabrese, E.J. (1994). Session Chair. Unusual shaped dose-response curves. Society of Toxicology Annual Meeting, Poster Discussion Session: Unusual Dose-Response Relationships: Mechanisms and Implications for Risk Assessment. Dallas, TX. March 17.

15. Calabrese, E.J. (1994). A single exposure to certain chemical carcinogens can cause cancer: documentation, limitations and implications for risk assessment. US EPA Environmental Criteria and Assessment Office Seminar. Cincinnati, OH. March 30.

16. Calabrese, E.J. (1994). Single exposure carcinogens. Massachusetts Attorney's General. Boston, MA. January 13.

1993

1. Calabrese, E.J. (1993). The use of in vitro studies in the pursuit of improved animal extrapolation. World Congress on Alternative and Animal Use in the Life Sciences. Baltimore, MD. November, 14-19.

2. Calabrese, E.J. (1993). Soil ingestion estimates. ERM Corporation. Cambridge, MA. September 27.

3. Calabrese, E.J. (1993). How valid are EPA's soil ingestion estimates. 8th Annual Soil Contamination Conference. Amherst, MA. September 23.

4. Calabrese, E.J. (1993). Soil ingestion studies reviewed. Amer. Indust. Health Council. Amherst, MA. September 22.

5. Calabrese, E.J. (1993). G2 hepatocytes in CCl_4 toxicity. Annual Society of Toxicology. New Orleans, LA.

6. Calabrese, E.J. (1993). Hepatic ODC activity in fish models. Annual Society of Toxicology. New Orleans, LA.

7. Calabrese, E.J. (1993). Supercarcinogens. National Center for Toxicological Research (NCTR). Jefferson, Arkansas. September 16.

8. Calabrese, E.J. (1993). Lead as a mitogen: Effects on CCl_4 hepatotoxicity. NCTR. Jefferson, Arkansas. September 16.

9. Calabrese, E.J. (1993). G_2 hepatocytes: A new hepatic cellular triage system in response to toxic agents. NCTR. Jefferson, Arkansas. September 16.

10. Calabrese, E.J. Single exposure carcinogens. (1993). New Jersey Medical School. Newark, NJ. March 3.

11. Calabrese, E.J. (1993). Toxicological Risk Assessment of DIMP. Colorado Water Quality Control Commission. Denver, CO. March, 1993.

1992

1. Calabrese, E.J., Leonard, D.A., Baldwin, L.A., Kostecki, P.T. (1992). Ornithine decarboxylase (ODC) activity in the liver of individual medaka (*Oryzias Latipes*). SETAC 13th Annual Meeting. Cincinnati, OH. November 8-12.

2. Calabrese, E.J., Leonard, D.A., and Baldwin, L.A., (1992). Activated G-2 hepatocytes: A cellular triage system effective against hepatotoxins. SETAC 13th Annual Meeting. Cincinnati, OH. November 8-12.

3. Bell, C.E., Baldwin, L.A., Kostecki, P.T., and Calabrese, E.J. (1992). Comparative response of rainbow trout and rat to the liver mitogen, lead. SETAC 13th Annual Meeting. Cincinnati, OH. November 8-12.

4. Calabrese, E.J., Leonard, D.A., and Baldwin, L.A. (1992). Potentiation of CCl4-induced hepatotoxicity by blood drawing. Presented at the SETAC 13th Annual Meeting, November 8-12, Cincinnati, OH.

5. Calabrese, E.J., Leonard, D.A. and Baldwin, L.A. (1992). Hepatic ornithine decarboxylase (ODC) activity in individual medaka (Oryzias latipes). Annual meeting of the American College of Toxicology, San Francisco, CA. October, 1992.

6. Calabrese, E.J., Leonard, D.A. and Baldwin, L.A. (1992). Reduction in CCl_4-induced hepatotoxicity by prior treatment with diatomaceous earth. Annual meeting of the American College of Toxicology, San Francisco, CA. October, 1992.

7. Calabrese, E.J., Leonard, D.A. and Baldwin, L.A. (1992). Reduction in hepatotoxicity by repeated injections of DMN at doses exceeding the MTD. Annual meeting of the American College of Toxicology, San Francisco, CA. October, 1992.

8. Calabrese, Leonard, D.A. and Baldwin,L.A. (1992). Activated G2 hepatocytes: A cellular triage system effective against hepatotoxins. Annual meeting of the American College of Toxicology, San Francisco, CA. October, 1992.

9. Calabrese, E.J. (1992). Animal Extrapolation: Future issues. Pfizer, Inc. Groton, CT. September 3, 1992.

10. Calabrese, E.J. (1992). Chairperson and introductory comments to session on ecological risk assessment. Seventh Annual Hydrocarbon Contaminated Soil Conference, University of Massachusetts, Amherst, MA.

11. Calabrese, E.J. (1992). Uncertainty factors in ecological risk assessment. Seventh Annual Hydrocarbon Contaminated Soil Conference, University of Massachusetts, Amherst, MA.

12. Calabrese, E.J. (1992). Effects of peroxisome proliferators on trout and Medaka. U.S. Army Research and Development Lab Annual Research Symposium. Frederick, MD. April 23, 1992.

13. Calabrese, E.J. (1992). Single exposure carcinogens. Joint EPA, NIEHS Seminar, Research Triangle Park, NC. April 14, 1992.

14. Calabrese, E.J. (1992). The interdependence of some uncertainty factors: Implications for risk assessment. Conference on New Issues in Occupational Health, Duke University. April 13, 1992.

15. Calabrese, E.J. (1992). Soil ingestion. Health and Welfare Canada. Toronto, Canada. March 24, 1992.

16. Calabrese, E.J. (1992). Differentiating soil vs dust ingestion. Third Annual Hydrocarbon Conference. Long Beach, CA. March 12, 1992.

17. Calabrese, E.J. (1992). Can a single exposure to a chemical carcinogen cause cancer. 3M Corporation, Minneapolis, MN. January 20, 1992.

18. Calabrese, E.J. (1992). Soil Ingestion in Children. 3M Corporation. Minneapolis, MN. January 20, 1992.

19. Calabrese, E.J. (1992). Multiple chemical sensitivities. 3M Corporation. Minneapolis, MN. January 20, 1992.

20. Calabrese, E.J. (1992). Current lead ingestion estimates. Presented at ENSOR Corp., Boston, MA. January 15, 1992.

21. Calabrese, E.J. (1992). What do we know about soil ingestion? Ensor Corp., Cambridge, MA. January 10, 1992.

1991

1. Calabrese, E.J. and Kostecki, P. (1991). Soil contaminant research priorities for the 1990's. Department of Engineering, University of Massachusetts. November 23, 1991.

2. Stewart, J.H., Hosmer, D.W., and Calabrese, E.J. (1991). Estimation and use of the TD50 with the median effect equation in cancer quantitative risk assessment. Society for Risk Analysis. McLean VA. November 16, 1991.

3. Stewart, J.H., Hosmer, D.W., and Calabrese, E.J. (1991). The median effect equation; its biological plausibility as a model for cancer quantitative risk assessment. Society for Risk Analysis. McLean VA. November 16, 1991.

4. Calabrese, E.J. (1991). A single dose carcinogens. Health Effects Institute. Cambridge, MA. Oct., 30, 1991.

5. Calabrese, E.J. (1991). Single doses of carcinogens and cancer risk. Presented at U.S. EPA. Duluth, MN. October 24, 1991.

6. Calabrese, E.J. (1991). The effects of peroxisome proliferators and mitogens on fish. U.S. EPA. Duluth, MN. October 23, 1991.

7. Calabrese, E.J., and Stanek, E.J. (1991). Workshop on estimating how much soil children ingest. Presented at the 6th Annual Hydrocarbon Conference. Amherst, MA. September 24, 1991.

8. Calabrese, E.J. (1991). Soil ingestion estimates: An update presented to the International Lead and Zinc Research Institute. Research Triangle Park, NC. September 9, 1991.

9. Calabrese, E.J. (1991). A large number of carcinogens can cause cancer with a single dose. ATSDR Guest Seminar. September 6, 1991.

10. Calabrese, E.J. (1991). How reliable are soil ingestion estimates? ATSDR Guest Seminar. September 6, 1991.

11. Calabrese, E.J., and Kostecki, P.T. (1991). An update on activities of the council for health and environmental safety of soil (CHESS). ATSDR Guest Seminar. September 6, 1991.

12. Calabrese, E.J. (1991). Risk communication and public skepticism. U.S. Forest Service, sponsored Malathion Workshop. Arlington, VA. August 27, 1991.

13. Calabrese, E.J. (1991). Pharmacodynamics/pharmacokinetics of malathion: A discussion of risk assessment models and animal data extrapolation including physiologically-based models in evaluation of malathion human toxicity. U.S. Forest Service sponsored Malathion Workshop. Arlington, VA. August 26, 1991.

14. Bell, C.E., Kostecki, P.T., and Calabrese, E.J. (1991). Role of risk assessment in state regulatory programs for contaminated soils. Risk-based standards workshop. U.S. Department of Energy. Baltimore, MD. July 9-10, 1991.

15. Calabrese, E.J. and Stanek, E.J. (1991). Qualitative and quantitative evidence of soil ingestion. Presented at the 15th annual army environmental R & D Symposium. Williamsbury, VA. June 25, 1991.

16. Calabrese, E.J. (1991). The role pharmacokinetics in facilitating interspecies extrapolation. 7th International Symposium on Radiopharmaceutics. Boston, MA. June 6, 1991.

17. Calabrese, E.J. (1991). Current issues in risk assessment. Presented at the WHO sponsored course on Toxicology and Risk Assessment. Ottawa, Canada. May 22, 1991.

18. Calabrese, E.J. (1991). Single exposure carcinogens. Guest seminar for Health and Welfare Canada. Ottawa, Canada. May 22, 1991.

19. Donohue, M., Baldwin, L., Kostecki, P. and Calabrese, E.J. (1991). The effects of peroxisome proliferators on primary trout hepatocytes. Conference of the American Association on Cancer Research, Houston, Texas. May, 1991.

20. Scarano, L., Baldwin, L., Kostecki, P., and Calabrese, E.J. (1991). Interactions of peroxisome proliferators in rat. American Association on Cancer Research. Houston, Texas. May, 1991.

21. Calabrese, E.J. (1991). Short term exposures to potent carcinogens. Invited presentation to the Committee on Toxicology, National Academy of Sciences, Washington, DC. May 15, 1991.

22. Donahue, M. and Calabrese, E.J. (1991). Peroxisome proliferation in trout. Proceedings of the conference on Regulating Drinking Water in the 1990's. University of Massachusetts, Amherst. April 4, 1990.

23. Calabrese, E.J. (1991). Uncertainty factors in risk assessment. Presented at Conference on Regulating Drinking Water in the 1990's. University of Massachusetts, Amherst. April 3, 1991.

24. Gilbert, C.E. and Calabrese, E.J. (1991). Public health risks from SOCs in drinking water. Presented at the Conference on Drinking Water in the 1990's. University of Massachusetts, Amherst. April 3, 1991.

25. Wysynski, A. and Calabrese, E.J. (1991). Peroxisome proliferators and public health concerns. Presented at the Conference on Regulating Drinking Water in the 1990's. University of Massachusetts. April 3, 1991.

26. Witko, J. and Calabrese, E.J. (1991). Regulating compliances and SOCs. Proceedings of the conference on Regulating Drinking Water in the 1990's. University of Massachusetts, Amherst. April 3, 1991.

27. Wysynski, A., Baldwin, L. Kostecki, P. and Calabrese, E.J. (1991). Peroxisomal proliferators: Omega-3 fatty acids, clofibrate and DEHP: the interactive potential. Society of Toxicology. Dallas, February 27, 1991.

28. Calabrese, E.J. (1991). Chemical carcinogens causing cancer with a single exposure. Implications for risk assessment. University of Oklahoma, School of Public Health. Oklahoma City, Oklahoma. February 27, 1991.

29. Gilbert, C. and Calabrese, E.J. (1991). Hyperbilirubinemia. A new animal model. Society of Toxicology. Dallas, TX. February, 26, 1991.

30. Kenyon, E. and Calabrese, E.J. (1991). Interspecies differences in enterohepatic circulation. Society of Toxicology. Dallas, TX. February, 26.

31. Langlois, C. and Calabrese, E.J. (1991). The interaction of copper, nitrite and chlorite on red blood cells. Presented at the Chemical Oxidation: Technology for the 1990's Conference. Nashville, TN. February 23, 1991.

32. Calabrese, E.J. (1991). New challenges for risk assessment: What to do about carcinogens causing cancer with a single dose. University of Michigan, School of Public Health. Ann Arbor, MI. February 21, 1991.

1990

1. Wysynski, A., Baldwin, L., Leonard, D., and Calabrese, E. (1990). The interaction of omega-3 fatty acids with peroxisome proliferators in the rat model. Presented at the New England SOT Regional meeting. Boston, MA. December, 1990.

2. Kostecki, P. and Calabrese, E.J. (1990). The relevance of CHESS to the oil industry. Presented at an API sponsored meeting in Cleveland, OH. November 20, 1990.

3. Bell, C.E., P.T. Kostecki and E.J. Calabrese. (1990). UST Cleanup: Concepts, Problems and Alternatives. Paul Smiths College. Paul Smiths, NY. November 13, 1990.

4. Scarano, L., Baldwin, L., Calabrese, E.J. and Kostecki, P. (1990). Lack of peroxisomal proliferation in Japanese Medaka exposed to DEHP on 2,4-D. Presented at the Society for Environmental Toxicology and Chemistry. Washington, DC. November, 12, 1990.

5. Yang, J., Calabrese, E.J., Kostecki, P. and Baldwin, L. (1990). Effect of rodent hepatic peroxisomal proliferation on Rainbow Trout. Presented at the Society for Environmental Toxicology and Chemistry. Washington, DC. November 12, 1990.

6. Calabrese, E.J. (1990). Estimating soil ingestion in children: methodological issues. National Conference on Minority Issues in Environmental Health. Atlanta, GA.

7. Gilbert, C. and Calabrese, E.J. (1990). Development of a neonatal hyperbilirubinemia rat model for toxicity studies. Presented at the Conference Similarities and Differences Between Children and Adults: Implications for Risk Assessment. Hunt Valley, MN. November 7, 1990.

8. Gilbert, C. and Calabrese, E.J. (1990). The development of methemoglobin reductase in the neonatal rat. Presented at the Conference on Similarities and Differences Between Children and Adults: Implications for Risk Assessment. Hunt Valley, MN. November 7, 1990.

9. Kostecki, P., and Calabrese, E.J. (1990). CHESS: An Review of Program. Presented at the 5th Annual Hydrocarbon Contaminated Soil Conference. University of Massachusetts, Amherst. September 26, 1990.

10. Bell, C., Kostecki, P., and Calabrese, E.J. (1990). Survey of State Approaches for Soil Cleanup Levels. Presented at the 5th Annual Hydrocarbon Contaminated Soil Conference. University of Massachusetts, Amherst. September 26, 1990.

11. Calabrese, E.J., and Stanek, E.J. (1990). Methodological Advances in Estimating Soil Ingestion. EPA sponsored conference on Lead Exposures to Children. Research Triangle Park, NC. September 24, 1990.

12. Gilbert, C.E., and Calabrese, E.J., (1990). Educating Youth on the Dangers of Childhood Lead Poisoning. Environmental Health Risk Education for Youth: Curricula Concepts, Strategies and Resources. Interagency Task Force on Environmental Cancer and Lung Disease. September 12-14, 1990. Arlington, VA.

13. Gilbert, C.E., Jones, T., Calabrese, E.J., and Winder, A. (1990). Environmental Curricula Concerning Waste Management. Environmental Health Risk Education for Youth: Curricula Concepts, Strategies and Resources. Interagency Task Force on Environmental Cancer and Lung Disease. September 12-14, 1990. Arlington, VA.

14. Langlois, C., Leonard, D., and Calabrese, E.J. (1990). Interactions of multiple methemoglobin-forming agents. New England SOT Regional Meeting, Boston. June 1, 1990.

15. Gilbert, C., and Calabrese, E.J. (1990). Development of a neonatal hyperbilirubinemia model. Maine Biological Symposium, Mt. Dessert Island. May 30, 1990.

16. Stewart, J., and Calabrese. (1990). The median effect principle in toxicology and risk assessment. Maine Biological Symposium, Mt. Dessert Island. May 30, 1990.

17. Calabrese, E.J. (1990). A toxicological appraisal drinking water disinfectants and implications for risk assessment. National Conference on Drinking Water and Health, Amherst, MA. April 30, 1990-May 2, 1990.

18. Gilbert, C., and Calabrese, E.J. (1990). MTBE-a critical evaluation of its toxicological data base. National Conference on Drinking Water and Health, Amherst, MA. April 30, 1990-May 2, 1990.

19. Langlois, C., Leonard, D., and Calabrese, E.J. (1990). The effects of multiple exposure of the drinking water oxidants, chlorite, nitrite and copper on red blood cells. National Conference on Drinking Water and Health, Amherst, MA. April 30, 1990-May 2, 1990.

20. Stewart, J., and Calabrese, E.J. (1990). The application of the median effect principle for assessing risk to drinking water contaminants. National Conference on Drinking Water and Health, Amherst, MA. April 30, 1990-May 2, 1990.

21. Calabrese, E.J. (1990). Acute toxicities and cancer risks: the problem of single exposures. Presented at the U.S. Environmental Protection Agency, Washington, DC. April 11, 1990.

22. Calabrese, E.J. (1990). A single exposure to a carcinogen can cause cancer. Presented at the Center for Environmental Toxicology, Michigan State University, East Lansing, MI. April 3, 1990.

23. Calabrese, E.J. (1990). Single exposures and cancer risks. Presented to the participants of the EPA sponsored workshop on Acute Toxicities. Washington, DC. March 12, 1990.

24. Bell, C., Kostecki, P. and Calabrese, E.J. (1990). Petroleum contaminated soils survey: clean-up levels for western states. Presented at conference on Hydrocarbon Contaminated Soils and Groundwater. Newport Beach, CA. February 19-22, 1990.

25. Kostecki, P. and Calabrese, E.J. (1990). Council for Health and Environmental Safety of Soils-CHESS. Presented at conference on Hydrocarbon Contaminated Soils and Groundwater. Newport Beach, CA. February 19-22, 1990.

26. Edmisten, G., Calabrese, E.J. and Harris, P. (1990). Health risks associated with the remediation of contaminated soils. Presented at conference on Hydrocarbon Contaminated Soils and Groundwater. Newport Beach, CA. February 19-22, 1990.

27. Calabrese, E. (1990). Methodological approaches for assessing soil ingestion. Presented at conference on Hydrocarbon Contaminated Soils and Groundwater. Newport Beach, CA. February 19-22, 1990.

28. Calabrese, E.J. (1990). Methodological approaches to assessing chemical interactions of toxicological significance. Presented at the Aberdeen Proving Ground, Maryland, Department of Defense. June 24, 1990.

29. Calabrese, E.J. (1990). Soil ingestion in children. Environ Corp., Princeton, NJ. January 26, 1990.

1989

1. Calabrese, E.J. (1989). Interspecies variations in enterohepatic recirculation of PCBs and the implications for cancer risk. General Electric Sponsored Research Seminar. Arlington, VA. November 29, 1989.

2. Kostecki, E.J. (1989). CHESS: Its role in assessing soil cleanup levels. Dept. of Defense Environ. Conference. Williamsburg, VA. (November 16, 1989.

3. Calabrese, E.J. (1989). Can a single exposure to a carcinogen cause cancer. Presented at the Chemical Defense Research Conference. Auberdeen, MD. November 14, 1989.

4. Bell, C., Kostecki, P. and Calabrese, E.J. (1989). Survey of state regulatory programs for soil clean-up. EPA sponsored conference on state regulatory programs for underground storage tanks. Alberque, New Mexico. November 11, 1989.

5. Calabrese, E.J. (1989). The health effects of DIMP. Colorado Department of Health. Denver, CO. November 8, 1989.

6. Calabrese, E.J. (1989). One exposure study and chemical carcinogenesis. Seminar, Department of Environmental Engineering, University of Massachusetts, Amherst, MA. October 13, 1989.

7. Ochs, J., Calabrese, E.J. et al. (1989). The joint exposure of two peroxisome proliferation agents on hepatic fatty acid oxidase activity in mice. Presented at New England Regional Chapter of the Society of toxicology. Sturbridge, MA. October 20, 1989.

8. Scarano, G., Calabrese, E.J. et al. (1989). The capacity of Rainbow Trout to display hepatic peroxisome proliferation. Presented at New England Regional Chapter of the Society of toxicology. Sturbridge, MA. October 20, 1989.

9. Nolan, K. and Calabrese, E.J. (1989). The effect of vitamin C on intestinal, cecal, and urinary B-glucuronidase activity in the rodent. Presented at New England Regional Chapter of the Society of toxicology. Sturbridge, MA. October 20, 1989.

10. Calabrese, E.J. and Sonich-Mullin C. (1989). Genetic factors and susceptibility to occupational illness. Presented at WHO Conference, Drefeld Federal Republic of Germany. October 17-20, 1989.

11. Calabrese, E.J. et al. (1989). Results of a pilot study to estimate soil ingestion in adults. In: National Conference on Petroleum Contaminated Soils Conference. University of Massachusetts, Amherst, MA. September 25-29, 1989.

12. Stanek, E.J., Calabrese, E.J. et al. (1989). Improved estimates of soil ingestion in children. In: National Conference on Petroleum Contaminated Soils Conference. University of Massachusetts, Amherst, MA. September 25-29, 1989.

13. Bell, C., Kostecki, P. and Calabrese, E.J. (1989). National survey of regulatory approaches to remediation of petroleum contaminated soils. In: National Conference on Petroleum Contaminated Soils Conference. University of Massachusetts, Amherst, MA. September 25-29, 1989.

14. Gilbert, C. and Calabrese, E.J. (1989). Methodological approaches for selecting indicator compounds for home heat fuel number 2. In: National Conference on Petroleum Contaminated Soils Conference. University of Massachusetts, Amherst, MA. September 25-29, 1989.

15. Calabrese, E.J. (1989). Toxicological Risk Assessment of DIMP. Colorado Water Quality Control Commission. Denver, CO. September, 1989.

16. Calabrese, E.J. (1989). Peroxisome proliferation in fish. Annual Aquatic Toxicology Research meeting. Department of Defense. Ft. Detrick, Maryland. August, 9, 1989.

17. Calabrese, E.J. (1989). Toxicological Risk Assessment of DIMP. Colorado Water Quality Control Commission. Denver, CO. July,1989.

18. Calabrese, E.J. (1989). The role of toxicology in assessing risks for naturally occurring toxins in the food supply. Food and Nutrition Board of the National Academy of Sciences. Falmouth, MA. July, 23, 1989.

19. Bell, C., Kostecki, P. and Calabrese, E.J. (1989). State approaches for the clean-up of petroleum contaminated soil. Maine Biological Science Conference, Portland, Maine. June 3, 1987.

20. Calabrese, E.J., and Kostecki, P. (1989). Biomarkers for toxicology studies in fish. Procter and Gamble, Cincinnati. June 12, 1989.

21. Kostecki, P., and Calabrese, P. (1989). International approaches for assessing health risks from contaminated soils. National Public Health Association Conference, San Antonio, Texas. June 21, 1989.

22. Calabrese, E.J. (1989). Peroxisomes proliferation, carcinogenesis, and implications for risk assessment. Annual Conference on Aquatic Toxicology, ASTM, Atlanta, Georgia. April 18, 1989.

23. Calabrese, E.J. (1989). Single exposures to chemical carcinogens can cause cancer. Agency for Toxic Substances and Disease Registry, Atlanta, Georgia. April, 1989.

24. Calabrese, E.J. (1989). Assessing cancer risk when a single exposure to a carcinogen causes cancer. Amer-Indus. Health Council, Washington, DC. April, 1989.

25. Calabrese, E.J. (1989). Predicting toxicological responses from multiple chemical exposures. University of Illinois, Champaigne/Urbana, Illinois. April 5, 1989.

26. Calabrese, E.J. (1989). Less than lifetime exposure to carcinogens and risk assessment methodologies. Dartmouth Medical School, Hanover, NH.

27. Calabrese, E.J. (1989). Public health concerns of medical waste disposal. Sponsored by the Rockefeller Institute of Government. New York, NY. March 9, 1989.

28. Calabrese, E.J. (1989). Genetic susceptibility to occupationally-induced disease. Regional chapter of the American Industrial Hygiene Association (Conn. and NY). Stanford, CT. February 14, 1989.

29. Kostecki, E.J., and Calabrese, E.J. (1989). Leaking underground storage tanks and public health concerns. Annual New England Water Pollution Control Assoc., Boston, MA. (Jan. 23, 1989).

30. Calabrese, E.J. (1989). The role of genetic screening in the prevention of occupationally-induced disease. Johns Hopkins University, Baltimore, Maryland. January 9, 1989.

1988

1. Bell, C.E., Calabrese, E.J., Kostecki, P.T. (1988). State of research and regulatory approach of state agencies for cleanup of petroleum contaminated soils. Presented at the First Annual Real Estate Site Assessment Conference, Resource Education Institute. Sturbridge, Massachusetts. December 1988.

2. Kenyon, E., and Calabrese, E.J. (1988). Inter-species differences in gastrointestinal B-glucuronidase activity. New England Mutagen Society, Kingston, Rhode Island. October 1988.

3. Kostecki, P., and Calabrese, E.J. (1988). Peroxisome proliferation in fish. New England Mutagen Society. Kingston, Rhode Island. October 1988.

4. Yang, J., Calabrese, E.J., and Kostecki, P. (1988). Peroxisome proliferation in the rainbow trout. New England Chapter of the Society of Toxicology. Boston, Massachusetts. October 1988.

5. Bell, C.E., Kostecki, P. and Calabrese, E.J. (1988). National survey of state approaches for regulating petroleum contaminated soil. Third Conference on Environmental and Public Health Effects of Soils Contaminated with Petroleum. Amherst, MA. September 19-21, 1988.

6. Calabrese, E.J. (1988). Determining the health hazard associated with complex mixtures such a petroleum products. Third Conference on Environmental and Public Health Effects of Soils Contaminated with Petroleum. Amherst, MA. September 19-21, 1988.

7. Calabrese, E.J. et al. (1988). Soil ingestion in children. Third Conference on Environmental and Public Health Effects of Soils Contaminated with Petroleum. Amherst, MA. September 19-21, 1988.

8. Kostecki, P. and Calabrese, E.J. (1988). Council for the Health and Environmental Safety of Soils (CHESS). Third Conference on Environmental and Public Health Effects of Soils Contaminated with Petroleum. Amherst, MA. September 19-21, 1988.

9. Calabrese, E.J. (1988). Soil ingestion and implications for risk assessment. Annual Risk Assessment Conference sponsored by the Center for Energy and Environmental Management. Alexandria, Virginia.

10. Calabrese, E.J. (1988). Peroxisome proliferation in fish. U.S. Army Biomedical Corp. Annual Meeting. Fort Detrick, MD. August 23, 1988.

11. Calabrese, E.J. (1988). Air toxic - a new methodology. Chemical Manufacturers Association sponsored conference on Community Exposures. Boston, MA. August 17, 1988.

12. Calabrese, E.J. (1988). The problem of soil ingestion by children. Annual EPA Risk Assessment Conference. Philadelphia, PA. June 27, 1988.

13. Calabrese, E.J. (1988). Exposure quantification: soil ingestion. Future Technologies Conference. Clark Univ./WPI. Worcester, MA. June 15, 1988.

14. Calabrese, E.J. (1988). Recent epidemiological evidence of soil ingestion by children. Univ. Michigan, Ann Arbor, MI. June 13, 1988.

15. Calabrese, E.J. (1988). Soil ingestion by children. American Industrial Health Assoc. Washington, DC. June 9, 1988.

16. Calabrese, E.J. (1988). Principles of animal extrapolation and their application. Amer. Chem. Society. Short Course on Toxicology. Clearwater, Florida. June 3, 1988.

17. Calabrese, E.J. (1988). Estimating Soil Ingestion in Children. Agency for Toxic Substances and Disease Prevention. Atlanta, Georgia. June 2, 1988.

18. Coler, R., Kostecki, P. and Calabrese, E.J. (1988). Assessment of the effect of chlorination practices on selected aquatic communities. Northeast Regional Environ. Conference. Amherst, MA. May 28, 1988.

19. Kostecki, P., Calabrese, E.J. and Coler, R. (1988). The aquatic toxicology program of the Massachusetts Fisheries and Wildlife Department. Regional Environ. Conference. Amherst, MA. May 28, 1988.

20. Calabrese, E.J. (1988). Municipal solid waste disposal - Introductory Remarks. Conference sponsored by the Northeast Regional Environmental Public Health Center. April 19, 1988. Amherst, MA.

21. Calabrese, E.J. (1988). Estimating soil ingestion in children. EPA Special Colliquium. Washington, DC. March 23, 1988.

22. Calabrese, E.J. (1988). Sodium: A Changing Public Health Perspective? Annual Meeting of the American R. Water Association. Reno, NV. March 19, 1988.

23. Kostecki, P.K. and Calabrese, E.J. (1988). Developing a consistent approach for assessing public health risks from contaminated soil. American Conference of Governmental Industrial Hygienist sponsored conference, at Arlington, VA. March 1, 1988.

24. Gilbert, C.E. and Calabrese, E.J. (1988). Regional approaches for risk management. National Conference of the Mosquito Control Association. Denver, CO. February 23, 1988.

25. Calabrese, E.J. (1988). Soil ingestion in children: Methodological approaches. Mobil Oil Company. Princeton, NJ. January 7, 1988.

1987

1. Calabrese, E.J. (1987). Recent advances in animal extrapolation. Presented at the Agency for Toxic Substances and Disease Registry. Atlanta, GA. December 4, 1987.

2. Calabrese, E.J. (1987). Estimates of soil ingestion in children: A proposed methodology. U.S. Public Health Service Conference. Hyannis, MA. December 1, 1987.

3. Calabrese, E.J. et al. (1987). Reproductive health outcome study at a DEC facility. National Conference on Semi-Conductor Health. Cincinnati, OH. Oct. 21, 1987.

4. Calabrese, E.J. (1987). A model air toxins program. Rohm & Haas, Inc. Phil. Oct. 15, 1987.

5. Calabrese, E.J. (1987). Introductory and chairman remarks on session on inhalation toxicology at conference on Animal Extrapolation. Duke University, N.C. Oct. 9, 1987.

6. Calabrese, E.J. (1987). Report on the health assessment of drinking treatment technologies. Environmental Scientific Advisory Board (SAB), Washington, D.C. Oct. 8, 1987.

7. Calabrese, E.J. (1987). Reproductive hazards in the semi-conductor industry. National Safety Council Annual Meeting, Chicago. (Oct. 5, 1987).

8. Kostecki, P., Horton, H.M. and Calabrese, E.J. (1987). Comparison of models to protect health effects from soil contamination. Second Conference on Environmental and Public Health Effects of Petroleum Contaminated Soils. Amherst, MA. September 30, 1987.

9. Calabrese, E.J. (1987). Epidemiologic study to estimate soil ingestion in children. Second Conference on Environmental and Public Health Effects of Petroleum Contaminated Soils. Amherst, MA. September 29, 1987.

10. Calabrese, E.J. (1987). Predictive Toxicology. American Chemical Society Meeting. Cincinnati. June 18.

11. Calabrese, E.J. (1987). The toxicologist and risk communication. Conference on Environmental Risk Communication. Amherst, Massachusetts. June 9.

12. Yang, J. and Calabrese, E.J. (1987). Studies on the in vitro capacity of ethanol to enhance sodium nitrite and l-naphthol-induced oxidant stress in human and sheep erythrocytes. Biomedical Science Conference, Bowdoin College, Maine. June 4.

13. Tilli, F. and Calabrese, E.J. (1987). The effect of ethanol on the response of normal human erythrocytes to 12 oxidant stressors. Biomedical Science Conference. Bowdoin College, Maine. June 4.

14. Kenyon, E.M., Young, J., and Calabrese, E.J. (1987). Inhibition of B-glucuronidase in human urine by ascorbic acid. Biomedical Science Conference. Bowdoin College, Maine. June 3.

15. Kenyon, E.M. and Calabrese, E.J. (1987). B-glucuronidation activity in the small intestine of mice, rats and rabbits. Biomedical Science Conference. Bowdoin College, Maine. June 3.

16. Calabrese, E.J. (1987). Public health concerns and high technology. Conference on Technology and Public Health, Worcester, Massachusetts. May 28.

17. Calabrese, E.J. (1987). Conference Summary on Ozone Toxicology. Ozone Risk Communication Conference. Amherst, Massachusetts. April 22.

18. Fleischer, E. and Calabrese, E.J. (1987). Soil Venting and Public Health Risks. Soil Remediation/Technology Conference. Sturbridge, Massachusetts. April 6.

19. Kostecki, P.T. and Calabrese, E.J. (1987). Petroleum Contamination of Soils - State of the art for environmental and public health assessment. Soil Remediation/Technology Conference. Sturbridge, Massachusetts. April 6.

20. Calabrese, E.J. (1987). Toxicology and Drinking Water Regulations. N.E. AWWA Meeting. Windsor Locks, Connecticut. March 19.

21. Calabrese, E.J. (1987). Principles of Animal Extrapolation U.S.D.A. Toxicology and Risk Assessment Conference. Atlanta Georgia. February 11.

22. Calabrese, E.J. (1987). Asbestos in Play Sand? Introductory remarks to conference. Conference on Asbestos in Play Sand. Northeast Regional Environmental Public Health Center, University of Massachusetts, Amherst. February 10.

23. Calabrese, E.J., Pastides, H. and Hosmer, D. (1987). Health surveillance assessment in the semi conductor industry. Windsor Locks, Connecticut. January 23.

24. Calabrese, E.J. (1987). Health concerns from groundwater contaminants. Third National Drinking Water Conference. Philadelphia, Pennsylvania. January 13, 1987.

1986

1. Calabrese, E.J. (1986). Predictive Toxicology. U.S. Army, Fort Detrick, Maryland. December 14, 1986.

2. Calabrese, E.J. (1986). Advances in animal extrapolation. Regional Meeting of the Halogenated Solvents Industry Alliance Atlanta, Georgia. December 10, 1986.

3. Kostecki, P. and Calabrese, E.J. (1986). A review of formal and informal soil standards within the U.S. Amer. Soc. of Agronomy. 78th Annual Meeting, New Orleans, Louisiana. December 4, 1986.

4. Calabrese, E.J. (1986). Regional approaches for addressing environmental health concerns. U.S. Public Health Service Region 1, Annual Conference. Hyannis, Massachusetts. December 3, 1986.

5. Calabrese, E.J. (1986). Chemical interactions in environmental health. American College of Toxicology Annual Meeting. November 17, 1986. Philadelphia, Pennsylvania.

6. Calabrese, E.J. (1986). Chairman - Session on Drug/Chemical Interactions. American College of Toxicology Annual Meeting. November, 17, 1986.

7. Calabrese, E.J. (1986). Predictive toxicology; principles and applications. Amer. Chem. Soc. Ann. Meeting. November 14, 1986, Florida.

8. Kostecki, P.T., Calabrese, E.J. and Garnick, E. (1986). A national census of how petroleum contamination is being assessed. Soc. Environ. Chem. and Tox. November 5, 1986. Washington, D.C.

9. Calabrese, E.J. (1986). Principles of animal extrapolation and their application for pesticide risk assessment. Soc. Environ. Chem. and Tox. November 5, 1986, Washington, DC.

10. Kostecki, P.T. and Calabrese, E.J. (1986). The importance of environmental factors on the reproductive success of smelt (Osmerus mordax). Soc. Environ. Chem. Tox. November 4, 1986, Washington, D.C.

11. Calabrese, E.J. (1986). The effect of vitamin C supplementation of the body burden of heavy metals. Third International Conference on Vitamin C. October 6, 1986. New York.

12. Calabrese, E.J. (1986). Inhibitor of urinary B-glucuronidase activity in human subjects by vitamin C supplementation. Third International Conference on Vitamin C. October 6, 1986. New York.

13. Calabrese, E.J. (1986). The toxicological basis for establishing National Primary Drinking Water Standards. Conference on the Safe Drinking Water Act. September, 23, 1986. Amherst, Massachusetts.

14. Calabrese, E.J. (1986). Regional approaches for environmental public health policy. Annual meeting of the New England Interstate Water Commission, Kennebunkport, Maine. September 9, 1986.

15. Calabrese, E.J. (1986). Assessing the effects of toxic substances. The Samuel Johnson Memorial Lecture. Connecticut Agricultural Research Station. August 6, 1986. New Haven, Connecticut.

16. Calabrese, E.J. (1986). Inhibition of B-glucuronidase activity and susceptibility to cancer. Proctor and Gamble. June 30, 1986. Cincinnati, Ohio.

17. Calabrese, E.J. (1986). Role of academia in reducing exposure to toxic substances. National Environmental Health Association. June 16, 1986. Hartford, Connecticut.

18. Calabrese, E.J. (1986). Regional approaches for assessing environmental contamination. New England Laboratory Directors Quarterly Meeting. June 3, 1986. Oqunquit, Maine.

19. Calabrese, E.J., and McCarthy, M.E. (1986). The occurrence of trace-metal induced hormesis. 20th Annual Conference on Trace Substances in Environmental Health June 2-5, 1986. University of Missouri, Columbia.

20. Calabrese, E.J., and Kostecki, P. (1986). Approaches for assessing the public health significance of soil contaminated with toxic agent. 20th Annual Conference on Trace Substances in Environmental Health. June 2-5, 1986. University of Missouri, Columbia.

21. Calabrese, E.J. and McCarthy, M.E. (1986). The occurrence of trace-metal induced hormesis. Presented at the Maine Biological and Medical Sciences Symposium. May 29, 1986, Portland, Maine.

22. Byrne, K., Kostecki, P.T., and Calabrese, E.J. (1986). The importance of environmental factors on reproductive success of smelt. Presented at the Maine Biological and Medical Sciences Symposium. May 29, 1986, Portland, Maine.

23. Kostecki, P., Calabrese, E.J., and Garnick, E. (1986). A national survey of regulatory approaches for addressing soil contaminated with petroleum products. Presented at the Maine Biological and Medical Science Symposium. May 28, 1986. Portland, Maine.

24. Calabrese, E.J. (1986). Animal extrapolation and the problem of human interindividual variation. Presented to the New England Mutagenesis Society. May 16, 1986. Amherst, Massachusetts.

25. Calabrese, E.J. (1986). Age and susceptibility to pollutant induced toxicity. National Academy of Science. May 15, 1986. Washington, D.C.

26. Calabrese, E.J. (1986). Predicting human health risks from exposure to contaminated soil. Presented at the EPA-sponsored Conference. May 8, 1986, Andover, Massachusetts.

27. Calabrese, E.J. (1986). Animal extrapolation and its regulatory implications. Presented to the Air Pollution Control Association. April 22, 1986, Providence, Rhode Island.

28. Calabrese, E.J. (1986). Principles of inter-, intra-species extrapolation. Presented to the Society of Risk Analysis. April 9, 1986, Washington, D.C.

29. Calabrese, E.J. (1986). The effects of toxic substances on males and females. Annual Digital Equipment Corporation Conference. April, 1986. Merrimack, New Hampshire.

30. Calabrese, E.J. (1986). Risk assessment methodologies: Strengths and limitations. Annual Digital Equipment Corporation Conference. April, 1986. Merrimack, New Hampshire.

31. Canada, A.T., Chow, C.K., and Calabrese, E.J. (1986). Effect of O3 on serum concentrations of vitamins A, C and E in mature female rabbits. Presented to the Annual Meeting of the Society of Toxicology. March 1986, New Orleans, Louisiana.

32. Calabrese, E.J. (1986). How relevant is the rat? presented to the American Industrial Hygiene Association. Meridan, Connecticut.

33. Calabrese, E.J. (1986). Interspecies differences in xenobiotic metabolism. Presented to the American Pharmaceutical Association. March 18, 1986, San Francisco, California.

34. Calabrese, E.J. (1986). New approaches for animal extrapolation. Presented to the Electric Power Research Institute. March 17, 1986, Palo Alto, California.

35. Calabrese, E.J. (1986). Regional strategies for assessing risk from environmental toxins. Presented to the State of Connecticut's Department of Environmental Analysis. January 11, 1986, New Haven, Connecticut.

36. Calabrese, E.J. (1986). Animal extrapolation and the challenge of human heterogeneity. Presented to an FDA-sponsored conference. January 6, 1986, Bethesda, Maryland.

1985

1. Calabrese, E.J. (1985). Regional approaches for addressing environmental problems. Presented to the CDC Annual Region 1 Conference. December 1985, Hyannis, Massachusetts.

2. Kostecki, P.T. and Calabrese, E.J. (1985). Environmental and public health effects of petroleum contaminated soils. Presented at the Annual Meeting of the American College of Toxicology. November 1985, Amherst, Massachusetts.

3. Kostecki, P.T. and Calabrese, E.J. (1985). Problems associated with petroleum contaminated soils. Presented at the Annual Meeting of the Society of Environmental Toxicology and Chemistry. November 1985, St. Louis, Missouri.

4. Kostecki, P.T. and Calabrese, E.J. (1985). Environmental and public health effects of petroleum contaminated soils: Towards a better understanding. Presented at the Annual Meeting of the American Public Health Association. November 1985, Washington, D.C.

5. Calabrese, E.J. (1985). New approaches to risk assessment and risk communication. Presented at Dow Chemical Company. November 1985, Midland, Michigan.

6. Calabrese, E.J. (1985). Issues in animal extrapolation: How relevant is the rat? Presented to the Regional Council. November 1985, Philadelphia, Pennsylvania.

7. Calabrese, E.J. (1985). Uncertainty factors and interindividual variation. Presented to the Society of Environmental Toxicology and Chemistry. October 5, 1985, Alexandria, Virginia.

8. Calabrese, E.J., Kostecki, P.T., and Leonard, D.A. (1985). Public health implications of soils contaminated with petroleum products. Presented at the Conference on Environmental and Public Health Effects of Petroleum Contaminated Soils. October 1985, Amherst, Massachusetts.

9. Kostecki, P.T. and Calabrese, E.J. (1985). Regulatory policies for petroleum contaminated soils -- how states have traditionally dealt with the problem. Presented at the Conference on Environmental and Public Health Effects of Petroleum Contaminated Soils. October 1985, Amherst, Massachusetts.

10. Calabrese, E.J., McCarthy, M., and Kenyon, E. (1985). The occurrence of chemical hormesis. Presented at a national conference on Radiation Hormesis. August 14, 1985, Oakland, California.

11. Kostecki, P.T. and Calabrese, E.J. (1985). Emerging environmental problems -- contaminating soils. Presented to the Edison Electric Institute's Utilities Solid Waste Action Group. August 1985, Boston, Massachusetts.

12. Canada, A.T., Calabrese, E.J. and Leonard, D.A. (1985). Age-related differences in pentobarbital sleeping time following oxidant stress. Presented at the First International Congress of Biomedical Gerontology, American Aging Association. July 10-11, 1985.

13. Calabrese, E.J. (1985). New approaches for animal extrapolation. Presented at Proctor and Gamble. June 12, 1985, Cincinnati, Ohio.

14. Gilbert, C. and Calabrese, E.J. (1985). The health effects of insecticides with particular emphasis on animal extrapolation. Presented at Northeast Regional Meeting of Commissioners of Agriculture. June 12, 1985, Portland, Maine.

15. Calabrese, E.J. (1985). Health effects and risk assessment. Presented at the Northeastern States Agent Training on Groundwater Protection. June 10, 1985, Chicopee, Massachusetts.

16. Gilbert, C.E. and Calabrese, E.J. (1985). Animal extrapolation: Principles and problems. Presented at the AAAS Annual Conference. May 30, 1985, Los Angeles, California.

17. Calabrese, E.J. and Gilbert C.E. (1985). The effect of pollutants in drinking water on human health. Presented at the University of Connecticut May 15, 1985, Storrs, Connecticut.

18. Calabrese, E.J. (1985). Approaches to risk assessment in environmental health. Presented at the State of Connecticut Science Advisory Board. May 13, 1985, Wallingford, Connecticut.

19. Calabrese, E.J. (1985). The removal of chloroform from the water to air during the showering process. Presented at the Specialty Conference on Drinking Water and Indoor Air Contamination. April 25, 1985, University of Pittsburgh, Pittsburgh, Pennsylvania.

20. Calabrese, E.J. (1985). The application of risk assessment analysis to water pollution and groundwater contamination problems. Presented at the 8th Annual Technical Program of the Water Pollution Control Association of Pennsylvania. March 25, 1985, Philadelphia, Pennsylvania.

21. Gilbert, C.E. and Calabrese, E.J. (1985). Impacts of toxic pollutants on human receptors. Presented at the 8th Annual Technical Program of the Water Pollution Control Association of Pennsylvania. March 24, 1985, Philadelphia, Pennsylvania.

22. Calabrese, E.J. (1985). The effects of ozone on human high risk groups. Presented at the Conference on Ozone Toxicity. March 7, 1985, Department of Environmental Protection, State of Maine.

23. Canada, A.T. and Calabrese, E.J. (1985). Ozone-induced inhibition of theophylline metabolism: Effect of age and sex. Presented at the Society of Toxicology Annual Meeting. March 1985, San Diego, California.

24. Stoddard, A.M. and Calabrese, E.J. (1985). The use of hair lead level as a predictor for blood lead level. Presented to the Biostatistical Society. March 1985, Raleigh, North Carolina.

25. Calabrese, E.J. (1985). Principles of animal extrapolation. Lecture in a Toxicology Course for the USDA. February 12, 1985, Albuquerque, New Mexico.

1984

1. Calabrese, E.J. (1984). Vitamin E and air pollution. Presented at Hoffmann-LaRoche. December 1984, Nutley, New Jersey.

2. Calabrese, E.J. (1984). Inorganic constituents in drinking water and CVD. Presented at the 5th Annual Meeting of the American College of Toxicology. November 29, 1984, Washington, D.C.

3. Calabrese, E.J. (1984). Approaches to animal extrapolation with particular emphasis on differential susceptibility and sex differences. Presented to the National Academy of Sciences Board on Toxicology. November 28, 1984, Washington, D.C.

4. Calabrese, E.J. (1984). Allometry -- a useful technique in interspecies extrapolation of animal data. Presented at the 5th Annual Meeting of the American College of Toxicology. November 27, 1984, Washington, D.C.

5. Sorensen, A.A. and Calabrese, E.J. (1984). The use of schools of public health in solving state health problems: A case study of EDB standards in New England. Presented at the Annual Meeting of the American Public Health Association. November 13, 1984, Anaheim, California.

6. Calabrese, E.J. (1984). The effects of nutritional supplementation on pollutant toxicity. Presented at Hoffmann-LaRoche. October 17, 1984, New Jersey.

7. Calabrese, E.J. (1984). Pharmacology and Toxicology: Approaches to Animal Extrapolation. Presented at the University of Connecticut Seminar Series. September 28, 1984.

8. Gilbert, C. and Calabrese, E.J. (1984). Predictive toxicology. Lecture in American Chemical Society's Course. August 30, 1984, Philadelphia, Pennsylvania.

9. Calabrese, E.J. (1984). Environmental and occupational toxicology -- General principles. Presented at the Conference Understanding Toxicology and Chemical Risk Assessment. July 26, 1984, Portland, Maine.

10. Calabrese, E.J. (1984). Establishing of human risk using animal studies. Presented at the Conference Understanding Toxicology and Chemical Risk Assessment. July 26, 1984, Portland, Maine.

11. Calabrese, E.J. (1984). The influence of genetic status on susceptibility to environmental pollutants -- An overview. Published in abstract booklet of the Conference on Medical Screening and Biological Monitoring for the Effects of Exposure in the Workplace. July 11, 1984, Cincinnati, Ohio.

12. DiNardi, S.R. and Calabrese, E.J. (1984). Monitoring for chloroform in a highly humid atmosphere. Presented at the Annual Industrial Hygiene Association Conference. May 19, 1984, Detroit, Michigan.

13. Calabrese, E.J. (1984). Are rats relevant? Address to the Plenary Session of the Annual Industrial Hygiene Association Conference. May 16, 1984, Detroit, Michigan.

14. Calabrese, E.J. and Tuthill, R.W. (1984). The effects of elevated levels of sodium in drinking water on blood pressure in children - Part 1. Presented at the International Conference on Inorganics on Drinking Water and Cardiovascular Disease. May 1-3, 1984, Amherst, Massachusetts.

15. Tuthill, R.W. and Calabrese, E.J. (1984). The effects of elevated levels of sodium in drinking water on blood pressure in children - Part 2. Presented at the International Conference on inorganics in Drinking Water and Cardiovascular Disease. May 1-3, 1984, Amherst, Massachusetts.

16. Calabrese, E.J. (1984). Making quantitative risk assessments for carcinogens more biologically relevant. Presented at Exxon, Inc. April 1984, New Jersey.

17. Calabrese, E.J. (1984). The environmental gender gap: Sex-related differences in response to pollutants. March 1984, University of North Carolina, Chapel Hill, North Carolina.

18. DiNardi, S.R. and Calabrese, E.J. (1984). The stripping of chloroform from shower water into air during the showering process. Presented at the International Conference on Health and Environment. February 1984, Dallas, Texas.

1983

1. Calabrese, E.J. 1983. Gastrointestinal and dermal absorption: Interspecies differences. Presented at the EPA Conference on Safer Chemicals Through Molecular Design. September, Washington, D.C.

2. Burden, H.H., Calabrese, E.J., and Stoddard, M.A. 1983. Lead in drinking water: Contribution for solder joints in residential plumbing systems. Presented at the American Public Health Association. October, Dallas, Texas.

3. Calabrese, E.J. 1983. Suitability of animal models for predictive toxicology: Theoretical and practical considerations. Presented at the EPA Conference on Safer Chemicals Through Molecular Design. September, Washington, D.C.

4. Calabrese, E.J. 1983. Genetic monitoring in the workplace. Presented at the 5th Annual New England Occupational Health Conference. Boston, Massachusetts.

5. Calabrese, E.J. 1983. Toxicokinetics and risk assessment. Presented at the Electric Power Research Institute Conference on Toxicokinetics.

1982

1. Calabrese, E.J., Moore, G.S., and McCarthy, M. 1982. The effect of ascorbic acid on copper acetate and sodium nitrite induced red cell oxidative stress. Presented at the Annual Conference of Clinical Ecologists. October 1982, Baniff, Canada.

2. Calabrese, E.J., Moore, G.S., and Williams, P. 1982. The effect of proposed ozone intermediates (in vitro) on normal and G-6-PD deficient erythrocytes in humans and in sheep. Presented at the 1982 Annual Meeting of the Society of Toxicology. Boston, Massachusetts.

3. Calabrese, E.J., Moore, G.S., and McCarthy, M. 1982. The effect of ascorbic acid on copper and nitrite-induced oxidative changes in erythrocytes: Interspecies differences. Presented at the 1982 Annual Meeting of the Society of Toxicology. Boston, Massachusetts.

4. Moore, G.S. and Calabrese, E.J. 1982. The effects of low-level ozone exposure upon the course of P. berghei infection in female A/J strain mice. Presented at the 1982 Annual Meeting of the Society of Toxicology. Boston, Massachusetts.

5. Calabrese, E.J. and Tuthill, R.W. 1982. The effect of an experimental reduction of sodium in drinking water on blood pressure distribution patterns of elementary students. Presented at the Annual Meeting of the Society of Toxicology. Boston, Massachusetts.

6. Calabrese, E.J., Moore, G.S., and Grunwald, E. 1982. The effect of ozone on rabbit erythrocytes (in vitro). Presented at the International Ozone Symposium. March 15, Pinehurst, North Carolina.

7. Calabrese, E.J. 1982. The biomedical basis for the present EPA primary drinking water standards. Presented at the American Water Works Association. May 16, 1982, Miami, Florida.

8. Calabrese, E.J. 1982. The effect of elevated levels of sodium in drinking water on sensitive populations. Presented at an Invited "Brainstorming" Session of the Environmental Health Center. April 24, 1982, Dallas, Texas.

9. Calabrese, E.J. 1982. The effects of ozone on sensitive population subgroups. Presented at an Invited "Brainstorming" Session of the Environmental Health Center. April 24, 1982, Dallas, Texas.

10. Calabrese, E.J. 1982. The effects of ozone on red blood cells. Presented at an Invited Seminar of the Department of Pharmacology, University of Massachusetts Medical Center. Worcester, Massachusetts.

11. Calabrese, E.J. and Canada, A.T. 1982. The role of high risk groups in the development of novel work schedule TLVs. Presented at the Annual Conference of the American Industrial Hygiene Association. Cincinnati, Ohio.

12. Calabrese, E.J., Moore, G.S., Grunwald, E., and Labato, F. 1982. The effect of ozone on red blood cell survival. Presented at the Annual Conference of Clinical Ecologists. October 1982, Baniff, Canada.

1981

1. Calabrese, E.J. and Tuthill, R.W. 1981. The influence of elevated levels of sodium on blood pressure to young children and adolescents. Presented at the Salt and Hypertension Conference. Monell Chemical Senses Center. Philadelphia, Pennsylvania.

2. Calabrese, E.J., Moore, G.S., and Tuthill, R.W. 1981. The effects of chlorine dioxide and chloramines on rodent models. Presented at the EPA-sponsored Conference on Alternatives to Chlorination. Cincinnati, Ohio.

3. Tuthill, R.W., Moore, G.S., Calabrese, E.J., and Guisti, R. 1981. Epidemiological investigations on the effects of chlorine dioxide on birth outcomes. Presented at the EPA-sponsored Conference on Alternatives to Chlorination, Cincinnati, Ohio.

4. Calabrese, E.J. 1981. The role of epidemiological studies on the derivation of drinking water standards for metals. Presented at the Second Annual Conference on Environmental Epidemiology. University of Pittsburgh.

5. Calabrese, E.J. 1981. An expanded operational concept of high risk groups and its role in standard setting. Presented at the West Coast Chapter of AAAS Annual Meeting. June 15, 1981, Eugene, Oregon.

6. Calabrese, E.J. 1981. The influence of nutritional status on pollutant toxicology and carcinogenicity. Presented at the Invited Seminar of Hoffmann-LaRoche, Inc. November 2, Nutley, New Jersey.

7. Brown, H., Rowan, C., and Calabrese, E.J. 1981. The health effects of trichloroeythlene. Presented at the Water Quality Conference, National Academy of Engineers. Washington, D.C.

8. Calabrese, E.J. and Tuthill, R.W. 1981. Human health issues regarding elevated levels of sodium in drinking water. Presented at the Specialty Conference on Road Salt and Water Supply. Sponsored by the Massachusetts Department of Environmental Quality Engineering and the Audubon Society. Holyoke, Massachusetts.

1980

1. Calabrese, E.J., Tuthill, R.W., Sieger, T., and Klar, J. 1980. Community drinking water - A contribution to increased blood pressure. Presented at the AAAS Annual Conference. San Francisco, California.

2. Calabrese, E.J. and Tuthill, R.W. 1980. Effects of sodium in drinking water on blood pressure. Presented at the National Academy of Sciences Summer Residence in Falmouth, Massachusetts to the NATO Countries' Safe Drinking Water Committee.

3. Calabrese, E.J. and Tuthill, R.W., Sieger, T., and Klar, J. 1980. Comparison of drinking water constituents in geographically adjacent communities with markedly different blood pressure levels. Presented at the AAAS Annual Conference. San Francisco, California.

4. Calabrese, E.J. 1980. Special sensitivities of the young to pollutant toxicity. Presented at the 10th World Assembly of the World Organization for Preschool Education. July 29, Quebec, Canada.

5. Calabrese, E.J. 1980. Diesel exhaust and human health effects. Presented at the International Association of Machinists Symposium for Railroad Workers. July 30, Toronto, Canada.

6. Moore, G.S. and Calabrese, E.J. 1980. Epidemiologic and laboratory animal studies on chlorite toxicity. Presented at the Second International Congress on Toxicology. July 1980, Brussels.

7. Calabrese, E.J. and Moore, G.S. 1980. Erythrocyte G-6-PD deficiency and enhanced susceptibility to environmental oxidant stressors: An animal model. Presented at the Second International Congress on Toxicology. July 1980, Brussels.

8. Moore, G.S. and Calabrese, E.J. 1980. The effect of in vivo ozone exposure to Dorset sheep, an animal model with low levels of erythrocyte G-6-PD activity. Presented at the Second International Congress on Toxicology. July 1980, Brussels.

9. Rowan, C. and Calabrese, E.J. 1980. The effects of elevated levels of sodium in drinking water on the retention of sodium by products cooked in such water. Presented at Trace substances in the Environment. June 1980, Columbia, Missouri.

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XIV. BOOKS

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21. Calabrese, E.J. (1985). *Toxic Susceptibilities: Male and Female Differences*. John Wiley and Sons, Inc., New York. 350 pp.

22. Calabrese, E.J. and Dorsey, M. (1984). *Healthy Living in an Unhealthy World*. Simon and Schuster, New York. (Paperback, 1985). (Translated into Spanish in 1987.)

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28. Calabrese, E.J. (1978). *Pollutants and High Risk Groups*. John Wiley and Sons, Inc., New York. 200 pp.

XV. CONFERENCE PROCEEDINGS - EDITORSHIP

1. Calabrese, E.J. (Editor-in-Chief). (2003). An International Journal - Non-Linearity in Biology, Toxicology and Medicine. Taylor & Francis. 1(1):1-137.

2. Kostecki, P.T., Calabrese, E.J., and Dragun, J. (2003). Contaminated Soils, Sediments and Water, Vol. VIII. Amherst Scientific Publishers. Amherst, MA. 471 pp.

3. Kostecki, P.T., Calabrese, E.J., and Dragun, J. (2002). Contaminated Soils, Vol. VII. Amherst Scientific Publishers. Amherst, MA. 545 pp.

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8. Kostecki, P.T., Calabrese, E.J., and Bonazountas. (1998). Contaminated Soils, Vol III. Amherst Scientific Publishers. Amherst, MA. 654 pp.

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10. Calabrese, E.J., and Kostecki, P.T., and Bonazountas, M. (1997). Contaminated Soils, Vol. 2. Amherst Scientific Publishers. Amherst, MA pp. 760.

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12. Calabrese, E.J., and Kostecki, P.T., and Bonazountas, M. (1996). Contaminated Soils, Vol. I. Amherst Scientific Publishers. Amherst, MA pp. 734.

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20. Calabrese, E.J., and Kostecki, P.T. (1993). Hydrocarbon contaminated soils, Vol. III. Lewis Publishers, Chelsea, MI.

21. Kostecki, P.T., Calabrese, E.J., and Barkan, C. (1993). Principles and Practices for Diesel Contaminated Soils, Vol. 2. Amherst Scientific Publishers, Amherst, MA. pp. 137.

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24. Kostecki, P., and Calabrese, E.J. (1992). Contaminated Soils: Diesel Fuel Contamination, Volume 1. Lewis Publishers, Chelsea, MI. pp. 224.

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28. Calabrese, E.J. (co-editor). Ozone Risk Communication. Lewis Publishers. 1990.

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31. Calabrese, E.J. and Kostecki, P.T. (editors). 1987. Environmental Public Risks of Petroleum Contaminated Soil. John Wiley and Sons, Inc. 1000 pp.

32. Calabrese, E.J., Cotruvo, J., Pastides, H. and Gilbert, C. (editors). 1987. Safe Drinking Water Act: Amendments, Regulations. Lewis Publishers, Ann Arbor, Michigan. pp. 300.

33. An EPA-sponsored international conference on Inorganics in Drinking Water and Cardiovascular Disease. Published within Advances in Modern Environmental Toxicology, 1985.

34. Advances in Nutrition. Volume 2. 1985. Pathotox Publishers.

35. An EPA-sponsored international conference on The Influence of Drinking Water on the Occurrence of Cardiovascular Disease. Published within the Journal of Environmental Pathology and Toxicology. 4:1-326, 1981.

36. An EPA-sponsored international conference on The Effects of Pollutants on Human High Risk Groups. Published within Environmental Health Perspectives. 29:1-77, 1979.

XVI. NEWSPAPER COLUMNIST

I wrote a bimonthly column for the *Amherst Record* on general topics in environmental health from May 1982-1985. On occasion, I write a guest column for other newspapers including the *Hartford Courant*.

XVII. NEWSLETTER

1. Health Effects Section Writer - for the 4500 members of the American Water Works Association, 1982/1983.

2. Biological Effects of Low Level Exposures (BELLE) Newsletter. A publication of the Northeast Regional Environmental Public Health Center, University of Massachusetts, School of Public Health. 11,000 circulation; 1992 - 2010.

3. Council for Health and Environmental Safety of Soils – CHESS Newsletter. Published by the International Society of Regulatory Toxicology and Pharmacology. 1989-1993.

July, 2017

CURRICULUM VITAE

ALAN PHILIP CARLIN

Address: [redacted]
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Education:

Graduate: Massachusetts Institute of Technology, Ph.D. (economics, with a major in development)

Undergraduate: California Institute of Technology, B.S. with Honor (physics)

Fellowships: Ford Foundation Foreign Area--at MIT, 1.5 years, and in India, 1 year

Positions held: Retired, 2010 to present. Full time research and writing concerning climate change science and economics. Published three articles and one book; Webmaster for Website, Carlin Economics and Science, http://carlineconomics.com. Book provides extensive additional autobiographical information. Received the Climate Change Science Whistleblower Award at the Heartland International Climate Change Conference (ICCC-9) held in July, 2014, in Las Vegas, NV.

Senior Operations Research Analyst, Office of Policy, Economics, and Innovation, U.S. Environmental Protection Agency, Washington, DC, 1983 to 2010 (with many office name changes in between). Carried out research and published papers exclusively on the economics and science of global climate change control, 2004-9. Managed $1.5 to $4 million per year Economic Research Program with most of the leading U.S. academic and non-profit institutions with expertise in environmental economics, 1983-88. Managed numerous research projects on the economic benefits of environmental pollution control, the use of stated preference techniques to determine the economic benefits of pollution control, the use and the economic and legal aspects of using economic incentives for environmental pollution control, the economic benefits and costs of the Superfund program, full social cost pricing of energy, comparative individual risks of death, the economic costs of pollution control in the United States, and the relationships between environmental quality, economic development, and government institutions, 1983-2010. Principal liaison for the Office of Policy with the Office of Research and Development's National Center for Environmental Research, which resulted in a $2.5 million yearly joint competition in cooperation with the National Science Foundation for research on Decision-making and Valuation for Environmental Policy (DMVEP), 1994 to 1999. Principal author of the resulting DMVEP Requests

for Applications, 1995 to 1999. Developed and managed one of the more extensive economics sites on the World Wide Web, featuring over 2,600 EPA economics reports including listings for more than 120 reports prepared under projects in most aspects of environmental economics and science that I have managed from 1971 to 2010 while at EPA, 1995 to 2010. Served as the EPA representative on the interagency group reviewing natural resource damage assessment regulations for U.S. Government, 1993-5, and authored EPA's extensive comments thereon, 1994. EPA coordinator for 250 page EPA report on the use of economic incentives for environmental protection issued January 2001. EPA Bronze Medals in 1991, 1992, and 2006 for reports entitled *Environmental Investments: The Cost of a* Clean *Environment*, *The United States Experience with Economic Incentives to Control Environmental Pollution*, and the EPA Environmental Economics Research Strategy, respectively. Provided CONAMA, the Chilean environmental protection agency, with seminars and consultation on the use of cost-benefit analysis and economic incentives in environmental pollution control at their request, Santiago, Chile, March, 1996.

Senior Operations Research Analyst, Office of Research and Development, U.S. Environmental Protection Agency, Washington, DC--1974-83. Managed EPA research on the economic benefits of pollution control and the use of economic incentives for pollution control (see 1975-83 listings included at this link). Managed EPA extramural program to develop a series of comprehensive, multi-media, multi-disciplinary assessments of the current state of scientific, technical and economic knowledge needed by EPA to regulate particular pollutants or classes of pollutants. Provided headquarters coordination for the in-house preparation, review, and publication of Air Quality Criteria and other pollutant assessments by all USEPA Office of Research and Development laboratories. Served as a US representative at various OECD and UN Environment Programme environmental and economic meetings.

Director, Implementation Research Division, Office of Research and Development, U.S. Environmental Protection Agency, Washington, DC--1971-74. Built and directed staff of about 25 in carrying out a new $3 million per year interdisciplinary research program (for some of the output, see pre-1975 listings for projects funded by the Office of Research and Development) on the implementation and economic policy aspects of environmental protection, including the economic benefits of pollution control, energy-environment trade-offs, economics of regulatory and incentive approaches for implementing environmental pollution control, and the implementation of the National Environmental Policy Act. Served as ORD representative on the EPA Energy Policy Committee and as EPA co-coordinator for the interagency Southwest Energy Study. Served as U.S. representative at various OECD meetings dealing with environmental economics.

Economist, Economics Department, The RAND Corporation, Santa Monica, California--1963 to 1971. Carried out policy-oriented economic research, primarily on economic development, environmental, transportation, and energy problems. Member of advisory groups sent to advise on and evaluate the U.S. Agency for International Development aid programs to India and Turkey, 1965 and 1966.

Consultant to the Administrator of the United Nations Development Programme (Transport Economist), FUNDWI High Level Mission to West Irian--summer 1967. Participated in mission which drew up and evaluated a development plan for Western New Guinea and prepared transportation section of report.

Volunteer positions held: Member, Editorial Council, *Journal of Environmental Economics and Management*, 2 years.

Principal fields: Environmental economics; economics and science of global climate change control; cost-benefit analysis; energy and the environment; energy economics; development economics; transportation economics; project evaluation; research grant administration; World Wide Web site development; database management; and Web publication.

PUBLICATIONS

2015 *Environmentalism Gone Mad: How a Sierra Club Activist and Senior EPA Analyst Discovered a Radical Green Energy Fantasy*, Stairway Press, available for purchase from book Web page.

2013 Modern Environmentalism: A Longer Term Threat to Western Civilization, *Energy and Environment*, Vol. 24, No. 6, 2013, pp. 1063-72.

2012 The Increasing Need for Research on Geoengineering Approaches to Reducing Potential Global Cooling, in Yu. A. Izrael, A. G. Ryaboshapko, and S. A. Gromov, editors, *Investigation of Possibilities of Climate Stabilization Using New Technologies, Proceedings of International Scientific Conference, "Problems of Adaptation to Climate Change" (Moscow, 7–9 November 2011)*, Russian Academy of Sciences, Moscow, 2012, pp. 24-34.

2011 A Multidisciplinary, Science-Based Approach to the Economics of Climate Change, *International Journal of Environmental Research and Public Health*, Vol. 8, No. 4, April 1, 2011, pp. 985-1031.

2007 "Risky Gamble," *Environmental Forum*, Volume 24, No. 5, September/October, pp. 42-

47.

"Global Climate Change Control: Is There a Better Strategy than Reducing Greenhouse Gas Emissions?" *University of Pennsylvania Law Review*, Volume 155, No. 6, June, pp. 1401-97.

Implementation & Utilization of Geoengineering for Global Climate Change Control,"
Sustainable Development Law and Politics,

2005 "The New Challenge to Cost-Benefit Analysis: How Sound Is the Opponents' Empirical Case?" *Regulation*, Vol. 28, No. 3, Fall, pp.18-23

1997 "Measures of Mortality Risks" (with W. Kip Viscusi and John K. Hakes), *Journal of Risk and Uncertainty*, Vol. 14, No. 3, May/June, pp. 213-33. Earlier report to EPA is available here.

"Cost Savings from the Use of Market Incentives for Pollution Control" (with Robert C. Anderson, Albert M. McGartland, and Jennifer B. Weinberger), in Richard F. Kosobud and Jennifer M. Zimmerman (editors), *Market-Based Approaches to Environmental Policy: Regulatory Innovations to the Fore,* Van Nostrand Reinhold, New York, pp. 15-46.

1994 *EPA Comments on Proposed NOAA/DOI Regulations on Natural Resource Damage Assessment*, U.S. Environmental Protection Agency, Washington, D.C., October**.**

"Environmentally Responsible Energy Pricing" (with W. Kip Viscusi, Wesley A. Magat, and Mark Dreyfus), *Energy Journal*, Vol. 15, No. 2, April, pp. 23-42. An earlier version of the report is available here. The full report on which both are based can be found here.

1992 *The United States Experience with Economic Incentives to Control Environmental Pollution*, Report No. 230-R-92-001, U.S. Environmental Protection Agency, Washington, D.C., July.

"Environmental Investments: The Cost of Cleaning Up" (with Paul F. Scodari and Don H. Garner), *Environment*, Vol. 34, No. 2, March, pp. 12-45.

1990 *Environmental Investments: The Cost of a Clean Environment, A Summary* (with the assistance of the Environmental Law Institute), Report No. EPA-230-90-084, U.S. Environmental Protection Agency, Washington, D.C., December.

Environmental Investments: The Cost of a Clean Environment, Report of the Administrator of the Environmental Protection Agency to the Congress of the United States (prepared with assistance from the Environmental Law Institute), Report No. EPA-230-90-083, U.S. Environmental Protection Agency, Washington, D.C., November. Republished as *Environmental Investments: The Cost of a Clean Environment* with previous entry by Island Press, Washington, D.C. and Covelo, CA, 1991.

1984 "Introduction," in Thomas D. Crocker (editor), *Economic Perspectives on Acid Rain Control*, Butterworth, Stoneham, MA.

1974 "Benefits of Pollution Control," in Philip L. White and Diane Roberts (editors), *Environmental Quality and Food Supply*, Futura Publishing Company, Mt. Kisco, New York, March, pp. 39-47.

1973 "The Grand Canyon Controversy; or, How Reclamation Justifies the Unjustifiable," in Alain C. Enthoven and A. Myrick Freeman (editors), *Pollution, Resources, and the Environment*, W. W. Norton, New York, pp. 263-270. Also available as Rand working paper P-3541.

1971 *Environmental Problems: Their Causes, Cures and Evolution Using Southern California Smog as an Example* (with George Kocher), Report R-640-CC/RC, The RAND Corporation, Santa Monica, CA, May.

"Water Resources Development in an Environmentally-Conscious Era," *Water Resources Bulletin*, Vol. 7, No. 4, April, pp. 221-223. Reprinted in Charles J. Meyers and A. Dan Tarlock (editors), *Selected Legal and Economic Aspects of Environmental Protection*, Foundation Press, Mineola, New York, pp. 53-56.

1970 "Marginal Cost Pricing of Airport Runway Capacity" (with R. E. Park), *American Economic Review*, Vol. LX, No. 3, June, pp. 310-319. Reprinted in Peter Forsyth, Kenneth Button, and Peter Nijkamp (editors), *Air Transport: Classics in Transport Analysis*, Edward Elgar Publishing, Northampton, MA, 2002, pp. 491-500. Also available as RAND P-4134.

"A Model of Long Delays at Busy Airports" (with R. E. Park), *Journal of Transport Economics and Policy*, Vol. IV, No. 1, January, pp. 37-52. Also available as RAND P-4126.

1969 *The Efficient Use of Airport Runway Capacity in a Time of Scarcity* (with R. E. Park), Report R-5807-PA, The RAND Corporation, Santa Monica, CA, August.

Alternative Development Strategies for Air Transportation in the New York Region, 1970-1980 (with H. S. Campbell, S. L. Katten, T. F. Kirkwood, D. M. Landi, R. E. Park, L. Rounnau, and A. J. Rolfe), Report RM-5815-PA, The RAND Corporation, August.

"The Implications of Geographic Specificity for Air Pollution Abatement Strategy," Paper P-4237, The RAND Corporation, Santa Monica, CA,

1968 *An Economic Re-Evaluation of the Proposed Los Angeles Rapid Transit System* (with Martin Wohl), Paper P-3918, The RAND Corporation, Santa Monica, CA.

"The Economics of Transport Development," in United Nations Development Programme, Fund of the United Nations for the Development of West Irian, *A Design for Development in West Irian*, United Nations, New York, pp. 162-170.

"The Grand Canyon Controversy: Lessons for Federal Cost-Benefit Practices," *Land Economics*, Volume XLIV, No. 2, May, pp. 219-227. Reprinted in Charles J. Meyers and A. Dan Tarlock (eds.), *Water Resource Management*, Foundation Press, Mineola, New York, 1971, pp. 459-468. Also available as RAND working paper P-3505-1. Earlier version printed in U.S. Congress, Senate, Committee on Interior and Insular Affairs, *Central Arizona Project*, Hearings before Subcommittee, 90th Congress, 1st Session, May 2-5, 1967, pp. 507-514. Also in House Committee on Interior and Insular Affairs, *Colorado River Basin Project*, Hearings before Subcommittee, 90th Congress, 1st Session, March 13-17, 1967, pp. 611-618.

Vehicle Safety: Why the Market Did Not Encourage It and How It Might Be Made To Do So, Report RM-5634-DOT, The RAND Corporation, Santa Monica, CA, April.

1967 "Indian Transportation: A Sectoral Approach to Developmental Constraints," *The Journal of Development Studies*, July, pp. 414-439. Also available as Rand paper P-3284.

"Project versus Program Aid: From the Donor's Viewpoint," *The Economic Journal*, March, pp. 48-58. Reprinted in Stephen Spiegelglas and Charles J. Welsh (ed.), *Economic Development: Challenge and Promise*, Prentice-Hall, Englewood Cliffs, 1970, pp. 350-359. Also in Gustav Ranis (ed.), *The United States and the Developing Economies*, Revised Edition, W. W. Norton, New York, 1973, pp. 158-171. Also available as Rand working paper P-3283.

Korean Force Postures, Regional Security, and Military Assistance (with C. Wolf, Jr., P. E. Langer, and A. Barbour), Report RM-5130-ISA, The RAND Corporation, Santa Monica, CA, March (classified Secret).

"The Grand Canyon Controversy--1967: Further Economic Comparisons of Nuclear Alternatives" (with William E. Hoehn), Senate Hearings, *op. cit*., pp. 489-497 and House Hearings, pp. 619-625. Also available as Rand P-3546.

1966 "Is the Marble Canyon Project Economically Justified?" (with William E. Hoehn), printed in U.S. Congress, House, Committee on Interior and Insular Affairs, *Lower Colorado River Basin Project*, Hearings before Subcommittee, Part II, May 9-18, pp. 1497-1512. Also available as Rand paper P-3302.

"Mr. Udall's 'Analysis': An Unrepentant Rejoinder" (with William E. Hoehn), *ibid*., pp. 1521-1535.

1965 *Aid Bargaining with India: Approaches to More Effective Use of U.S. Bargaining Power* (with William A. Johnson), Report RM-4695-AID, The RAND Corporation, Santa Monica, CA, December (classified Confidential).

An Appraisal of U.S. Capital Assistance to Less Developed Countries (with F. T. Moore, R. L. Slighton, W. A. Johnson, and L. L. Johnson), Report RM-4594-AID, The RAND

Corporation, Santa Monica, CA, October (classified Confidential).

Review of *Aspects of Economic Development and Policy* by B. K. Madon, *American Economic Review*, September, pp. 900-902.

A Possible U.S. Policy towards Indian Transportation: An Illustration of Improved Sectoral Policies, Report RM-4379-AID, The RAND Corporation, Santa Monica, CA, June.

1964 *An Evaluation of U.S. Government Aid to India*, Ph.D. Thesis, MIT.

SELECTED PRESENTATIONS

2006 "Global Climate Control: Is There a Better Strategy than Reducing Greenhouse Gas Emissions?" *University of Pennsylvania Law Review* Symposium on *Responses to Global Warming: The Law, Economics, and Science of Climate Change*, Philadelphia, PA, November 17.

2003 "The United States Experience with Economic Incentives for Protecting the Environment" at Library of Congress, Washington, DC, January 9.

2002 "United States Policy on Controlling Pollution from Large Industrial Point Sources with an Emphasis on the Use of Economic Incentives," at European Commission-sponsored conference on "Prevention and Control of Industrial Pollution: International Conference on Policy Approaches," April 25-6 in Seville, Spain.

CURRICULUM VITAE

Name: Samuel Monroe Cohen, M.D., Ph.D.

Address:

University of Nebraska Medical Center
983135 Nebraska Medical Center
Omaha, Nebraska 68198-3135
(402) 559-6388
(402) 559-8330 (F)
E-mail: scohen@unmc.edu

Personal:

Place of birth: [redacted]
Date of birth: [redacted]
Citizenship: [redacted]
Marital Status: [redacted]

Children: [redacted]

Education:

1963-1967 – B.S. University of Wisconsin, Madison
Major: Medical Science (Honors)

1966-1972 – M.D. University of Wisconsin, Madison

1968-1972 – Ph.D. University of Wisconsin, Madison
Major: Experimental Oncology

Theses:

Cohen, S.M. Studies on N-[4-(5-nitro-2-furyl)-2-thiazolyl] formamide, a potent bladder carcinogen. B.S. Thesis, University of Wisconsin, 1967

Cohen, S.M. Carcinogenicity of 5-nitrofurans: Formic acid 2-[4-(5-nitro-2-furyl-2-thiazolyl]hydrazide and N-[4-5-nitro-2-furyl)-2-thiazolyl]acetamide. Ph.D. Thesis, University of Wisconsin, 1972

Post-Degree Training:

Internship: St. Vincent Hospital, Worcester, Massachusetts, July 1, 1972-June 30, 1973 (Straight Pathology)

Residency: St. Vincent Hospital, Worcester, Massachusetts, July 1, 1973-October 31, 1975

Academic and Staff Appointments:

2010 -	Adjunct Professor, Program on Toxicologic Pathology, Sao Paulo State University Medical School, Botucatu, Brazil
2010 -	Staff pathologist, Nebraska Orthopaedic Hospital, Omaha, Nebraska, and Bellevue Medical Center, Bellevue, Nebraska
1992-2007	Chairman, Department of Pathology and Microbiology, University of Nebraska Medical Center, Omaha, Nebraska
1988, 1992	Acting Chairman (during Chairman's sabbaticals), Department of Pathology and Microbiology, University of Nebraska Medical Center, Omaha, Nebraska
1981-	Professor, Department of Pathology and Microbiology, University of Nebraska Medical Center, Omaha, Nebraska
1981-	Professor, Eppley Institute for Research in Cancer, University of Nebraska Medical Center, Omaha, Nebraska
1981-1992	Vice Chairman (Acting Chairman during Dr. David Purtilo's absences), Department of Pathology and Microbiology, University of Nebraska Medical Center, Omaha, Nebraska
1977-1981	Associate Professor, Department of Pathology, University of Massachusetts Medical School, Worcester, Massachusetts
1977-1981	Staff Pathologist, St. Vincent Hospital, Worcester, Massachusetts
1976-1977	Visiting Professor, First Department of Pathology, Nagoya City University Medical School, Nagoya, Japan (sponsored by the United States-Japan Co-operative Cancer Research Program)
1975-1976	Staff Pathologist, St. Vincent Hospital, Worcester, Massachusetts
1974-1977	Instructor, Department of Pathology, University of Massachusetts Medical School, Worcester, Massachusetts
1974-1976	Physician, Massachusetts Rehabilitation Hospital, Boston, Massachusetts

Certifications and Licenses:

Board Certified in Anatomic and Clinical Pathology, American Board of Pathology, 1976

Massachusetts, by examination, 1973-2013 (inactive)

Maine, by reciprocity, 1975 - 1976

Nebraska, by reciprocity, 1981-(active)

Iowa, by reciprocity, 2015- (active)

Grant Support (Active):

1. NIH (1R41EB021844-01A1) Development of Chol-DsiRNA Polyplexes to Improve the Therapy of Breast Cancer, Co-investigator, $315,947 (total costs). 04/01/16 – 03/31/17.

2. NIH (2P20GM103480) COBRE Nebraska Center for Nanomedicine, 3% effort, Co-Investigator, 9/15/13 - 5/31/18.

3. NIH (1R21ES026411) Arsenical production in germ free and humanized mice, Consultant, 2016-2017.

4. Sumitomo Chemical Company, Principal Investigator, 2013-2017, $50,000 (total costs).

5. Inorganic Arsenic Task Force, Principal Investigator, Investigations on the Mode of Action of Inorganic Arsenic Carcinogenesis and Toxicity, 2013-2017, $150,000 (total costs).

Grant Support (Completed):

1. Kumiai Chemical Co., Effects of Short-term Dietary Administration of Pyroxasulfone On the Urine And Urinary Bladder of Male Rats, Principle Investigator, 2016, $82.422 (total costs).

2. NIH (R21NS084391). Therapeutic Targeting of Aberrant Glial Function During Juvenile Batten Disease. 2% effort, Co-Investigator, 9/01/14 – 12/31/15, $250,000 (annual direct cost).

3. ILSI North America, Principal Investigator, Inorganic Arsenic Investigations, 2014-2015, $28,000 (total costs).

4. Electric Power Research Institute (EPRI), Low-Dose Dose-Response Relationship for Cell Death Induced by Exposure to Inorganic Arsenite, Principal Investigator, 2/01/15-7/31/15, $114,669 (total costs).

5. Laboratoire Paréva, Evaluation of the Proliferative Effects of Chronic Treatment with PHMB in the Liver Tissue of Male Sprague Dawley Rats, Principal Investigator, 1/01/2015 – 7/31/2015, $47,840 (total costs).

6. Laboratoire Paréva, Early Proliferative Effects of PHMB on the Liver Tissue of Male Wistar Han Rats, Principal Investigator, 2/01/2015 – 9/30/2015, $181,057 (total costs).

7. Laboratoire Paréva, Principal Investigator. Assessment of Bioavailability and Distribution of PHMB in the Rat and Its Effects on Oxidative Stress, Cytotoxicity, Mitogenicity, and Histologic Alterations. $163,434 (total costs), 2013-2014.

8. Inorganic Arsenic Task Force, Principal Investigator, Investigations on the Mode of Action of Inorganic Arsenic Carcinogenesis, 2012-2013, $150,000 (total costs).

9. NIH COBRE: Nebraska Center for Nanomedicine, Core B, Collaborator, 9/08-6/13, $36,500/yr. (total costs).

10. H. Lundbeck A/S, Principal Investigator, Cytotoxicity, proliferation and apoptosis in mouse and human endothelial cells, 2012, $107,420 (total costs).

11. Dainippon Sumitomo Pharma, Principal Investigator, Mechanistic Study for Carcinogenicity of DSP-8658 in Male Rats. Follow-up Urinalysis Evaluation in Rats, 7/2012-7/2013, $32,618 (total costs).

12. Pfizer, Principal Investigator, Immunohistochemical Markers of Human Vascular Tumors, 2012, $17,203 (total costs).

13. Minnesota Mining and Manufacturing, Principal Investigator, Effects of Administration of MTDID 25575 by Oral Gavage on the Urinary Bladder of Male Rats, 2012, $96,108 (total costs).

14. NIH R01 CA 143460. NOC in processed meat as a likely cause of colon cancer. Co-investigator (4% effort). (Dr. S. Mirvish, P.I.). 2010-2013, $145,250 (total direct costs for first year).

15. DuPont, Principal Investigator, Time Course of Early Effects of Treatment with Diuron (DPX-14740) Technical in the Diet on the Bladder Epithelium of Male Wistar Rats, 2011-2012, $64,512 (total costs).

16. Inorganic Arsenic Task Force, Principal Investigator, Investigations on the Mode of Action of Inorganic Arsenic Carcinogenesis, 2011-2012, $75,000 (total costs).

17. Sumitomo Chemical Company, Principal Investigator, 2010-2012, $20,000 (total costs).

18. Makhteshim Agan of North America, Principal Investigator, 2012, $10,000 (total costs).

19. Organic Arsenical Products Task Force, Principal Investigator, 2011-2012, $30,000 (total costs).

20. Electric Power Research Institute, Collection of Epithelial Cells from Human Ureters, Principal investigator, 4/08-6/12, $17,236 (total costs).

21. FEMA, Principal Investigator, The Effects of Oral Administration of Pulegone on the Urinary Bladder of Female F344/N Rats, $62,815 (total costs).

22. Teva Pharmaceutical Industries Ltd., The Effects of Materials on Rodent and Human Urothelial and Keratinocyte Cell Lines, Principal Investigator, 7/8/10-2/28/11, ($27,971 total costs).

23. Takeda Pharmaceutical Co., PPARγ-induced endothelial cell proliferation, Principal Investigator, 2007-2010, $50,000 (total costs).

24. Sumitomo Chemical Company, 2008-2010, Principal Investigator, $10,000/yr.

25. Landis International, The Effects of Dietary Administration of Pyroxasulfone on the Urinary Bladder of Male Rats, Principal Investigator, 7/27/10-11/26/10, ($51,321 total costs).

26. Lexicon, The Effects of Oral Gavage Administration of LX3305 for 4 weeks in Female Rats. 2009-2010, $78,382 (total costs).

27. Bayer Crop Science, The Effects of Transfluthrin on the Urinary Bladder of Rats and Mice (*In Vivo*). 2009-2010, $78,382 (total costs).

28. Bayer Crop Science, The Effect of Transfluthrin on the Urinary Bladder of Rats and Mice (*In Vitro*) 2009-2010, $23,475 (total costs).

29. Dainippon Sumitomo Pharma Co., Ltd. 26-Week Oral Gavage Chronic Toxicity and Toxicokinetic Study with DSP-8658 in Rats with a 13-Week Recovery Period. Follow-up Urine Examination in Rats, Principal Investigator, 04/09-04/10, $54,132 (total costs).

30. Merck & Co., Inc., Investigation of potential mechanisms of rat bladder tumorigenesis and carcinogenicity, Principal Investigator, 2006-2007, $30,900 (total costs).

31. Covance Laboratories, Inc. Urinary precipitate and urine chemistry evaluations for a carcinogenicity study with CS-011 in rats, Principal Investigator, 2006-2007, $27,544 (total costs).

32. Theravance, TD: 5108: 28-day oral study in male rats with 28-day recovery period, 2006-2007, Principal Investigator, $47,075 (total costs).

33. Bristol-Myers Squibb, Three month oral investigative study of urine composition in Winstar and Sprague Dawley male rats, Principal Investigator, 2006-2007, $71,825 (total costs).

34. Bristol-Myers Squibb, Three-month oral investigative study of urine composition in male rats years, Principal Investigator, 2005-2006, $80,847 (total costs).

35. Bristol-Myers Squibb, Six-month oral investigative urinary bladder reversibility study in male rats years, Principal Investigator, 2005-2006, $175,292 (total costs).

36. Sumitomo Chemical Company, 2004-2007, Principal Investigator ($10,000 per year).

37. Covance Labs, Urinary precipitate and urine chemistry evaluations for carcinogenicity study with CS-011 in rats, 2161-001, 3/6/06-9/30/06, $27,833.

38. Bristol-Myers, One month oral investigative study of urinary bladder effects in male rats, 2183-001, 2005-2006, $76,944.

39. Bristol-Myers Squibb, Three-month oral investigative urinary bladder and metabonomics study in young versus aged male and female rats, 2004-2005, Principal Investigator, $40,761 (total costs).

40. Bristol-Myers Squibb, Twenty-one month investigative urinary bladder study of urinary bladder effects in male rats, 2003-2006, Principal Investigator, $292,420 (total costs).

41. Aventis, Exploratory 28-Day oral Gavage Toxicity in Male Rats, 2004-2005, Principal Investigator, $44,204 (total costs).

42. Wrigley, The Effects of Oral Gavage Administration of Two Bioglass Substances for 13 Weeks in Male Rats, 2004, Principal Investigator, $28,100 (total costs).

43. Bristol-Myers Squibb, Three-month oral investigative urinary bladder study in young versus aged male and female rats, 2003-2004, Principal Investigator, $201,531 (total costs).

44. Merck, Potential role of urinary physiologic changes in urinary bladder tumorigenesis by a Merck compound, 2002-2003, Principal Investigator, $88,194 (total costs).

45. Sumitomo Chemical Co., 2000-2003, Principal Investigator, $10,000 per annum.

46. Monsanto, The Effect of Sulfosulfuron on Urinary Parameters and Bladder Epithelium in Male Sprague-Dawley Rats, 2000, Principal Investigator, $86,768 (total costs).

47. Sumitomo Chemical Co., 1996-2000, Principal Investigator, $10,000 (total costs per annum).

48. National Cancer Institute, CA32513, Studies on Experimental Bladder Tumors, 1993-1999, Principal Investigator, 20% effort.

49. Luxembourg (Pamol), Ltd., Effects of Cacodylic Acid on the Rat Urinary Bladder, 1998, Principal Investigator, 10% effort, $123,174 (total costs).

50. International Life Sciences Institute-NA, Mechanistic Research on Bladder Carcinogenesis, 1997-1998, Principal Investigator, 10% effort, $125,000 (total costs).

51. Bayer Corp., YRC 2388, 1997, Principal Investigator, $8,500 (total costs).

52. International Life Sciences Institute-NA, Mechanistic Research on Bladder Carcinogenesis, 1994-1997, Principal Investigator, 30% effort, $1,055,000 (total costs).

53. Bayer Corp., Ortho-phenylphenol, 1996, Principal Investigator, $66,800 (total costs).

54. American Cancer Society, Auger Electron Emitters for Treating Bladder Cancer, 1995-1996, Co-investigator, 5% effort, $75,000 (total costs).

55. Synthetic Organic Chemical Manufacturers Association (SOCMA), Tributyl Phosphate, 1995, Principal Investigator, $56,450 (total costs).

56. Sumitomo Chemical Co., 1992-1995, Principal Investigator, $30,000 (total costs).

57. International Life Sciences Institute-NA, Mechanistic Research on Bladder Carcinogenesis, 1993-1994, Principal Investigator, 30% effort, $480,000 (total cost).

58. E. I. DuPont de Nemours & Co., Scanning Electron Microscopy Studies, 1992, Principal Investigator, $35,000 (total costs).

59. Miles, Inc., Ortho-phenylphenol, 1992-1994, Principal Investigator $70,000 (total costs).

60. Miles, Inc., Propoxur, 1992, Principal Investigator, $9,324 (total costs).

61. National Cancer Institute, CA32513, Studies on Experimental Bladder Tumors, 1990-1992, Principal Investigator, 20% effort, $241,686 (total direct costs).

62. International Life Sciences Institute-Nutrition Foundation, Mechanistic Research on Bladder Carcinogenesis, 1990-1993, Principal Investigator, 30% effort, $1,450,000 (total cost).

63. Norden-SmithKline Beecham, Scanning Electron Microscopic Evaluation of a New Product, 1988-1992, Principal Investigator, $8,559 (total costs).

64. National Cancer Institute, CA44886, Acrolein and Urinary Bladder Carcinogenesis, 1987-1992, Principal Investigator, 10% effort, $481,850 (total direct costs).

65. National Cancer Institute, CA36727, Laboratory Cancer Research Center Support (CORE) Grant, 1987-1990, Co-Investigator, 2.5% effort.

66. Summit Corp., Scanning Electron Microscopy of new product, Principal Investigator, 1989-1990, $3,620 (total costs).

67. International Life Sciences Institute-Nutrition Foundation, Saccharin Initiation-Promotion Bioassay, 1988-1990, Principal Investigator, 5% effort, $260,656 (total costs).

68. International Life Sciences Institute-Nutrition Foundation, Mechanistic Research on Bladder Carcinogenesis, 1987-1990, Principal Investigator, 25% Effort, $900,000 (total costs).

69. International Life Sciences Institute-Nutrition Foundation, Effect of Sodium Saccharin Administration on Lipid Levels in the Rat: Dose Response and Reversibility, 1989, Co-Investigator, 5% effort, $128,301 (total costs).

70. Hoechst Co., The Evaluation of the Protective Effects of Chitosan in Preventing the Hemorrhagic Cystitis Secondary to Cyclophosphamide Administration, 1988, Secondary Investigator, $5,600 (total costs).

71. National Cancer Institute, CA32513, Studies on Experimental Bladder Tumors, 1987-1990, Principal Investigator, 20% effort, $301,043 (total direct costs).

72. National Cancer Institute, CA28015, Bladder Cancer: Metabolism of Carcinogens and Prevention, consortium grant between Dr. Terry Zenser, St. Louis University, and Dr. Samuel M. Cohen, University of Nebraska Medical Center, 1986-1989, Co-Principal Investigator, 10% effort, $149,905 (total costs).

73. International Life Sciences Institute Nutrition Foundation, Effects of High Doses of Sodium Saccharin on the Neonatal Rat Bladder, 1986-1987, Principal Investigator, 5% effort, $33,840 (total direct costs).

74. Norden Laboratories, Scanning Electron Microscopic Evaluation of a New Product, 1987, Principal Investigator, $1,500 (total costs).

75. International Life Sciences Institute Nutrition Foundation, Relationship Between High Doses of Sodium Saccharin to the Maternal Rat and Pup Metabolic/Nutritional Status, 1986-1987, Principal Investigator, 5% effort, $63,407 (total direct costs).

76. National Cancer Institute, CA36727, Laboratory Cancer Research Center Support (CORE) Grant, 1984-1987, Co-Investigator, 2.5% effort, $891,043 (total direct costs).

77. State of Nebraska, Relationship of Acrolein to Cigarette Smoking-Induced Bladder Cancer, 1986-1987, Principal Investigator, 5% effort, $38,988 (total direct costs).

78. State of Nebraska, Male/Female Differences in Neonatal Cell Proliferation in Experimental Urinary Bladder Carcinogenesis, 1986-1987, Co-Investigator, 5% effort, $33,939 (total direct costs).

79. International Life Sciences Institute, Mechanistic Research on Bladder Carcinogenesis, 1985-1987, Principal Investigator, 25% effort, $787,584 (total direct costs).

80. State of Nebraska, Relationship of Acrolein to Cigarette Smoking-Induced Bladder Cancer, 1985-1986, Principal Investigator, 5% effort, $36,634 (total direct costs).

81. National Cancer Institute, CA28015, Bladder Cancer: Metabolism of Carcinogens and Prevention, consortium grant between Dr. Terry Zenser, St. Louis University, and Dr. Samuel M. Cohen, University of Nebraska Medical Center, 1983-1986, Co-Principal Investigator, 10% effort, $270,520 (total direct costs).

82. National Cancer Institute, CA33368, Urinary Bladder Cancer Promotion by Dietary L-Tryptophan, 1983-1986, Co-Investigator, 5% effort, $173,591 (total direct costs).

83. State of Nebraska, Analysis of Neonatal Cell Kinetics and Experimental Urinary Bladder Carcinogenesis, 1985-1986, Co-Principal Investigator, 5% Effort, $32,807 (total direct costs).

84. National Cancer Institute, CA38150, Cruciferae and Carcinogenesis, Co-Investigator, 5% effort, $429,430 (total direct costs).

85. State of Nebraska, Experimental and Computer Modeling of 2-Stage Carcinogenesis, 1984-1985, Co-Investigator, 5% effort, $28,032 (total direct cost).

86. State of Nebraska, Scanning Electron Microscopic Urinary Cytology, 1984-1985, Principal Investigator, 5% effort, $24,330 (total direct costs).

87. National Cancer Institute, CA32313, Non-mutational Multistage Urinary Bladder Carcinogenesis, 1982-1985, Principal Investigator, 10% effort, $214,904 (total direct costs).

88. International Life Sciences Institute, Contract with ILSI for Study with Intox, 1985, $3,397.50 (total direct costs).

89. State of Nebraska, Scanning Electron Microscopic Urinary Cytology, 1983-1984, Principal Investigator, 10% effort, $32,164 (total direct costs).

90. National Cancer Institute, CA32513, Studies on Experimental Bladder Tumors, 1982-1985, Principal Investigator, 20% effort, $243,094 (total direct costs).

91. National Cancer Institute, CA32513, Studies on Experimental Bladder Tumors, 1981-1982, Principal Investigator, 30% effort, $181,223 (total direct costs).

92. University of Nebraska Foundation, Automatic Image/X-ray Analysis System for scanning electron microscope, $76,365 (total award).

93. National Cancer Institute, CA28015, Bladder Cancer: Metabolism of Carcinogens and Prevention; consortium grant between Dr. Terry Zenser, St. Louis University, and Dr. Samuel M. Cohen, St. Vincent Hospital and University of Nebraska Medical Center, 1980-1982, Co-principal Investigator, 10% effort, $81,247 (total Direct costs to Dr. Cohen's institution).

94. RR05660, Subgrant #31; Biomedical Research Support Grant, St. Vincent Hospital; 1980-1981; Principal Investigator, 5% effort, $3,600 (total award).

95. National Cancer Institute, CA21612, Cyclic AMP Metabolism in Transitional Epithelium, 1980-1983, Co-Investigator, 5% effort, $252,402 (total direct costs).

96. RR05660, Subgrant #21; Biomedical Research Support Grant, St. Vincent Hospital; 1979-1980; Principal Investigator, 5% effort, $5,875 (total award).

97. National Cancer Institute, CA15945, Studies on Experimental Bladder Tumors, 1979-1981, Principal Investigator, 30% effort, $233,622 (total direct costs).

98. National Cancer Institute, CA15945, Studies on Experimental Bladder Tumors, 1976-1979, Principal Investigator, 30% effort, $233,584 (total direct costs).

99. National Cancer Institute, CA15945, Studies on Experimental Bladder Tumors, 1973-1976, Co-Investigator, 20% effort, $155,475 (total direct costs).

Grant Support (Pending):

1. NIH (CA215784) Mechanisms of arsenic detoxification by the human microbiome. T. McDermott and S. Walk, Principal Investigators.

Study Sections:

NIH	Chemical Pathology, 1982-6
NAS/NRC	Associateship Program, 1987-8
NIH	Immunology, Virology, Pathology, 1989-93 (Chair, 1991-93)
NIH	Special Study Section, Outstanding Investigator Grants, 1993
NIH	Special Study Section, Chemoprevention, 2002
NTP	National Toxicology Program Board of Scientific Counselors, 2002-4
NIEHS	Superfund Review, 2006
FDA	Review Panel on Melamine, 2007
NIEHS	Board of Scientific Counselors, 2008 – 2013

Site Visits:

1978	Eppley Cancer Institute, University of Nebraska Medical Center
1980	New York University
1983	McArdle Laboratory, University of Wisconsin
1984	Memorial Sloan Kettering Institute
1985	University of Idaho
1988	Los Alamos, New Mexico
1988	Sloan Kettering Institute
1998	National Center for Toxicologic Research
2000	Memorial Sloan Kettering Institute
2001	National Cancer Institute, Intramural Program
2002	New York University
2004	National Toxicology Program, Intramural Program
2004	National Institute of Environmental Health Sciences, Intramural Program
2004	Environmental Protection Agency, Intramural Program
2006	National Cancer Institute, Intramural Program
2007	Environmental Protection Agency, Intramural Program

Patents: None

Other Appointments: None

Consulting Positions: Numerous

Grant Reviews:

American Association for Cancer Research, Henry Shepard Trust Grants for Bladder Cancer Research
Austrian Science Fund
Czech Science Foundation
Dutch Cancer Society
Environmental Protection Agency (grants; intramural research programs)
Food and Drug Administration
Hong Kong Food and Health Bureau
International Programme on Chemical Safety
International Research Program on Tea
Israel Research Foundation
Kentucky Science and Engineering Foundation
Medical Research Council (MRC), United Kingdom
Michigan State University
National Academy of Sciences (fellowships and grants)
National Center for Toxicological Research
National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs), Great Britain
National Institutes of Health (extramural grants and contracts; intramural research programs)
Netherlands Organization for Health Research and Development
Office of Technology Assessment, United States Congress
U.S. Army (breast cancer grants)
University of North Carolina Center for Environmental Health and Susceptibility
Veterans Administration (grants)
Wellcome Trust
Yorkshire Cancer Research Center

Journal Reviews:

Acta Anatomica
American Journal of Clinical Nutrition
American Journal of Pathology
Annals of Surgical Oncology
Archives of Environmental Contamination & Toxicology
Belgian Journal of Zoology
Biochemica Biophysica Acta
Biochemical Pharmacology
BJU International
Bulletin of Mathematical Biology
Cancer
Cancer Causes and Control

Cancer Chemotherapy Reports
Cancer Detection and Prevention
Cancer Epidemiology, Biomarkers and Prevention
Cancer Journal
Cancer Letters
Cancer Research (Associate Editor, 1982-1990)
Cancer Science
Carcinogenesis
Cell Biochemistry and Function
Cell Biology and Toxicology
Cell and Molecular Biology Letters
Chemico-Biological Interactions
Clinical Cancer Research
Critical Reviews in Toxicology (Editorial Board, 2009 -)
Current Opinion in Toxicology (Editorial Board, 2016-)
Current Pharmaceutical Design
Electrophoresis
Environment International
Environmental and Molecular Mutagenesis
Environmental Health Perspectives
Environmental Research
Environmental Toxicology
Environmental Toxicology and Pharmacology
Experimental and Toxicologic Pathology
Experimental Biology and Medicine
Expert Opinion on Drug Safety
Expert Opinion on Drug Discovery
Food Additives and Contaminants
Food and Chemical Toxicology (Editorial Board, 1990-2009; Associate Editor, 2009-2010; Editorial Board, 2011-2015)
Fundamental and Applied Toxicology (Editorial Board, 1992-1997)
Genes and Environment
Hepatology
Histochemical Journal
Histology and Histopathology
Human and Experimental Toxicology
Industrial Health
International Immunopharmacology
International Journal of Cancer
International Journal of Environmental Research and Public Health
International Journal of Experimental Pathology
International Journal of Oncology (Editorial Board, 1996-2010)
International Journal of Radiation Biology
Journal of Agricultural and Food Chemistry
Journal of Biological Chemistry
Journal of Environmental Sciences

Journal of Investigational Biochemistry
Journal of Luminescence
Journal of Pathology
Journal of Pharmacological and Toxicological Methods
Journal of Pharmacology and Experimental Therapeutics
Journal of the American Association for Laboratory Animal Science
Journal of the American Medical Association
Journal of the National Cancer Institute
Journal of Toxicology (Editorial Board, 2008-2011)
Journal of Toxicology-Clinical Toxicology
Journal of Translational Medicine Research
Journal of Urology
Kidney International
Laboratory Investigation (Editorial Board, 1993-2008)
Liver International
Molecular and Cellular Endocrinology
Molecular Biology of Cancer
Molecular Cancer Therapeutics
Molecular Carcinogenesis
Mutation Research
Nature Reviews Drug Discovery
Nutrition Journal
Nutrition Research
Oncology
Oxford University Press
Pathology International (Editorial Board, 2001- 2013, 2017-2019)
Pharmacology
Phytotherapy Research
PLoS ONE
PPAR Research
Proceedings of the Japan Academy, Series B
Proceedings of the National Academy of Sciences
Proteomics
Regulatory Toxicology and Pharmacology (Editorial Board, 2014 -)
Research in Health Risk Assessment
Research in Veterinary Science
Risk Analysis
Scanning Microscopy
Science
Teratogenesis, Carcinogenesis, Mutagenesis
Tissue and Cell
Toxicologic Pathology (Associate Editor, 2005-2016; Editorial Board, 2016-)
Toxicological and Environmental Chemistry
Toxicological Sciences (Editorial Board, 1998-2003)
Toxicology (Editorial Board, 2003-)
Toxicology and Applied Pharmacology

Toxicology In Vitro
Toxicology Letters
Urologic Oncology (Editorial Board, 1995-2010)
Veterinary Pathology

Abstract Reviews:

American Association for Cancer Research
American Urological Association

Military service: None

Honors and Awards:

1964	Phi Eta Sigma
1966	Phi Kappa Phi
1967	Phi Beta Kappa
1968	Sigma Sigma
1969	James M. Price Cancer Research Award, University of Wisconsin College of Medicine
1968-1972	NIH Medical Scientist Trainee (GM01932)
1982-	Who's Who in Frontiers of Science and Technology
1982-1990	Associate Editor, Cancer Research
1985-	Havlik-Wall Professor of Oncology, Endowed Chair
1988	Alpha Omega Alpha
1990	University of Nebraska Outstanding Research and Creative Activity Award
1990-2009	Editorial Board, Food and Chemical Toxicology
1990-	Who's Who in the Midwest
1991-	Who's Who in Health and Medical Services
1991-	Who's Who in Science and Engineering
1992	Fuji-Otsuka Lectureship at the University of Tokushima School of Medicine, Tokushima, Japan
1992-1997	Editorial Board, Fundamental and Applied Toxicology
1993-2008	Editorial Board, Laboratory Investigation
1993-1996	Chloroform Scientific Advisory Board, Chemical Industry Institute of Toxicology
1993-1996	National Research Council Committee on Comparative Toxicity of Naturally Occurring Carcinogens
1994-	American Men and Women of Science
1995-2010	Editorial Board, Urologic Oncology
1995-	Elected fellow, The Academy of Toxicological Sciences (Board of Directors, 2014-2017)
1996	Dean's Award for Outstanding Service to the College of Medicine, University of Nebraska
1996-2013	Best Doctors in America: Central Region
1996-2013	Best Doctors in Omaha, Nebraska
1996-2010	Editorial Board, International Journal of Oncology
1996	John Doull Medal, Central States Chapter, Society of Toxicology

1997-2003	Science Advisory Committee, Chemical Industry Institute of Toxicology (CIIT)
1998	Pathology/Microbiology/Molecular Biology-Genetics/Health Risk Assessment, Environmental Protection Agency Peer Review Panel
1998-2003	Editorial Board, Toxicological Sciences
1999	Distinguished Alumnus Citation, University of Wisconsin Medical School
2000-	Biographical Candidate, Lexington Who's Who
2001	Arnold J. Lehman Award, Society of Toxicology
2001-2013, 2017-2019	Editorial Board, Pathology International
2002-	Flavor and Extract Manufacturers Association Expert Panel (Vice Chairman, 2011-2013; Chairman, 2014-2016)
2002-2004	Board of Scientific Counselors, National Toxicology Program
2002-2003	National Research Council Subcommittee on Dietary Supplements
2003-	Editorial Board, Toxicology
2003-	Elected Fellow, International Academy of Toxicologic Pathology
2004	Distinguished Scientist in Cancer Research, Japanese Foundation for Cancer Research, Japanese National Cancer Center and Japan Academy
2005-2016	Associate Editor, Toxicologic Pathology
2008-2011	Journal of Toxicology, Editorial Board
2008-2013	Board of Scientific Counselors, National Institute of Environmental Health Sciences
2009-	Editorial Board, Critical Reviews in Toxicology
2009-2010	Associate Editor, Food and Chemical Toxicology
2010-2015	Editorial Board, Food and Chemical Toxicology
2010	Distinguished Scientist Award, University of Nebraska Medical Center
2012	George H. Scott Award, Toxicology Forum
2012	Lifetime Achievement Award, Association for Environmental Health and Sciences
2014	One of the Best Papers Demonstrating Application of Risk Assessment, in 2013, SOT Risk Assessment Specialty Section (for Cohen et al., Crit. Rev. Toxicol., 43:711-752, 2013).
2014-	Academy of Toxicologic Sciences Board of Directors
2014-	Editorial Board, Regulatory Toxicology and Pharmacology
2015	Society of Toxicologic Pathology Lifetime Achievement Award
2016-	Editorial Board, Current Opinion in Toxicology
2016-	Editorial Board, Toxicologic Pathology
2016	Distinguished Scientist Award, American College of Toxicology
2016	Ambassador Award, Mid-Atlantic Society of Toxicology
2017	Merit Award, Society of Toxicology

Memberships and offices in professional societies:

Academy of Toxicological Sciences (fellow) (Board of Directors, 2014-2017), 1995-
American Association for Advancement of Science, 1980-2006, 2013-
American Association for Cancer Research, 1975-
American Association of Pathology, 1975-1992

American Medical Association, 1988-2007
American Society of Clinical Pathology, 1989-2012
American Society for Investigative Pathology, 1993-2013
Association of Medical School Microbiology and Immunology Chairs, 1992-2007
Association of Pathology Chairs, 1992-2007
Central States Chapter, Society of Toxicology (President 2004-2005), 1994-
College of American Pathologists (diplomate), 1994-2011
Gann, The Japanese Cancer Association, 1976-2012
International Academy of Pathology, United States and Canadian Academy of Pathology, 1986-2012
International Academy of Toxicologic Pathology (fellow), 2003 –
International Life Sciences Institute Board of Trustees (Vice Chairman, 2010 -2012; Chairman, 2012-2015), 2007-2016
International Life Sciences Institute-Health and Environmental Sciences Institute Board of Trustees (Vice Chairman, 2004-2006; Chairman, 2006-2008), 2001-2017
International Society of Urologic Pathology, 1993-2012
Nebraska Association of Pathologists, 1982-
Nebraska Medical Association, 1986-2007
Omaha Medical Society, 1986-2007
Society for Environmental Geochemistry and Health, 1998-2006
Society of Toxicologic Pathologists, 1990-
Society of Toxicology, 1986-
Society of Toxicology, Carcinogenesis Specialty Section (Vice President-Elect, 2000; Vice President, 2001; President, 2002) 1998-

Committee assignments:

Local (completed):

Hospital Infections Committee, St. Vincent Hospital Medical Staff, 1978-1981

Animal Care Committee (Chairman), St. Vincent Hospital, 1978-1981

Laboratory Committee, St. Vincent Hospital Medical Staff, 1980-1981

Cancer Education Committee, University of Massachusetts Medical School, 1978-1981

Chemical Hazards Committee, University of Massachusetts Medical School, 1978-1981

Research Council, St. Vincent Hospital, 1980-1981

Academic Computing Advisory Committee, University of Nebraska Medical Center, 1981-1983

Safety Committee, Eppley Institute, University of Nebraska Medical Center, 1981-1983

Research and Development Committee, University of Nebraska College of Medicine, 1981-1984

Seed Grant Review Committee (Chairman, Basic Sciences Section), University of Nebraska Medical Center, 1982

Cancer Research Grant Review Committee, University of Nebraska Medical Center, 1982

Seed Grant Review Committee (Chairman, Clinical and Behavioral Sciences Section), University of Nebraska Medical Center, 1983

Cancer Research Grant Review Committee (Chairman), University of Nebraska Medical Center, 1983

Tissue and Transfusion Review Committee (Chairman), University of Nebraska Hospital Medical Staff, 1983-1984

Search Committee for Chairman of the Department of Surgery, University of Nebraska Medical Center, 1983-1984

Quality Assurance Committee, University of Nebraska Medical Center, 1983-1984

Toxicology Task Force, University of Nebraska Medical Center, 1983-1984

Biannual Continuing Medical Education Program Committee, Nebraska Association of Pathologists, 1983-1984

Cancer Research Grant Review Committee, University of Nebraska Medical Center, 1984

Advisory Committee, Dean Selection, College of Medicine (Chairman), University of Nebraska Medical Center, 1984-1985

Graduate Committee, Department of Pathology and Laboratory Medicine (Chairman), University of Nebraska Medical Center, 1981-1985

Medical Sciences Interdepartmental Area Graduate Committee, University of Nebraska Medical Center, 1982-1985

Diagnostically-Related Group Committee, University of Nebraska Medical Center, 1983-1985

Tenure and Promotion Committee, Eppley Institute (Chairman, 1984), University of Nebraska Medical Center, 1983-1986

Director’s Advisory Committee, Eppley Institute, University of Nebraska Medical Center, 1983-1992

NMR Committee, University of Nebraska Medical Center, 1984-1992

Outpatient Diagnostic and Treatment Programs Task Force, University of Nebraska Medical Center, 1984-1986

Nebraska Association of Pathologists - Continuing Medical Education, State of Nebraska, 1984-1986

Advisory Committee, Biochemistry Chairman Search Committee, College of Medicine, University of Nebraska Medical Center, 1985-1986

Advisory Committee, Pediatric Chairman Search Committee, College of Medicine, University of Nebraska Medical Center, 1985-1986

Advisory Committee, Pediatric Chairman Search Committee, College of Medicine, University of Nebraska Medical Center, 1985-1986

University of Nebraska Medical Center/Share Liaison Committee – Information System, Sub-Committee of Clinical Practice Board, University of Nebraska Medical Center, 1986

Advisory Committee to President Roskens, Foundation Awards, University of Nebraska, 1986

Outstanding Research and Creativity Award Committee (Chairman, 1986-1987), University of Nebraska, 1985-1987

Clinical Practice Board, University of Nebraska Medical Center, 1988

Clinical Practice Board Executive Committee, University of Nebraska Medical Center, 1988

Eppley Institute Promotion and Tenure Committee, University of Nebraska Medical Center, 1987-1988

Board of Directors, Nebraska Clinicians Group, University of Nebraska Medical Center, 1983-1989

Audit Committee, Nebraska Clinicians Group (Chairman, 1987-1989), University of Nebraska Medical Center, 1986-1989

Cancer Education Committee, University of Nebraska College of Medicine, 1981-1990

Carcinogenesis/Nutrition Group, Eppley Institute (Chairman, 1989-1991), University of Nebraska Medical Center, 1983-1990

College of Medicine Tenure and Promotion Committee (Chairman, 1989-1991), University of Nebraska Medical Center, 1985-1991

Committee on Selection of Student Nominees, Alpha Omega Alpha, University of Nebraska Medical Center, 1988-1990

College of Medicine Blue Ribbon Committee on the Curriculum, University of Nebraska Medical Center, 1988-1990

Hospital Executive Planning Council, University of Nebraska Medical Center, 1986-1992

Department of Pathology and Microbiology Promotion and Tenure Committee (Chairman, 1988), University of Nebraska Medical Center, 1988-1992

M.D.,-Ph.D. Committee, University of Nebraska Medical Center, 1988-1992

Committee to Recommend Cancer Activities Strategies, University of Nebraska Medical Center, 1990-1993

Dean of the College of Medicine Search Committee (Chairman), University of Nebraska Medical Center, 1992-1993

Curriculum Oversight Group, University of Nebraska Medical Center, 1992-1993

Toxicology Program, University of Nebraska Medical Center, 1985-1992

Nebraska Medical Association Coordinating Committee, 1993-1994

Search Committee for Deputy Director of University of Nebraska Comprehensive Cancer Center (Chairman), 1994-1995

College of Medicine Strategic Planning Oversight Committee, 1994-1995

University of Nebraska Medical Staff Executive Committee, 1994-1996

College of Medicine Howard Hughes Institute Grant Committee, 1995

University of Nebraska Medical Center Redesign Executive Team, 1995-1996

University of Nebraska Medical Center Redesign Research and Education Steering Team (Director), 1995-1996

Chancellor's and President's Advisory Committee for Research and Education, 1996

University of Nebraska Medical Center Partnership Internal Assessment Committee, 1996

Howard Hughes Candidates Nominating Committee, 1996

Graduate Committee, Department of Pathology and Microbiology (Chairman, 1985-1992), University of Nebraska Medical Center, 1985-1997

Search Committee for the Director of University of Nebraska Medical Center/Eppley Cancer Center, University of Nebraska Medical Center, 1997

University Hospital Board of Governors, 1995-1997

Outcomes Management Pre-Merger Transition Team, University of Nebraska Medical Center, 1997

Genetics Research Space Executive Committee (Chairman), 1994-1998

Environmental and Occupational Medicine Coordinating Council, 1994-1999

University of Nebraska Medical Center and University of Nebraska Marshall Professorship in Biotechnology Selection Committee, 1998

College of Medicine Genetics Strategic Planning and Implementation Committee (Chairman), 1994-1998

College of Medicine Definition of Productive Space Committee, 1998

University Medical Associates Executive Committee, 1994-1998

Chancellor's Research and Education Advisory Panel, 1996-1998

University of Nebraska Medical Center/Molecular Genetics Director Search Committee, 1997-1999

Education Planning Work Group Committee, 1999

University of Nebraska Medical Center/Research Planning Work Group Committee, 1999

Chancellor's Investiture Committee (Co-Chair), 1999

Interactions Between Centers and Departments at University of Nebraska Medical Center (Chairman), 1999-2000

Review of the Department of Internal Medicine, 1999-2000

Research Centers of Excellence Steering Committee (Chair of Laboratory Support Subcommittee), 1999-2000

University of Nebraska Medical Center/Ad Hoc Committee on Volunteer Faculty, 2000

University of Nebraska Medical Center/Seed Grant Subcommittee, 2000

Breast Cancer Research Program Internal Advisory Committee, 1994-2000

Pancreas Cancer Research, Internal Advisory Committee, 1995-2000

Search Committee for Chair of Internal Medicine, 1999-2001

University of Nebraska Minority Faculty Symposium, 2000-2001

Biotechnology Program on Infectious Diseases, University of Nebraska Medical Center (Director), 1988-2001

Technology Evaluation and Protection Committee, University of Nebraska Medical Center, 1992-2001

Animal Care Committee, Eppley Institute, University of Nebraska Medical Center, 1981-2001

University of Nebraska Medical Center Research Council, 1993-2002

Search Committee, Chair of the Department of Cell Biology, Anatomy and Genetics, 2002-2003

Radiolabelled Antibody Advisory Committee, University of Nebraska Medical Center, 1991-2003

University of Nebraska Medical Center/Eppley Center for Cancer Research and Care, Internal Advisory Committee, 1993-2003

University of Nebraska Medical Center/Eppley Cancer Center, Leadership Council, 1996-2003

Strategic Planning Committee, UNMC, 2002-2004

University Medical Associates, Executive Committee, 2000-2004

Latta Lectureship Committee, University of Nebraska Medical Center, 1988-2004

University of Nebraska Medical Center, Strategic Recruitment Proposal Review Committee, 1998-2005.

University of Nebraska Medical Center, Strategic Recruitment Proposal Review Committee, 1998-2005.

Core Facility Advisory Council, UNMC, 2002-2005.

Clinical Oncology Planning Committee, UNMC, 2004-2005

University of Nebraska Medical Center/Research Development Board, 1999-2005

Dean’s Committee, Veterans Administration Hospital, Omaha, Nebraska, 1992-2007

University Medical Associates Benefits Committee (Chairman), 1995-2007

University Medical Associates Board of Directors (Vice President, 1996-1999), 1995-2007

University of Nebraska Federal Relations Team, 2000-2007

Durham Research Center Management Council, UNMC, 2003-2007

University of Nebraska Medical Center/Eppley Cancer Center, Scientific Advisory Council (Vice-Chair, 1996-2000), 1996-2007

Pathology Residency Program (Director) 2009-2013

Graduate Medical Education Committee, 2009-2013

University of Nebraska College of Medicine Grievance Committee (Chair 2011-2016), 2010-2016

Local (Active):

University of Nebraska Medical Center Subcommittee of Equity Office Working Group on Under Represented Minorities Faculty, 2014-

University of Nebraska Medical Center Faculty Diversity Fund Committee, 2015-

National and International (completed):

Special Study Section, NIH, 1980

Chemical Pathology Study Section, NIH, 1982-1986

Program and Organizing Committee, International Symposium on the Role of Co-Carcinogens and Promoters in Human and Experimental Carcinogenesis; Budapest, Hungary, May 16-18, 1983

Membership Committee, American Association for Cancer Research, Inc., 1985-1986

U.S.-Japan Co-Operative Cancer Research Program, Recent Advances In Bladder Cancer Research, Organizing Committee (Co-Chair), 1985-1986

Chemical Pathology B Study Section Special Review (Chairman), 1988

Program Committee, The Fourth International Symposium, Foundation for Promotion of Cancer Research, Japan, March 26-28, 1991

Mini-Symposium on Chemical and Viral Carcinogenesis, Federation of American Societies of Experimental Biology, (Organizer and Chairman), Anaheim, California, April 8, 1992

Immunology, Virology, Pathology Study Section, NIH (Chairman, 1991-1993), 1989-1993

Special Study Section, NIH, Outstanding Investigator Grants, 1993

Finance Committee, American Association for Cancer Research, 1991-1994

Forestomach Subgroup of the Carcinogenicity Working Group, International Life Sciences Institute, Washington, D.C., 1988-1994

Cell and Tissue Biology 3 (CTB3) Review Committee, United States Army Research and Development Command Breast Cancer Research Program (Chairman), 1994

Nomenclature Committee, Society of Toxicologic Pathologists, 1992-1995

Working Group on Bladder Cancer, International Life Science Institute, Risk Science Institute and Environmental Protection Agency, 1992-1995

American Association of Cancer Research, Program Committee, 1993-1995; International Cancer Congress, "Novel Mechanisms Chemical Carcinogenesis (Organizer and Co-Chairman), New Delhi, India, 1994

American Association for Cancer Research, Program Committee, Genitourinary Tract Cancers (Chairman), 1994-1995

Special Study Section, NIH (Chairman), 1995

International Life Sciences Histopathology Workshop-Urinary Tract (Organizer), Hannover, Germany, 1995

National Research Council Committee on Comparative Toxicity of Naturally Occurring Carcinogens, 1993-1996

Scientific Advisory Panel on Chloroform, Chemical Industry Institute of Toxicology, 1992-1996

International Life Sciences Institute-Environmental Protection Agency Working Group on Cancer Bioassay Dose-Selection Modeling, 1990-1996

Environmental Protection Agency/FIFRA Scientific Advisory Panel, 1996-1997

Expert Panel on Arsenic Carcinogenicity, U.S. Environmental Protection Agency, 1997

International Life Sciences Institute/Environmental Protection Agency Expert Panel to Evaluate EPA's Proposed Guidelines for Carcinogenic Risk Assessment, 1996-1998

Environmental Protection Agency/FIFRA Scientific Advisory Panel, 1997

Editorial Board of Fundamental and Applied Toxicology, 1992-1997

International Agency for Research on Cancer, Working Group, 1997

Scientific Advisory Group on Cellular Telephone Research, 1995-1998

Pathology/Microbiology/Molecular Biology-Genetics/Health Risk Assessment, Environmental Protection Agency Peer Review Panel, 1998

Electric Power Research Institute; Scientific Advisory Panel, 1994-1998

Scientific Advisory Committee (SAC), Chemical Industry Institute of Toxicology (CIIT), 1997-1998

International Agency for Research on Cancer, Working Group, 1998

Cell Death Nomenclature Committee, Society of Toxicology Pathology, 1997-1999

Program Committee, Carcinogenesis Specialty Section, Society of Toxicology, 1997-1999

Princess Takamatsu Cancer Research Symposium Organizing Committee (Co-Chair), 1998-1999

International Academy of Pathology Symposium Organizing Committee (Co-Chair), 1999-2000

Arsenic Expert Panel, U.S. Environmental Protection Agency, 2000

International Life Sciences Institute/Risk Sciences Institute Annual Meeting Scientific Session (Organizer and Chair), 2000-2001

International Life Sciences Institute/N.A. Apoptosis Joint Subcommittee of the Committees on Proposition 65 and the Technical Committee on Food Toxicology and Safety Assessment (Chairman), 1998-2001

Society of Toxicology Workshop Organizing Committee for 2001 Annual Meeting (Co-Chair), 2000-2001

National Cancer Institute, Intramural Program Site Visit and Review, 2001

International Life Sciences Institute/Alternatives to Carcinogenicity Testing Committee (ACT), 1997-2002

International Life Sciences Institute/AFIP, Working Group on Mesenchymal Tumors of the Mouse Urinary Bladder, 1997-2001

Society of Toxicology Task Force to improve the scientific basis of Risk Assessment (RATF), 1999-2001

International Programme on Chemical Safety Panel, London, 2000-2001

International Life Sciences Institute/Health and Environmental Sciences Institute, Mechanisms and Risk Assessment Committee (Vice Chair), 2001-2002

Search Committee for Director of International Life Sciences Institute/Health and Environmental Sciences Institute, 2002

Society of Toxicology Workshop Organizing Committee for 2003 Annual Meeting (Co-Chair), 2002-2003

Editorial Board of *Toxicological Sciences*, 1998-2003

International Life Sciences Institute/RSI Peroxisome Proliferator and Human Relevance Committee, Chair, 2001-2003

National Research Council Working Group of the Committee on the Framework for Evaluating the Safety of Dietary Supplements, 2002-2003

Schering-Plough Research Institute Consultants Panel, 2001-2004

National Toxicology Program Board of Scientific Counselors of the Office of the Assistant Secretary for Health, 2002-2004

International Life Sciences Institute/Risk Science Institute Board of Scientific Advisors, 1998-2005

Pfizer Carcinogenesis Advisory Board, 2000-2005

International Life Sciences Institute/RSI Dose Response II Committee, 2001-2005

Astra Zeneca Science Advisory Board (Chair), 2002-2005

International Life Sciences Institute/RSI Human Relevance II Committee, 2003-2005

Environmental Protection Agency, Intramural Research Program Site Visit and Review, 2004

International Life Sciences Institute/Health and Environmental Sciences Institute, Editorial Review Committee (Chair), 2002-2006

International Programme on Chemical Safety (IPCS), World Health Organization, Cancer Working Group, 2003-2006

National Cancer Institute, Intramural Program Site Visit and Review, 2006

International Life Sciences Institute/Health and Environmental Sciences Institute, Emerging Issues Committee, 2000-2006

International Life Sciences Institute/Health and Environmental Sciences Institute, Liver Tumor Working Group, 2004-2006

International Life Sciences Institute/Health and Environmental Services Institute, Search Committee, 2006-2007

National Comprehensive Cancer Network, Bladder Cancer Working Group, 1996-2007

Research Committee, Association of Pathology Chairs, 1997-2007

International Life Sciences Institute/Health and Environmental Sciences Institute, Nominating Committee, 2002-2007

International Life Sciences Institute/Health and Environmental Sciences Institute, Cancer Hazard Identification Strategies Committee, 2004-2007

Organizing Committee, International Federation of Societies of Toxicologic Pathology, 2007 symposium (Sept), Board, Basel Switzerland, 2006-2007

Society of Toxicologic Pathology, Membership Committee, 2007-2008

Editorial Board of *Laboratory Investigation*, 1993-2008

Society of Toxicologic Pathology, 2008 Annual Meeting, Symposium Organizing Committee (Co-Chair), 2007-2008

International Life Sciences Institute/Health and Environmental Sciences Institute, PPAR Working Group, 2005-2009

Society of Toxicologic Pathology, Awards Committee, 2008-2009

Society of Toxicologic Pathology, Nominations Committee, 2008-2009

Society of Toxicology/Health and Environmental Sciences Institute, Current Concepts in Toxicology (CCT) Workshop, "Hemangiosarcomas in Rodents: Understanding Modes of Action and Human Relevance", Organizing Committee (Co-Chair), 2008- 2009

Scientific Review Committee, American Association for Cancer Research, Henry Trust grants for bladder cancer research, 2008 – 2009

Schering-Plough Science Advisory Board, 2009

Editorial Board of *Food and Chemical Toxicology*, 1990-2009

Sanofi-Aventis Science Advisory Board, 2006-2009

Editorial Board of Journal of Toxicology, 2008-2011

Society of Toxicologic Pathology, 2009 Annual Meeting Organizing Committee, 2008-2009

American Urological Association Abstract Review Team, 2009

International Life Sciences Institute, Risk Science Institute and Health and Environmental Sciences Institute, and ECETOC Mode of Action, Conference Organizing Committee, 2009
Associate Editor, *Food and Chemical Toxicology*, 2009-2010

International Life Sciences Institute/Health and Environmental Sciences Institute, Executive Committee (Member at Large, 2002-2004, 2008-2010; Vice Chairman of the Board, 2004-2006; Chairman of the Board, 2006-2008)

Society of Toxicology Current Concepts in Toxicology, Workshop on New Approaches to Carcinogenicity Testing, Organizing Committee, 2010

Editorial Board of *Urologic Oncology*, 1995-2010

Editorial Board of *International Journal of Oncology*, 1996-2010

EPRI Arsenic Scientific Review Panel, 2008-2012

International Life Sciences Institute, Nominations Committee, 2010-2012

Society of Toxicologic Pathology, Editor Search Committee, 2012-2013

Board of Scientific Counselors, National Institute of Environmental Health Sciences, 2008-2013

International Life Sciences Institute/Health and Environmental Sciences Institute, Executive Committee, 2011-2012

International Life Sciences Institute, Board of Trustees, Scientific Issues Committee, 2007-2014

International Life Sciences Institute, Board of Trustees, Tripartite Committee, 2007-2014

Society of Toxicology, Awards Committee (elected), 2012-2014

Editorial Board of *Pathology International*, 2001-2013

International Academy of Toxicologic Pathology, Membership committee, 2007-2013

Health and Environmental Sciences Institute, Risk Assessment for the 21st Century Committee (Co-Chair of Dose Response Team), 2009-2014

International Life Sciences Institute Board of Trustees, Executive Committee, 2010-2015

Society of Toxicologic Pathology Working Group on Cell Proliferation and Apoptosis, 2013-2015

Associate Editor of *Toxicologic Pathology*, 2005-2016

International Life Sciences Institute, Board of Trustees, 2007-2016 (Vice Chairman, 2010-2012; Chairman, 2012-2015)

International Life Sciences Institute Malaspina Intenational Scholars Travel Award Selection Committee, 2014-2016

International Life Sciences Institute Board of Trustees Nomination Committee (Chair), 2015-2016

International Life Sciences Institute/Health and Environmental Sciences Institute Global Platform Initiative Steering Team, 2014-2016

Academy of Toxicologic Sciences Academy Recognition Task Force, 2015-2016

National and International (current):

International Life Sciences Institute/Health and Environmental Sciences Institute Board of Trustees (Vice Chairman, 2004-2006; Chairman, 2006-2008), 2001-2018

International Life Sciences Institute/Health and Environmental Sciences Institute Program Strategy and Stewardship Committee (Vice Chair, 2001-2004; Chair, 2004-2006), 2001-2018

Flavor and Extract Manufacturers Association of the United States, Expert Panel, 2002- (Vice Chairman, 2011-2013; Chairman, 2014-2017)

Editorial Board of *Toxicology*, 2003-

Editorial Board of *Critical Reviews in Toxicology*, 2009-

Academy of Toxicologic Sciences, Board of Directors, 2014-2017

Editorial Board of Regulatory Toxicology and Pharmacology, 2014-

Michigan State University's Center for Research on Ingredient Safety (CRIS) Emerging Issues Committee, 2015-

International Life Sciences Institute Governance Working Group, 2016-

Editorial Board, Current Opinion in Toxicology, 2016

International Life Sciences Institute/Health and Environmental Sciences Institute Editor-in-Chief, 2017-2020.

Service Pathology:

Current**:** Surgicals (approximately 1,800 cases/year)

Teaching:

Current**:** Small groups and laboratories in second year medical school courses
Pathology residents and fellows
Interdepartmental and intradepartmental conferences
Graduate Students
Post-doctoral Fellows

Graduate Students:

Thesis Advisor to: Daniel Williamson (M.D., Ph.D.)

Irene A. Sysel (M.D.)
Susan Speaks (M.D., Ph.D.)
Theodore D. Miller (M.D.)
Maria Louisa de Oliveira (Ph.D.) (Sao Paulo State University, Botucatu, Brazil)
Merielen Nascimento (Ph.D.) (Sao Paulo State University, Botucatu, Brazil)
Satako Kiyota (Ph.D.)
Mitscheli Sanches da Rocha (Ph.D.) (Sao Paulo State University, Botucatu, Brazil)
Ana Paula Cardoso (Ph.D.) (Sao Paulo State University, Botucatu, Brazil)
Nathalia Souza (Ph.D.) (Sao Paulo State University, Botucatu, Brazil)
Lora Arnold (M.S.)
Margaret St. John (M.S.)
Maria Jackson (B.S.)
Amy Salem (B.S.)
Denise Demers (B.S.)
Donald Headley (B.S.)
John Wittenberg (B.S.)
Eric Boyd (B.S.)

Supervisory Committee for: Christine Eccleston (Ph.D.)
Thomas Gross (M.D., Ph.D.)
Susan Speaks (M.D., Ph.D.)
Julie Gulizia (M.D., Ph.D.)
Shadia M. Ihlaseh (Ph.D.)
Aniruddha Chatterjee (Ph.D.) (University of Calcutta, External Reviewer)
Hang Su (Ph.D.)
Matthew T. McLeay (M.D., M.S.)
Terry N. Wooldridge (M.D., M.S.)
Michael W. Davis (M.S.)
Deborah L. Hassler (M.S.)
Sally G. Johnson (M.S.)
Krysten Knott (M.S.)
James Burgart (M.S.)
Denise Kolbet (M.S.)
James H. Lichty (M.S.)
Nancy A. Riesberg (M.S.)
James D. Sargeant (M.S.)
Alice M. Schumaker (M.S.)
Shirley Shepherd (M.S.)
Justin Hobbs (M.S.)

Post-Doctoral Fellows (present positions):

Masayuki Arai, M.D. (Professor and Chairman, Department of Pathology, and Dean, School of Medical Technology and Nursing, Fujita-Gakuen University, Toyoake, Japan) (Deceased)

Shoji Fukushima, M.D., Ph.D. (Professor and Chairman, Department of Pathology, Osaka City University Medical School, Osaka, Japan, retired; Director, Japan Bioassay Research Center, Japan Industrial Safety and Health Association, retired)

Gen'i Murasaki, M.D. (Director of Shutoken JP Health Care Center, Tokyo, Japan)

Toru Suzuki, M.D. (Associate Professor, Department of Urology, Dokkyo University School of Medicine, Mibu, Japan)

Michael J. Becich, M.D., Ph.D. (Professor, Department of Pathology; Chairman, Department of Biomedical Informatics, University of Pittsburgh, Pittsburgh, Pennsylvania)

Ryohei Hasegawa, M.D. (Chiba, Japan)

Raymond A. Smith, Ph.D. (Pharmacist, Marinette, Wisconsin)

Takao Sakata, M.D. (Department of Urology, Nagoya University Medical School, Nagoya, Japan)

Angela Mann, Ph.D. (Assistant Professor, University of Massachusetts Medical Center, Worcester, Massachusetts)

Tsuneo Masui, M.D., Ph.D. (General Director, Aichi Prefectural Government, Public Health Science, Aichi, Japan)

Emily Garland, Ph.D. (Research Associate, Vanderbilt University)

Takehiko Okamura, M.D. (Assistant Professor, Department of Urology, Nagoya City University Medical School, and Chief of Urology, Meijo Hospital, Nagoya, Japan)

Makoto Asamoto, M.D., Ph.D. (Associate Professor, First Department of Pathology, Nagoya City University Medical School, Nagoya, Japan) (Deceased)

Kumiko Ogawa, M.D., Ph.D. (Head, Division of Pathology, National Institute of Health Sciences, Tokyo, Japan)

Masahiro Ito, M.D. (Professor, Department of Surgery, Fujita-Gakuen University, Toyoake, Japan)

Shinji Yamamoto, M.D. (Urologist, Osaka, Japan)

Min Wei,, M.D., Ph.D. (Associate Professor, Department of Pathology, Osaka City University, Osaka, Japan)

Mitsuru Futakuchi, M.D., Ph.D. (Associate Professor, Dept. of Molecular Toxicology, Nagoya City University Medical School, Nagoya, Japan)

Takamasa Ohnishi, M.D., Ph.D. (Professor and Chairman, Nutrition Division, Department of Health and Science, Hyogo University, Hyogo, Japan)

Shugo Suzuki, M.D., Ph.D., (Assistant Professor, First Department of Pathology, Nagoya City University Medical School, Nagoya, Japan)

Masanao Yokohira, M.D., Ph.D., (Assistant Professor, Department of Pathology, Kagawa Medical School, Takamatsu, Kagawa, Japan)

Satoko Kakiuchi-Kiyota, Ph.D. (Principal Scientist, Genentech, South San Francisco, CA)

Puttappa Dodmane, Ph.D., (Scientist, California Environmental Protection Agency)

Aparajita Chowdhury (Senior Research Associate, Warp Drive Bio, Cambridge, MA)

Invited Presentations:

7/5/72	"Carcinogenesis caused by nitrofuran derivatives," Fifth International Congress of Pharmacology, San Francisco, California
10/21 – 10/25/75	"Early lesions in experimental bladder cancer: Experimental design and light microscopic findings," International Symposium on Early Lesions and the Development of Epithelial Cancer, Bethesda, Maryland
7/21 – 7/22/76	"Tissue culture characteristics of bladder carcinoma cells," Annual Meeting of the Japanese Bladder Cancer Group, Unuma, Japan
9/16/76	"Bladder cancer," Osaka University, Osaka, Japan
9/26 – 09/28/76	Etiology of Bladder Cancer, U.S.-Japan Cancer Research Program, Kyoto, Japan
10/08 – 10/9/76	Conference on Analytical Epidemiology, U.S.-Japan Cancer Research Program, Tokyo, Japan
10/29/76	"Scanning electron microscopy of bladder carcinogenesis," Tukushima University, Tokushima, Japan
12/12/76	"Use of scanning electron microscopy in the diagnosis of urinary bladder cancer," 150th Meeting of the Okayama Urological Association, Okayama, Japan
1/22/77	"Neovascularization in bladder carcinogenesis," Japanese Study Group on Epithelial-Mesenchymal Interactions, Tokyo, Japan
1/28 – 1/29/77	"Bladder carcinogenesis," Annual Meeting of the Japanese Bladder Cancer Group, Unuma, Japan
2/7 – 2/8/77	"Nitrofuran carcinogenesis," Tohoku University, Sendai, Japan
2/15/77	"Effects of nitrofurans on the immune system," Radiation Effects Research Foundation, Hiroshima, Japan
2/16/77	"Urinary bladder carcinogenesis," Hiroshima University, Hiroshima, Japan
2/23/77	"Bladder cancer," Kyoto University, Kyoto, Japan
3/8/77	"Ultrastructural aspects of bladder cancer," Aichi Cancer Center, Nagoya, Japan
3/14/77	"Bladder cancer," Gifu University, Gifu, Japan

3/22/77	"Nitrofuran carcinogenesis," Cancer Institute, Tokyo, Japan
3/23/77	"FANFT metabolism and bladder carcinogenesis," Biochemical Research Institute, Tokyo, Japan
4/21/77	"Nitrofuran carcinogenesis," Nara Medical University, Nara, Japan
4/23/77	"Experimental bladder cancer research," Masuko Hospital, Nagoya, Japan
5/10/77	"Nitrofuran carcinogenesis," National Institute of Hygienic Sciences, Tokyo, Japan
5/16/77	"Nitrofuran carcinogenesis," Kyoto University, Kyoto, Japan
11/7 – 11/11/78	"Urinary cytology as examined by scanning electron microscopy," Symposium on Tumors of the Urothelium, American Society of Cytology, Miami, Florida
11/7 – 11/11/78	"Experimental urinary bladder carcinogenesis," Symposium on Tumors of the Urothelium, American Society of Cytology, Miami, Florida
7/11/79	"Morphological and biochemical markers of bladder cancer in man and animals," Department of Human Oncology Grand Rounds, Clinical Science Center, University of Wisconsin, Madison, Wisconsin
11/2/79	"Initiation and promotion of cancer," New England Cancer Society, Boston, Massachusetts
11/7 – 11/9/79	"Urinary bladder carcinogenesis with N-substituted aryl compounds: Initiation and promotion," International Conference on Carcinogenic and Mutagenic N-Substituted Aryl Compounds, Rockville, Maryland
12/10/79	"Urinary bladder cancer," Rush-Presbyterian-St. Luke's Medical Center, Chicago, Illinois
12/11/79	"Urinary bladder carcinogenesis," Northwestern University Medical School, Chicago, Illinois
3/12 – 3/15/81	"Promotion in urinary bladder carcinogenesis," International Symposium on Health Effects of Tumor Promotion, Cincinnati, Ohio
3/00/81	"Promotion of urinary bladder carcinogenesis," International Symposium on Organ and Species Specificity in Chemical Carcinogenesis, Raleigh, North Carolina
11/4/81	"Urinary bladder cancer," University of Baroda Medical School, Baroda, India

11/11 – 11/12/81	"Promotion in urinary bladder carcinogenesis," Symposium on Tumor Promotion, Nagoya, Japan
3/30 – 4/1/82	"Multistage carcinogenesis in the urinary bladder," Second International Conference on Carcinogenic and Mutagenic N-Substituted Aryl Compounds, Hot Springs, Arkansas
12/9 – 12/10/82	"A probabilistic model of carcinogenesis," Rush-Presbyterian-St. Luke's, Chicago, Illinois
1/5 – 1/8/83	"Diagnostic electron microscopy," Second National Bladder Cancer Conference, Sarasota, Florida
5/16 – 5/18/83	"Urinary bladder carcinogenesis," International Symposium on Role of Co-Carcinogens and Promoters in the Human and Experimental Carcinogenesis," Budapest, Hungary
5/5/83	"Multi-stage carcinogenesis in the urinary bladder," Scientific Review Panel on Saccharin: An Update, Duke University Medical Center, Durham, North Carolina
11/01 – 11/2/83	"Promotion in urinary bladder carcinogenesis," Environmental Health Seminar Series, University of Cincinnati, Cincinnati, Ohio
01/4 – 01/7/84	"Unmet needs and available models," Session Co-Chairman, Tenth National Bladder Cancer Project Investigators' Workshop, Sarasota, Florida
01/4 – 01/7/84	"Tumor dissemination," Session Chairman, Tenth National Bladder Cancer Project Investigators' Workshop, Sarasota, Florida
1/4 – 01/7/84	"Growth factors and membrane receptors in tumor growth and progression," Session Chairman, Tenth National Bladder Cancer Project Investigators' Workshop, Sarasota, Florida
5/3 – 5/4/84	"Aspirin inhibition of N-[4-(-nitro-2-furyl)-2-thiazolyl]formamide (FANFT) in urinary bladder carcinogenesis," Development of Cancer Chemopreventive Agents, National Cancer Institute, Gaithersburg, Maryland
10/15 – 10/18/84	"Saccharin: Past, present and future," 67th Annual Meeting of the American Dietetic Association, Washington, D.C.
1/8/86	"Effects of Different Salt Forms of Saccharin on the Rat Urinary Bladder," Meeting of the Saccharin Technical Committee, International Life Sciences Institute - Nutrition Foundation, Omaha, Nebraska

1/21/86	"Saccharin," International Life Sciences Institute – Nutrition Foundation, Annual Meeting of the Food, Nutrition and Safety Committee, meeting Dates: 01/20-01/23/86, Naples, Florida
3/20/86	"Urinary Bladder Carcinogenesis," National Institute of Hygienic Sciences, Tokyo, Japan
3/20/86	"Importance of cell proliferation in urinary bladder carcinogenesis," Urology and Biochemistry Divisions, National Cancer Center Research Institute, Tokyo, Japan
3/25/86	"Modifiers of carcinogenesis," U.S.-Japan Cooperative Cancer Research Program Seminar; Recent Advances in Bladder Cancer Research, meeting Dates: 03/24-03/25/86, Nagoya, Japan
3/26 – 3/29/86	"Effects of Urinary Parameters on Bladder Carcinogenesis," International Symposium and International Life Sciences Institute Histopathology Seminar on the Urinary System of Laboratory Animals, Nara, Japan
4/13 – 4/16/86	"Bladder Tumor Promotion," Non-genotoxic Mechanisms in Carcinogenesis, Banbury Center, Cold Spring Harbor Laboratory.
5/21/86	"Multi-stage Carcinogenesis in the Urinary Bladder: Rats, Humans and Computer Models," Northwestern University Cancer Center, Chicago, Illinois
5/21/86	"Importance of Cell Proliferation in Carcinogenesis," Department of Pathology, Northwestern University Medical School, Chicago, Illinois
6/9/86	"Bladder cancer in rats, humans and computers," Wisconsin Clinical Cancer Center, Department of Human Oncology, University of Wisconsin Medical School, Madison, Wisconsin
10/30/86	"Multi-Stage Carcinogenesis," Chemical Carcinogenesis/Molecular Biology Interface Working Session, sponsored by the Bladder Cancer Working Group of the Organ Systems Program, National Cancer Institute, Michigan Cancer Foundation, Detroit, Michigan
12/17/86	"Saccharin," Food and Drug Administration, Washington, D.C.
1/14/87	"Role of saccharin in bladder cancer research," Optimist Club Luncheon, Omaha, Nebraska
1/17/87	"Computer modeling in cancer research," Board of Regents, Lincoln, Nebraska
1/22/87	"Computer modeling in cancer research," University of Nebraska Medical Center Chancellor's Board of Counselors, Omaha, Nebraska

2/2/87	"Cancer: Cause and Prevention," Sertoma Club, Kearney, Nebraska
4/3/87	"Saccharin," Food and Drug Administration, Washington, D.C.
4/13/87	"Mechanistic Research on Bladder Carcinogenesis," International Life Sciences Institute-Nutrition Foundation, Washington, D.C.
9/21 – 9/22/87	"Cancer: Etiology and Pathogenesis," University of Massachusetts Medical School, Worcester, Massachusetts
9/24/87	"Saccharin Mechanistic Research," Sweetener Safety/Regulatory Symposium, Pepsi Somers Conference Center, Valhalla, New York
9/28/87	"Basic Research Directions," Moderator Chairman, Second International Consensus Development Conference on Guidelines for Clinical Research in Bladder Cancer, Hakone, Japan
9/28/87	"Carinoma in Situ," Second International Consensus Development Conference on Guidelines for Clinical Research in Bladder Cancer, Hakone, Japan
9/28/87	"Evaluation and Clinical Follow-Up," Second International Consensus Development Conference on Guidelines for Clinical Research in Bladder Cancer, Hakone, Japan
9/30/87	"Basic Research Directions," Moderator Chairman, Second International Consensus Development Conference on Guidelines for Clinical Research in Bladder Cancer, Hakone, Japan
10/2/87	"Genotoxic versus Non-Genotoxic Mechanisms of Carcinogenesis," National Cancer Institute, Tokyo, Japan
10/5/87	"Initiation and Promotion in Urinary Bladder Carcinogenesis," Nagoya City University Medical School, Nagoya, Japan
11/4/87	"Cell Growth in Long-Term Bladder Carcinogenesis," 17th Conference on Toxicology, Fairborn, Ohio
12/8/87	"Restructuring the Department of Pathology's Charge Capture System," Rush-Presbyterian-St. Luke's Medical Center, Chicago, Illinois
2/10/88	"Cell Growth Dynamics in Bladder Carcinogenesis: Implications for Risk Assessment," Brookings Institute, Washington, D.C.
5/3/88	"Saccharin," Symposium on Human Cancer Risk Assessment Based on Experimental Data, Wrightsville Beach, North Carolina

6/15/88	Forestomach Subgroup of the Carcinogenicity Working Group, International Life Sciences Institute, Risk Science Institute, Washington, D.C.
9/26 – 9/27/88	"Cancer: Etiology and Pathogenesis," University of Massachusetts Medical School, Worcester, Massachusetts
10/6/88	"The Role of Cell Dynamics in Multi-stage Carcinogenesis: Implications for Risk Assessment," Japanese Cancer Association Symposium, Contributions of Rodent Carcinogenesis Studies to Human Health, Nagoya, Japan
2/1/89	"Bladder Carcinogenesis: Non-genotoxic and Genotoxic Agents," University of Wisconsin Clinical Cancer Center, Department of Human Oncology, Madison, Wisconsin
2/28/89	"Toxic and Nontoxic Changes Induced in the Urothelium by Xenobiotics," Symposium II. Correlation Between Morphologic and Functional Changes Induced by Xenobiotics: "Is Every Change a Sign of Toxicity?," Society of Toxicology Meeting, Atlanta, Georgia
2/28/89	"The Relationship of Androgens/Estrogens to Proliferative Changes in the Prostate," Symposium II. Correlation Between Morphologic and Functional Changes Induced by Xenobiotics: "Is Every Change a Sign of Toxicity?," Society of Toxicology Meeting, Atlanta, Georgia
3/8/89	"Cell Proliferation and Its Implications for Risk Assessment," Mobay Corp., Kansas City, Missouri
3/22/89	"Overview of Initiation and Promotion; Genotoxic and Non-genotoxic Mechanisms of Carcinogenesis," The Biology of Bladder Cancer: The Potential Clinical Implications, Organ Systems Coordinating Center, Organ Systems Program, NCI, Bethesda, Maryland
3/31/89	"Morphologic Changes During Urinary Bladder and Kidney Carcinogenesis," Great Lakes Regional Discussion Group, Society of Toxicologic Pathologists, Spring Meeting, Madison, Wisconsin
6/17 – 6/22/89	"Cell Growth Dynamics and DNA Alterations in Carcinogenesis," Scientific Issues in Quantitative Cancer Risk Assessment, Societal Institute of the Mathematical Sciences, Snowbird, Utah
9/11 – 9/12/89	"Bladder Cancer," Immunology of Solid Tumors: Animal Models, Cancer Immunology Branch, Division of Cancer Biology and Diagnosis, NCI, Rockville, Maryland
9/18 – 9/22/89	"Update on Sweeteners – Saccharin," Toxicology Forum, Toulouse, France.

9/27 – 9/28/89	"Cancer: Etiology and Pathogenesis," University of Massachusetts Medical School, Worcester, Massachusetts
10/10 – 10/11/89	"Saccharin," International Life Sciences Institute, Washington, D.C.
11/1/89	"Role of cell proliferation and genotoxicity in bladder carcinogenesis: Implications for Risk Assessment," E. I. DuPont de Nemours and Co., Neward, Delaware
11/29 – 12/2/89	"Chemically Induced Cell Proliferation: Implications for Risk Assessment," Austin, Texas
4/9/90	"Sweet Daggers, Chemicals, Cells, and Cancer," University of Nebraska Medical Center, Omaha, Nebraska
5/23/90	"New Technology, Your Pathologist, and You," Workshop, American Association for Cancer Research, Washington, D.C.
9/20 – 9/21/90	"Cancer: Etiology and Pathogenesis," University of Massachusetts Medical School, Worcester, Massachusetts
10/1/90	"Bladder Cancer," Noble-Foundation, Inc., Fifth Annual Mid-America Molecular and Cellular Biology Colloquium, Ardmore, Oklahoma
10/15/90	"Saccharin," International Life Sciences Institute, Washington, D.C.
10/22/90	"Role of Cell Proliferation on the Dose Response of Genotoxic and Nongenotoxic Carcinogens," 1990 Drug Safety Meeting, Pharmaceutical Manufacturers Association, Tampa, Florida
11/8/90	"Two-stage Models of Carcinogenesis: Applications and Implications in Risk Assessment," National Research Council, Committee on Risk Assessment Methodology (CRAM), Washington, D.C., 1990
12/7/90	"Relevance of Animal Studies to Evaluate Human Cancer Risk," University of Texas, M.D. Anderson Cancer Center-Science Park. Barton Creek Conference Resort, Austin, Texas
12/12/90	"Saccharin," International Life Sciences Institute, Washington, D.C.
12/13/90	"Saccharin," Federal Drug Administration, Washington, D.C.
12/13/90	"Biological Models and Risk Assessment," Federal Drug Administration, Washington, D.C.
12/18/90	"Cell Proliferation in Carcinogenesis," First Department of Pathology, Nagoya City University Medical School, Nagoya, Japan

12/18/90	"Cell Proliferation in Carcinogenesis," First Department of Pathology, Osaka City University Medical School, Osaka, Japan
12/19/90	"Cell Proliferation in Carcinogenesis: Implications for Risk Assessment," Food and Drug Administration, Rockville, Maryland
2/6/91	"Cell Proliferation in Carcinogenesis: Implications for Risk Assessment," Food and Drug Administration, Rockville, Maryland
2/26/91	"Simvastatin: Risk Evaluation," Merck Sharp and Dohme Research Laboratories, West Point, Pennsylvania
3/8/91	"Simvastatin," Food and Drug Administration, Rockville, Maryland
3/26 – 3/28/91	"Cell Proliferation, Genotoxicity, and Carcinogenesis," Fourth International Symposium, Fundamental and Clinical Research in Urogenital Cancer, Foundation for Promotion of Cancer Research, Tokyo, Japan
4/24/91	"Solid Wastes and Toxics," Nebraska Wesleyan University, Lincoln, Nebraska
6/11 – 6/14/91	"Cell Proliferation in Mutagenesis and Carcinogenesis," Gordon Conference-Genetic Toxicology, Colby-Sawyer College, New London, New Hampshire
8/26/91	"Of Mice and Men: Carcinogenesis and Risk Assessment," NIEHS, Research Triangle Park, North Carolina
9/5/91	"Cancer Modeling," Harvard University, Boston, Massachusetts
9/19 – 9/20/91	"Cancer: Etiology and Pathogenesis," University of Massachusetts Medical School, Worcester, Massachusetts
9/22 – 9/23/91	"Classification of 3,4'methylene *bis*(2-chloraniline) (MOCA)," American Conference of Governmental Industrial Hygienists Threshold Limit Values Committee, Cincinnati, Ohio
10/10/91	"Chemicals, Biology and Potential Cancer Risk," American Chemical Society, Anaheim, California
11/11/91	"Genetic Alterations and Cell Proliferation in Chemical Carcinogenesis," National Cancer Institute-Frederick, Frederick, Maryland
11/20/91	"Cell Proliferation and Carcinogenesis: Implications for Risk Assessment," Merck Sharp and Dohme Research Laboratories, West Point, Pennsylvania

12/05 – 12/06/91	"Biological Theory of Carcinogenesis and Characteristics of Bladder Tumors from Mutagenic and Nonmutagenic Compounds," International Life Sciences Institute Risk Science Institute Cancer Dose-Response Working Group, Herndon, Virginia
1/13 – 1/16/92	"Modeling Urinary Bladder Carcinogenesis Using Cell Proliferation Data," NIEHS Symposium on Cell Proliferation and Carcinogenesis, Research Triangle Park, Raleigh-Durham, North Carolina
3/10/92	Seminar, "Of Mice and Men: A Biological Basis for Carcinogenesis Risk Assessment," Kansas University Medical Center, Kansas City, Kansas
3/24/92	Nagoya City Seminar, "Genetic Errors, Cell Proliferation and Carcinogenesis," Nagoya, Japan
3/27/92	Tokushima Lectureship, "Saccharin: A Rat Bladder Carcinogen," Fuji-Otsuka Lecture at University of Tokushima, College of Medicine, Tokushima, Japan
4/07 – 4/8/92	FASEB Meeting, "Saccharin and urothelial proliferation: A threshold phenomenon," Anaheim, California
4/15/92	"Saccharin," International Life Sciences Institute-North America, Saccharin Committee Meeting, Washington, D.C.
4/16/92	"Saccharin is a rat carcinogen," Food and Drug Administration, Beltsville, Maryland
4/21/92	"Is saccharin a human carcinogen?," Osaka City University Medical School, Osaka, Japan
4/22 – 4/24/92	"Bladder calculi and proliferative effects on bladder carcinogenesis," First International Federation of Societies of Toxicologic Pathologists, Nagoya, Japan
5/5/92	"Propoxur," U.S. Environmental Protection Agency, Arlington, Virginia
7/2 – 7/9/92	"Cell Division in Dose-Response Models," ETH and University of Zurich, Zurich, Switzerland
8/26/92	"Urine physiology and chemistry," Rodent Bladder Carcinogenesis Working Group, International Life Sciences Institute/Environmental Protection Agency, Washington, D.C.
9/10/92	"Cancer Modeling," Harvard University, Boston, Massachusetts
9/22/92	"The Interpretation of Rodent Bioassays," International Life Sciences Institute, Brookings Institute, Washington, D.C.

9/24 – 9/25/92	"Cancer Etiology and Pathogenesis," University of Massachusetts School of Medicine, Worcester, Massachusetts
11/6 – 11/7/92	"Role of Cell Proliferation in Carcinogenesis," Fred Hutchinson Cancer Research Center, Seattle, Washington
11/9/92	"Current Trends in Food Safety Evaluation," Calorie Control Council Annual Meeting, LaJolla, California
2/10/93	"Role of Toxicologic Pathology in Safety Assessment," National Research Council Environmental Studies and Toxicology, Washington, D.C.
3/16/93	"Recent Results of Research Concerning the Carcinogenicity of Saccharin," Environmental Protection Agency, Washington, D.C.
4/16/93	"Risk Assessment Based on High Dose Animal Exposure Experiments," Central States Chapter Society of Toxicology, Creighton University, Omaha, Nebraska
4/19 – 4/20/93	"Importance of Toxicologic Pathology in Determining Mechanisms for Risk Assessment Extrapolations," International Life Sciences-Japan, Symposium, Tokyo, Japan
4/21/93	"Applications of Pathology to Risk Assessment: The Sodium Saccharin Case," Sumitomo Chemical Co., Osaka, Japan
4/27/93	"Chemical Carcinogenesis," University of Kansas Medical Center Mid-America Toxicology Course, Kansas City, Missouri
4/29/93	"Mechanistic Research on Bladder Cancer," International Life Sciences Saccharin Committee Meeting, Washington, D.C.
5/3/93	"Cell Proliferation, Genetics and Carcinogenesis," Northwestern University Medical School, Chicago, Illinois
5/24/93	University of Nebraska Medical Center Overview Presentation, Rotary Club, Ashland, Nebraska
6/24/93	University of Nebraska Medical Center Overview Presentation, Rockbrook Rotary Club, Omaha, Nebraska
6/29 – 6/30/93	"Mechanistic Studies of Bladder Tumors Associated with Sodium Saccharin in the Rat," Ottawa, Canada
9/7/93	"Replication Errors and Cancer," Genetics Interest Group, University of Nebraska Medical Center, Omaha, Nebraska

9/14/93	"Biological Models for Carcinogenesis Risk Assessment," Toxicology Round Table Meeting, Washington, D.C.
9/20/93	"Cell Kinetics and Carcinogenesis," Department of Anatomy and Cell Biology, University of Nebraska Medical Center, Omaha, Nebraska
9/27/93	"Cancer Etiology and Pathogenesis," University of Massachusetts School of Medicine, Worcester, Massachusetts
9/29/93	"Advances in Cancer Modeling," Harvard University, Boston, Massachusetts
10/22 – 10/24/93	"Bladder Cancer: New Concepts in Biology and Therapy," NIH-sponsored Bladder Cancer Conference, Prout's Neck, Maine
11/2 – 11/4/93	"Cell Proliferation in the Bladder and Implications for Cancer Risk Assessment," Health Effects Research Laboratory (HERL) Symposium on Biological Mechanisms in Quantitative Risk Assessment, Research Triangle Park, North Carolina
1/18/94	"Genetic Errors, Cell Proliferation, and Carcinogenesis Risk Extrapolation," Risk Assessment in Environmental Carcinogenesis, American Association for Cancer Research, Whistler, British Columbia, Canada
1/24/94	"Saccharin: Rodent Bioassays and Human Risk," Washington State University, Pullman, Washington
2/18/94	"Advances in Cancer Modeling," National Institute for Occupational Safety and Health (NIOSH), sponsored by the Cincinnati Carcinogenesis and Mutagenesis Consortium, Cincinnati, Ohio
3/23 – 3/24/94	"Human Relevance of Animal Carcinogenicity Studies," Symposium on Design and Interpretation of Animal Carcinogenicity Studies, Great Lakes Region Discussion Group Meeting of the Society of Toxicologic Pathologists, Cincinnati, Ohio
4/6/94	"Biological Mechanisms in Carcinogenesis Risk Assessment," Department of Pathology, Osaka City University, Osaka, Japan
4/13 – 4/15/94	"A non-DNA reactive mechanism involving urothelial proliferation," U.S.-Environmental Protection Agency and California-Environmental Protection Agency, San Francisco, California
4/26/94	"Chemical Carcinogenesis," University of Kansas Medical Center Mid-America Toxicology Course, Kansas City, Missouri

5/24/94	"Saccharin, Vitamin C and Bladder Cancer," Veterans Administration Medical Center, Omaha, Nebraska
6/6/94	"Relationship of DNA Adducts Derived from 2-AAF to Cell Proliferation and the Induction of Rodent Liver and Bladder Tumors," 13th International Symposium, Role of Drug Metabolism and Pharmacokinetics in Toxicologic Pathology, Society of Toxicologic Pathologists, Charleston, South Carolina
9/7/94	"Biologic Approaches to Bioassay Interpretation," Pharmaceutical Research and Manufacturers of America (PhRMA), Washington, D.C.
9/28/94	"Cancer Etiology and Pathogenesis," University of Massachusetts School of Medicine, Worcester, Massachusetts
9/29 – 9/30/94	"Advances in Cancer Modeling," Harvard University, Boston, Massachusetts
10/24/94	"Biological Basis for Risk Assessment," American College of Toxicology, Willliamsburg, Virginia
1/20/95	"DNA Replication, DNA Damage and Carcinogenesis," Vanderbilt University School of Medicine, Nashville, Tennessee
4/9/95	"Urinary Bladder Carcinogenesis and Cancer Prevention," Experimental Biology (FASEB), Atlanta, Georgia
4/25/95	"Chemical Carcinogenesis," University of Kansas Medical Center Mid-American Toxicology Course, Kansas City, Missouri
7/3/95	"Role of Cell Proliferation in Regenerative and Neoplastic Disease," International Congress on Toxicology VII, Symposium on "Cell Proliferation: Biological Effects and Carcinogenic Risk Assessment," Seattle, Washington
9/13/95	"The role of urinary physiology and chemistry in urothelial toxicity and carcinogenicity," Histopathology Seminar, International Life Sciences Institute, Hannover, Germany
9/14/95	"Urinary calculi, crystals, and precipitate and the role of increased cell proliferation in carcinogenesis," Histopathology Seminar, International Life Sciences Institute, Hannover, Germany
9/25 – 9/26/95	"Cancer Etiology and Pathogenesis," University of Massachusetts School of Medicine, Worcester, Massachusetts
9/27/95	"Advances in Cancer Modeling," Harvard University, Boston, Massachusetts

10/6/95	"Saccharin – A case study," Federal Focus, Inc., London, England
12/4/95	"Laboratory Investigations of Dietary Carcinogens," Netherlands Food Council, Leiden, The Netherlands
12/5/95	"Conclusions and Recommendations Reached by the NRC/NAS Committee," Netherlands Food Council, Leiden, The Netherlands
2/15/96	"Carcinogens and Anticarcinogens in the Human Diet," United States Congress, Washington, D.C.
2/15/96	"Carcinogens and Anticarcinogens in the Human Diet," National Academy of Sciences, Washington, D.C.
2/19/96	"Cell Proliferation and Carcinogenesis: Implications for Risk Assessment," University of Arizona, Southwest Environmental Health Science Center, Tucson, Arizona
4/23/96	"Chemical Carcinogenesis," University of Kansas Medical Center Mid-America Toxicology Course, Kansas City, Missouri
5/6/96	"Comments on Proposed EPA Cancer Risk Assessment Guidelines," Environmental Protection Agency, Washington, D.C.
6/25/96	"Cell Proliferation and Carcinogenesis," University of Pittsburgh, Pittsburgh, Pennsylvania
8/6/96	"Chemical Carcinogenesis: Implications for Dose and Species Extrapolations," American Industrial Hygiene Association (AIHA).
9/23 – 9/24/96	"Cancer Etiology and Pathogenesis," University of Massachusetts School of Medicine, Worcester, Massachusetts
9/30/96	"Tributylphosphate," United States Environmental Protection Agency, Tributylphosphate Task Force, EPA, Washington, D.C.
1/10/96	"Cell Proliferation and Carcinogenesis":, Arkansas Symposium, Understanding the Causes of Aging and Cancer, Little Rock, Arkansas
11/8/96	"Mechanisms of Carcinogenesis," 13th Annual Meeting, Central States Chapter Society of Toxicology (SOT), Kansas City, Kansas
2/5 – 2/6/97	"Update on Saccharin Safety," ISA/CIFTI Seminar on Low-Calorie Sweeteners, New Delhi, India
4/22/97	"Recent investigations on bladder cytotoxicants and mitogens and their relationship to carcinogenesis," Osaka City University Medical School, Osaka City, Japan

4/24/97	"The role of urinary physiology and chemistry in urothelial toxicity and carcinogenicity," International Life Sciences Institute Nara International Symposium and Histopathology Seminar on the Urinary System of Laboratory Animals, Nara, Japan
4/25/97	"Urinary calculi, crystals, and precipitate and the role of increased cell proliferation in carcinogenesis," International Life Sciences Institute Nara International Symposium and Histopathology Seminar on the Urinary System of Laboratory Animals, Nara, Japan
5/1/97	"Experimental models for the study of mechanisms of chemical carcinogenesis," 21st Brazilian Congress of Pathology, Brasilia, Brazil.
5/2/97	"Mechanisms of chemical carcinogenesis," 21st Brazilian Congress of Pathology, Brasilia, Brazil
5/5/97	"Chemical carcinogenesis," State University of Sao Paulo, Botucatu, Brazil
5/6/97	"Risk Factors for Human Cancer," State University of Sao Paulo, Botucatu, Brazil
5/19/97	"Saccharin," Food and Drug Administration, Washington, D.C.
5/21/97	"Fundamentals of Carcinogenesis," Expert Panel on Arsenic Carcinogenicity, Environmental Protection Agency, Washington, D.C.
6/25/97	"Urinary Bladder Carcinogenesis," 16th Annual Symposium, Society of Toxicologic Pathologists, Beaver Creek, Colorado
7/28/97	"Chemical Carcinogenesis: Implications for Dose and Species Extrapolations," AIHA Toxicology Symposium, Seattle, Washington
9/9/97	Environmental Protection Agency-FIFRA-Scientific Advisory Panel, Arsenic Presentation, Arlington, Virginia
4/21/98	"Chemical Carcinogenesis," University of Kansas Medical Center Mid America Toxicology Course, Kansas City, Missouri
7/6/98	"Cell Proliferation and Carcinogenesis," International Union of Toxicology (IUTOX) Continuing Education Course, Paris, France
7/14/98	"Evaluation of cell proliferative activity in the rat urinary bladder after feeding high doses of cacodylic acid," Society of Environmental Geochemistry and Health (SEGH), Arsenic Conference, San Diego, California

8/19/98	"Saccharin," International Life Sciences Institute, Saccharin Technical Committee, Washington, D.C.
11/9/98	"Carcinogenesis," Osaka City University Medical School, Osaka, Japan
11/9/98	"Bladder Carcinogenesis," Osaka City University Medical School, Osaka, Japan
11/17/98	"Cell Proliferation as the Basis for Carcinogenesis of Non-Genotoxic Chemicals," Alternative Bioassays for Carcinogen Detection, 5th Congresso Latino-Americano De Mutagenese, Carcinogenese E Teratogenese Ambiental, Curitiba, Parana, Brazil
11/19/98	"Methods for Evaluating Cell Proliferation," 5th Alexander Hollaender Training Course in Genetic Toxicology, Curitiba, Parana, Brazil
12/2/98	"Saccharin," Health Protection Branch, Ottawa, Canada
1/25/99	"The Use of Animal Data in Risk Assessment," International Life Sciences Institute Risk Science Institute Advisors' Forum, Nassau, Bahamas
1/26/99	"Saccharin," International Life Sciences Institute Food, Nutrition and Safety Committee, Nassau, Bahamas
2/10/99	"Relationship of Apoptosis and Necrosis to Carcinogenesis," Apoptosis Working Group, International Life Sciences Institute-North America Technical Committee on Food Toxicology and Safety Assessment and the Proposition 65 Technical Committees' Joint Subcommittee on Apoptosis, Washington, D.C.
3/16/99	"SOT/EUROTOX Debate: The Results of Mechanistic Toxicity Studies Should Supercede Ambiguous Epidemiological Data," Society of Toxicology, New Orleans, Louisiana
4/27/99	"Chemical Carcinogenesis," Midwest Toxicology Course, Kansas City, Missouri
4/28/99	"Cell Proliferation and Carcinogenesis: Implications for Risk Assessment," Michigan Society of Toxicology, Lansing, Michigan
6/29/99	"SOT/EUROTOX Debate: The Results of Mechanistic Toxicity Studies Should Supercede Ambiguous Epidemiological Data," EUROTOX Meeting, Oslo, Norway
8/12/99	"Carcinogenesis: Of Mice and Men," American Industrial Hygiene Association, 14th Annual Toxicology Symposium, Williamsburg, Virginia

12/16 – 12/18/99	"Lesions of the Bladder I – Structure/Spontaneous/Induced Changes; Lesions of the Bladder II – Proliferative/Dysplastic Changes; Lower Urinary Tract Conditions – Practical; Human LUT Pathology," British Society of Toxicological Pathologists, Cambridge, England
1/10/00	"Apoptosis and its implications for toxicity, carcinogenicity and risk: Fumonisin B_1 as an example," Fumonisins Risk Assessment Workshop, Food and Drug Administration, Washington, D.C.
1/19/00	"Fetal Cell Research: Science and Politics," University of Nebraska Medical Center, Board of Counselors Annual Meeting, Omaha, Nebraska
2/23/00	"Fetal Tissue Research," Judiciary Committee Testimony, Lincoln, Nebraska
3/9/00	"Fetal Tissue Research," Testimony to the Health and Environment Subcommittee of the Commerce Committee, United States House of Representatives, Washington, D.C.
3/21/00	"Saccharin: Overview and History," Society of Toxicology, Philadelphia, Pennsylvania
3/21/00	"Saccharin: Epidemiology," Society of Toxicology, Philadelphia, Pennsylvania
3/22/00	"Apoptosis and its implications for toxicity, carcinogenicity and risk: Fumonisin B_1 as an example," Society of Toxicology, Philadelphia, Pennsylvania
4/20/00	"Isocyanuric acid," U.S. Environmental Protection Agency, Washington, D.C.
5/2/00	"Chemical carcinogenicity," Mid-America Toxicology Course, Kansas City, Missouri
6/20/00	"The carcinogenicity of dimethylarsinic acid (DMA) in rats," Fourth International Conference on Arsenic Exposure and Health Effects, San Diego, California
6/22/00	"Research needs to refine MCL," Fourth International Conference on Arsenic Exposure and Health Effects, San Diego, California
6/24/00	"Comparative pathology of proliferative lesions of the urinary bladder in man, rat and mouse," National Toxicology Program Satellite Symposium to annual meeting of Society of Toxicologic Pathologists, Phoenix, Arizona

7/18/00	Bioethics Panel, University of Nebraska Medical Center, Omaha, Nebraska
7/28/00	"Difficult ethical and political issues facing tissue brokers," Association of Pathology Chairs, Boulder, Colorado
10/12/00	Mentoring Institute, University of Nebraska Medical Center, Omaha, Nebraska
10/17/00	Introduction, Comparative Pathology of Carcinogenesis Symposium, International Academy of Pathology, Nagoya, Japan
10/17/00	"The two diseases of bladder cancer in rodents and humans," Comparative Pathology of Carcinogenesis Symposium, International Academy of Pathology, Nagoya, Japan
10/23/00	"Recent advances in urinary bladder carcinogenesis research," Takeda Chemical Industries, Ltd., Osaka, Japan
10/24/00	"Carcinogenicity of dimethylarsinic acid," Osaka City University, Osaka, Japan
11/3/00	"Weight of evidence evaluation across models," International Life Sciences Institute Alternatives to Carcinogenicity Testing Workshop, Leesburg, Virginia
11/9/00	"Human relevance case studies: What have we learned?" International Programme on Chemical Safety/International Life Sciences Institute, London, England
1/22/01	"The dose makes the poison: Did Paracelsus throw us a curve?," International Life Sciences Institute 2001 Annual Meeting, Montego Bay, Jamaica
1/22/01	"What do the data tell us?," International Life Sciences Institute 2001 Annual Meeting, Montego Bay, Jamaica
1/22/01	"Alternatives to Carcinogenicity Testing: Why Bother?," International Life Sciences Institute 2001 Annual Meeting, Montego Bay, Jamaica
1/29/01	"Use of Pathology in Risk Assessment," Expert Panel of the Flavor and Extract Manufacturers Association (FEMA), Miami, Florida
2/9/01	"Fetal Cell Research," Testimony to State of Nebraska Legislative Judiciary Committee, Lincoln, Nebraska
3/29/01	"Summary of findings across the models examined in the ILSI-HESI evaluation of alternatives for carcinogenicity testing," Workshop on Use

of Transgenic Models for Carcinogenicity Testing—A Data-Based Evaluation. Society of Toxicology, San Francisco, California

3/29/01 "Introduction," Workshop on Risk Assessment: Science, Regulation and Legislation. Society of Toxicology, San Francisco, California

4/17/01 "Fetal Cell Research," Testimony to Omaha City Council, Omaha, Nebraska

4/24/01 "Chemical Carcinogenesis," Mid-America Toxicology Course, Kansas City, Missouri

12/4/01 "UNMC Rapid Autopsy Program," State Legislature, Lincoln, Nebraska

4/23/02 "Chemical Carcinogenesis," Mid-America Toxicology Course, Kansas City, Missouri

7/17/02 "Carcinogenicity of dimethylarsinic acid in rats," Fifth International Conference on Arsenic Exposure and Health Effects, San Diego, California

9/25/02 "All models are wrong; some are useful," Aventis Pharmaceuticals, Bridgewater, New Jersey

10/14/02 "Ethics of Stem Cell Research – The Pathologists' Perspective," College of American Pathologists Annual Meeting, Washington, D.C.

10/18/02 "Alternatives to carcinogenicity testing," Schering-Plough Corporation, Morristown, New Jersey

12/10/02 "Analysis of mode of action of carcinogenesis in animal models," International Life Sciences Institute Society for Risk Analysis Symposium, New Orleans, Louisiana

1/20/03 "Cancer causation," International Life Sciences Institute Annual Meeting, Miami, Florida

1/28/03 "Cancer causation: Of mice (and rats) and men," Fujita-Gakuen University, Nagoya, Japan

1/30/03 "Transgenic mice as alternative models for carcinogenicity testing," Daiyu-Kai Symposium, Nagoya, Japan

3/11/03 "Mode of action in assessing human relevance of animal tumors," Society of Toxicology Symposium, Salt Lake City, Utah

4/23/03	"Special study to characterize the changes in the lower urinary tract of rats associated with chronic administration of LY519818," Eli Lilly and Company, Greenfield, Indiana
4/29/03	"Chemical Carcinogenesis," Mid-America Toxicology Course, Kansas City, Missouri
6/16/03	"Risk assessment in the genomic era," Society of Toxicologic Pathology, Savannah, Georgia
9/23/03	"Carcinogenesis: of mice and men," New York Medical College, Valhalla, New York
12/11/03	"Lesions of the Bladder I – structure/spontaneous/induced changes," British Society of Toxicologic Pathology, Cambridge, England
12/11/03	"Lesions of the Bladder II – proliferative/dysplastic changes," British Society of Toxicologic Pathology, Cambridge, England
12/11/03	"Lesions of the Bladder – Practical," British Society of Toxicologic Pathology, Cambridge, England
12/11/03	"Human urinary tract pathology and drug development," British Society of Toxicologic Pathology, Cambridge, England
1/14/04	"Carcinogenicity of methylated arsenicals," U.S. Environmental Protection Agency, Alexandria, Virginia
1/23/04	"Urinary bladder carcinogenicity of pioglitazone in rats," French Drug Agency (AFSSAPS), Paris, France
2/9/04	"Human risk of environmental chemicals: Man is not a rat or a mouse," National Cancer Center, Tokyo, Japan
2/12/04	"Urinary bladder carcinogenesis: Aromatic amines to arsenic," Nagoya City University, Nagoya, Japan
2/17/04	"Human relevance of carcinogenesis in rodents," Plenary Lecture, International Society of Toxicologic Pathology, Kobe, Japan
2/20/04	"Urinary bladder carcinogenesis," Takeda Chemical Company, Osaka, Japan
7/22/04	"Alternatives to the 2-year bioassay in detecting potential risk of chemical carcinogens," Toxicology Forum, Aspen, Colorado.
7/27/04	"Flonicamid," Environmental Protection Agency, Washington, D.C.

7/28/04	"Arsenic," Environmental Protection Agency, Washington, D.C.
9/15/04	"Bladder carcinogenesis -- a 40-year sojourn," Pathology/Microbiology Grand Rounds, University of Nebraska Medical Center, Omaha, Nebraska
9/17/04	"Toxicological testing versus science," Central States Chapter, Society of Toxicology, Kansas City, Kansas
9/24/04	"Urinary bladder carcinogenesis: Rodents and humans," Roche Pharmaceutical Company, Basel, Switzerland
10/12/04	"Pioglitazone," CHMP Science Working Party, London, England
3/3/05	"Flonicamid: Evaluation of the relevance of mouse lung tumors to humans," Brazilian Ministry of Health, Brasilia, Brazil.
3/8/05	"Framework for Evaluating the Human Relevance of Carcinogenetic Modes of Action in Animals," Society of Toxicology, New Orleans, Louisiana
3/19/05	"Bladder Urothelial Tumors," National Comprehensive Cancer Network, Hollywood, Florida
4/21/05	"Human Relevance Framework," International Programme on Chemical Safety (WHO), Bradford, England
4/26/05	"Chemical Carcinogenesis," Mid-American Toxicology Course, Kansas City, Missouri
5/11/05	"Mechanisms of Bladder Carcinogenicity," American College of Toxicology, Lincolnshire, Illinois
5/20/05	"Bladder Carcinogenesis: From Rodents to Humans," C.L. Davis Seminar, Bridgewater, New Jersey
9/9/05	"Bladder Carcinogenesis: from Rodents to Humans," for Glaxo-Smith Kline (by video)
9/12/05	"Arsenic Carcinogenesis," U.S. EPA Science Advisory Board, Washington, D.C.
9/30/05	"PPAR Agonists and Bladder Cancer," International Life Sciences Institute/Health and Environmental Sciences Institute Committee on PPAR Agonists, Washington, D.C.
10/11/05	"Cancer: Recent Aspects in Human Risk Assessment," XIV Brazilian Congress of Toxicology, Recife, Brazil

10/12/05	"An Alternative to the 2-Year Rodent Bioassay," XIV Brazilian Congress of Toxicology, Recife, Brazil
10/28/05	"Bladder Carcinogenesis in Animals and Humans: It's All in the Details," Merck Seminar Series Co-Sponsored with the Toxicology Seminar Series, University of Illinois at Urbana-Champaign, Urbana, Illinois
11/15/05	"Framework for Evaluating the Human Relevance of Carcinogenic Modes of Action in Animals," International Life Sciences Institute/Health and Environmental Sciences Institute, Rodent Liver Tumor Session, Nice, France
11/15/05	"Liver Cytotoxicity as a Mode of Action," International Life Sciences Institute/Health and Environmental Sciences Institute, Rodent Liver Tumor Session, Nice, France
2/9/06	"Carcinogenesis: Human Relevance of Animal-derived Data," Roche, Palo Alto, California
3/7/06	"Carcinogenicity of Arsenicals in Human and Animal Models," Workshop on Arsenic Toxicology, Society of Toxicology, San Diego, California
4/25/06	"Chemical Carcinogenesis," Mid-America Toxicology Course, Kansas City, Missouri
5/31/06	"Arsenic-induced Bladder Cancer in an Animal Model," U.S. EPA Workshop on Arsenic Research and Risk Assessment, Shepherdstown, Pennsylvania
6/17/06	"Urinary Bladder Lesions," NTP Symposium, Vancouver, British Columbia
6/18/06	"The Human Relevance of Urothelial Tumors in Rodents," Society of Toxicologic Pathology, Vancouver, British Columbia
7/4/06	"Carcinogenic Modes of Action of PPAR Agonists: the HESI Initiative," Japanese Society of Toxicology, Nagoya, Japan
7/5/06	"PPAR Agonists and Carcinogenesis," Nagoya City University, Nagoya, Japan
7/6/06	"PPAR Agonists and Carcinogenesis," Eisai Pharmaceuticals, Gifu, Japan
8/1/06	"PPAR Agonists and Carcinogenesis," Sanofi-Aventis, Great Valley, Pennsylvania

10/23/06	"Urothelial Carcinoma: Two Diseases," Cancer Molecular Diagnosis and Gene Therapy: 2006 International Symposium, Xi'an Jiaotang Medical University, Xi'an, China
10/27/06	"Urothelial Carcinoma: Two Diseases," Fourth Chinese Conference on Oncology, Tianjin, China
10/30/06	"Urinary Bladder Cancer Pathology," Beijing Association of Pathologists, Beijing, China
11/30/06	"Carcinogenicity of Arsenicals," U.S. EPA, Washington, D.C.
12/13/06	"Hyperplasia and Carcinogenesis," Proctor & Gamble Pharmaceuticals, Inc., Cincinnati, Ohio
2/15/07	"Mechanism-Based Cancer Risk Assessment," Society of Toxicology Current Concepts in Toxicology, Arlington, Virginia
4/24/07	"Chemical Carcinogenesis," Mid-America Toxicology Course, Kansas City, Missouri
5/14/07	"Of Mice and Men: Extrapolating from Animal Models to Humans for Cancer Risk Assessment". Alfred I. duPont, Hospital for Children, Wilmington Delaware
7/12/07	"Inorganic and Organic Arsenics and Bladder Carcinogenesis," Toxicology Forum, 33rd Annual Meeting, Aspen, Colorado
8/29/07	"Carcinogenicity Data in Mice", HESI PPAR Agonist Project Committee, Sarcomas Data Sharing Meeting, Washington, DC
9/16/07	"The Human Relevance of Urothelial Tumors in Rodents", International Academy of Toxicologic Pathology Satellite Symposium, Basel, Switzerland
9/18/07	"An Enhanced 13 Week Bioassay: An Alternative to the Two-Year Bioassay to Screen for Human Carcinogenesis," European Society of Toxicologic Pathology/ International Federation of Toxicologic Pathology Congress of Toxicologic Pathology 2007, Basel, Switzerland
10/05/07	"Chemical Carcinogenesis", International Workshop on Toxicology Towards Diplomate of American Board of Toxicology, Bangalore, India
11/08/07	"Mouse Liver Tumors: Benefits and Constraints on Use in Human Health Risk Assessment, Qualitative and Quantitative Aspects," Third Workshop of the Standing Committee on Risk Analysis Issues and Reviews. National Academy of Sciences, Washington DC

11/22/07	"An Enhanced Thirteen Week Bioassay: An Alternative for Screening for Carcinogenesis Factors," DIMS 30th Anniversary Symposium, Nagoya, Japan
11/26/07	"The Human Relevance of Urothelial Tumors in Rodents," Japan Bioassay Research Center, Hadano, Japan
11/27/07	"Liver Carcinogenesis: Human Relevance of Animal Tumors," Sumitomo Chemical Co., Osaka, Japan
2/6/08	"A Framework of Human Relevance Analysis of Information of Carcinogenic Modes of Action in Animals," Japanese Society of Toxicologic Pathology, Nagoya, Japan
2/8/08	"PPAR Agonists and Bladder Carcinogenesis," Dainippon Sumitomo Pharma, Osaka, Japan
4/22/08	"Chemical Carcinogenesis", Mid-America Toxicology Course, Kansas City, Missouri
6/19/08	"Carcinogenicity of Arsenic," Institute of Medicines Committee on Review of the Health Effects in Vietnam Veterans of Exposure to Herbicides, San Antonio, Texas
7/23/08	"Thresholds in Genotoxicity and Carcinogenicity: Urniary Bladder Carcinogenesis", International Symposium on Genotoxic and Carcinogenic Thresholds, Tokyo, Japan
7/24/08	"Evaluation of the Human Relevance of Animal Studies for Cancer Risk Assessment", Food Safety Commission of Japan, Tokyo, Japan
7/25/08	"Rats and Mice are not Small Humans; Human Risk Assessment Based on Animal Studies", Food Safety Commission of Japan, Public Session, Tokyo, Japan
8/18/08	"Current Concepts in Carcinogenesis and Susceptibility: What do we know about Bladder Cancer", BCAN's Bladder Cancer Research Network Think Tank, Quebec, Canada
8/18/08	"What Can Animal Models Teach Us About Human Bladder Cancer", BCAN's Bladder Cancer Research Network Think Tank, Quebec, Canada
12/4/08	"Troglitazone Effects on Endothelial Cells In Vivo and In Vitro: Differences Between Mice and Humans", SOT Contemporary Concepts in Toxicology Workshop, Hemangiosarcoma in Rodents: Mode of Action Evaluation and Human Relevance, Arlington, VA.

1/28/09 "Carcinogenicity of PPARγ and Dual α/γ Agonists: Mode of Action and Human Relevance." Planary Lecture, Japanese Society of Toxicologic Pathology. Hamamatsu, Japan.

1/30/09 "Carcinogenicity of PPAR Agonists: Are They Rodent Specific Carcinogens?" Nagoya City University Medical School. Nagoya, Japan.

3/15/09 "The Development and Significance of Mode of Action/Human Relevance Analysis. Characterizing Modes of Action and Their Relevance in Assessing Human Health Risks". Society of Toxicology Continuing Education Course, Baltimore, Maryland.

3/23/09 "How Predictive Are 3M, 6M, and Transgenic Studies for Carcinogenic Risk". British Toxicology Society, University of Warwick, Warwick, England.

3/23/09 "Relevance of Rodent Bladder Carcinogens to Man". British Toxicology Society, University or Warwick, Warwick, England.

4/2/09 "Bladder Practical". Modular Education Programme in Toxicological Pathology., Module 14: Urinary System, Cambridge University, Cambridge England.

4/2/09 "Lesions of the Bladder Proliferative/Dysplastic Changes". Modular Education Programme in Toxicological Pathology., Module 14: Urinary System, Cambridge University, Cambridge England.

4/2/09 "Lesions of the Bladder. Structure/Spontaneous/Induced Changes". Modular Education Programme in Toxicological Pathology., Module 14: Urinary System, Cambridge University, Cambridge England.

4/2/09 "Human Urinary Tract Pathology and Drug Development". Modular Education Programme in Toxicological Pathology., Module 14: Urinary System, Cambridge University, Cambridge England.

4/21/09 "Chemical Carcinogenesis". Mid-America Toxicology Course, Kansas City, Missouri.

4/28/09 "Urothelial Carcinogenesis in Experimental Models and Humans". University of San Paulo, Botucatu, Brazil.

4/30/09 "Human Relevance of Experimentally Induced Rodent Tumors". State University of San Paulo, Botucatu, Brazil.

1/26/10 "Mode of Action Human Relevance Framework". International Life Sciences Institute Annual Meeting, Rio Grande, Puerto Rico.

1/28/10	"Relevance of Arsenic Mode of Action for Human Carcinogenicity". Arsenic Workshop and EPRI Scientific Review Panel, Hamner Institute for Health Sciences, Research Triangle Park, North Carolina.
2/26/10	"Inorganic Arsenic". US EPA, Washington, DC.
4/6/10	"Inorganic Arsenic Carcinogenesis, Mode of Action". US EPA Sciences Advisory Board Special Panel, Washington, DC.
4/27/10	"Chemical Carcinogenesis". Mid-America Toxicology Course, Kansas City, Missouri.
8/18/10	"Liver Tumorigenesis Modes of Action". Liver Tumorigenesis & PPAR Workshop, Research Triangle Park, North Carolina.
10/12/10	"Evaluation of the Relevance to Humans of Animal Models of Environmental Toxicants". Environmental Pathology Symposium, 28th International Congress of the International Academy of Pathology, Saõ Paulo, Brazil.
10/18/10	"Carcinogenicity Testing – Where to Go?" First Meeting of the Latin American Association of Toxicologic Pathology, Botucatu, Brazil.
10/19/10	"Bladder Carcinogenesis". Program in Toxicology, Saõ Paulo State University Medical School, Botucatu, Brazil.
4/6/11	"Mode of Action and Toxicological Studies". ILSI – Brazil, Pre-Congress, Saõ Pedro, Brazil.
4/7/11	"Risk Assessment for the 21st Century (Risk 21)". 21st Annual Congress of ILSI – Brazil, Saõ Pedro, Brazil.
5/3/11	"Chemical Carcinogenesis". Mid-America Toxicology Course, Kansas City, Missouri.
5/4/11	"Arsenic, A Natural Carcinogen: What Is Safe?". Grand Rounds, Department of Pathology and Microbiology, University of Nebraska Medical Center, Omaha, Nebraska.
5/18/11	"Mode of Action and Human Relevance: Risk Assessment for the 21st Century." HESI Asia Webinar Series.
6/13/11	"Mode of Action and Weight-of-Evidence Approach Into Toxicological Evaluation". ILSI-Brasil Workshop, Scientific Basis to Pesticides Toxicological Evaluation, Risk Assessment and Risk Management, Brasilia, Brazil.

7/14/11	"Liver Cancer Etiology". 66th Meeting of Japanese Society of Gastroenterological Surgery, Nagoya, Japan.
7/19/11	"Mode of Action and Human Relevance: Risk Assessment for the 21st Century". Ministry of Environment, Tokyo, Japan.
7/19/11	"Mode of Action and Human Relevance: Risk Assessment for the 21st Century". Food Science Commission, Tokyo, Japan.
10/24/11	"Mode of Action and Human Relevance". Pathology Graduate Program, State University of Saõ Paul, Botucatu, Brazil.
10/26/11	"Research and Graduate Education in the United States". Pathology Graduate Program, State University of Saõ Paulo, Botucatu, Brazil.
11/22/11	"Mode of Action and Human Relevance Framework: Some Recent Examples of Pharmaceuticals, Pesticides and Food Additives". National Institute of Health Sciences, Tokyo, Japan.
11/23/11	"Urinary Bladder Carcinogenesis by DNA Reactive and Non-Reactive Chemicals: Non-linearities and Thresholds." Symposium on Genotoxic and Carcinogenic Threshold, Tokyo, Japan.
12/1/11	"Evaluation of the Carcinogenecity of Monomethylarsonic Acid". US EPA, Washington, DC.
3/13/12	"Inorganic Arsenic". US EPA, San Francisco, CA.
4/23/12	"New Angle to Screen Carcinogenesis Factors". Workshop on Selected Topics in Carcinogenicity, US FDA, Silver Spring, MD.
4/24/12	"Chemical Carcinogenesis". Mid-America Toxicology Course, Kansas City, MO.
4/27/12	"Evaluation of the Potential Carcinogenicity Due to Exposure to Inorganic Arsenic". US EPA, Washington, DC.
6/27/12	"The Two-Year Bioassay as a Carcinogenesis Screen: A Useless and Often Misleading Waste of Resources". Drug Information Association Annual Meeting, Philadelphia, PA.
7/11/12	"Comparing Rat CPN to Human Kidney Disease". Toxicology Forum, Aspen, CO.
8/17/12	"Relevance of Rodent Renal Tumors for Human Health Risk Assessment". Charles Louis Davis Foundation Seminar on Renal Carcinogenesis, Raritan, NJ.

9/11/12	"Risk 21". 8th Congress of Toxicology in Developing Countries, Bangkok, Thailand.
9/16/12	"Lower Urinary Tract: Normal Structure, Toxicity, and Carcinogenesis". Sixth RTP Rodent Pathology Course, Urinary Pathology, NC.
10/22/12	"Mode of Action and Human Relevance Framework". Pathology Graduate Program, State University of Saõ Paulo, Botucatu, Brazil.
10/26/12	"Arsenic Carcinogenesis: How to Critically Read the Scientific Literature". Pathology Graduate Program, State University of Saõ Paulo, Botucatu, Brazil.
11/23/12	"Mode of Action as the Scientific Basis for Human Risk Assessment for Bladder Carcinogens: Pioglitazone as a Case Study". Swiss Society of Toxicology, Basel, Switzerland.
1/8/13	“Mode of Action of Arsenic Carcinogenesis”. US EPA Workshop on Arsenic Risk Assessment, Research Triangle Park, NC.
1/22/13	"Arsenic in Food". ILSI North America Food and Chemical Safety Committee, Miami, FL.
1/23/13	"Key Events Dose Response Framework (KEDRF)". Weight of Evidence Workshop, ILSI North America, Miami, FL.
4/3/13	“Inorganic Arsenic Toxicity and Carcinogenicity.” US FDA, College Park, MD.
4/4/13	“Mode of Action and Mechanism Identification and Implications for Low Dose Assessments.” Workshop on Inorganic Arsenic: Scientific Considerations for Hazard Identification and Dose-Response Analysis; National Academy of Sciences, Washington, DC.
4/25/13	“Chemical Carcinogenesis”. Mid-America Toxicology Course, Kansas City, MO.
5/8/13	“Mode of Action of Arsenical Carcinogenesis”. US EPA Webinar.
6/27/13	“Safety Assessment of Sugar Alternatives: Case of Saccharin Safety Assessment and Perspectives for Industrial Uses.” International Symposium on Understanding Carbohydrates: Controversies, Regulation and Future Direction. ILSI Korea-Korean Nutrition Society, Seoul Korea.
6/30/13	“Trends in Chemical Carcinogenesis.” Continuing Education Course in Genotoxicology and Carcinogenesis, XIII International Congress of Toxicology, Seoul, Korea.

7/4/13 "Lesions of the Bladder – Structure/Spontaneous/Induced Changes – Lecture I". Modular Education Programme in Toxicological Pathology, Module 12, Urinary System. British Society of Toxicologic pathology, Cambridge University, England.

7/4/13 "Lesions of the Bladder – Structure/Spontaneous/Induced Changes – Lecture II". Modular Education Programme in Toxicological Pathology, Module 12, Urinary System. British Society of Toxicologic pathology, Cambridge University, England.

7/4/13 "Lesions of the Bladder – Practical". Modular Education Programme in Toxicological Pathology, Module 12, Urinary System. British Society of Toxicologic pathology, Cambridge University, England.

7/4/13 "Human Urinary Tract Pathology and Drug Development". Modular Education Programme in Toxicological Pathology, Module 12, Urinary System. British Society of Toxicologic pathology, Cambridge University, England.

8/14/13 "Mode of Action for Arsenic Toxicity and Carcinogenesis". 10th International Symposium on Persistent Toxic Substances. Edmonton, Alberta, Canada.

11/3/13 "Using Mode of Action in Determining Relevance in Human Carcinogenesis Risk Assessment." Continuing Education Course, American College of Toxicology. 34th Annual Meeting, San Antonio, Texas.

11/7/13 "Urinary Bladder Carcinogenesis in Animals and Humans". Pathology Graduate Program, State University of Saõ Paulo, Botucatu, Brazil.

11/9/13 "Medicine and Science: Where Have We Been, Where Are We Going". 50th Anniversary Celebration of Faculdade de Medicina de Botucatu, Botucatu, Brazil.

12/4/13 "Chemical Carcinogenesis, Toxicology and Risk Assessment." Symposium on Mechanistic Paradigms for Toxicological Regulation, Society of Toxicology of Canada, Ottawa, Canada.

12/9/13 "A Common Mode of Action for Arsenical Toxicity." Symposium on Understanding Human Health Risks from Dietary Arsenic Exposure, Society for Risk Analysis, Baltimore, Maryland.

1/21/14 "Arsenic in Food: Sources and Issues in Assessment of Its Risk." Symposium, Food Safety Case Study: Arsenic, ILSI North America, Bermuda.

3/26/14	“A mutagen is a carcinogen because it is a mutagen.” Debate, Regulatory and Safety Evaluation Specialty Section, Society of Toxicology, Phoenix, Arizona.
4/7/14	"Chemical Carcinogenesis." Mid-America Toxicology Course, Kansas City, Missouri.
4/9/14	“The FEMA GRAS Program and the FEMA Expert Panel.” IOFI Meeting with Japanese Scientists, Tokyo, Japan.
5/25/14	“FEMA GRAS: The Safety Evaluation of Flavoring Ingredients in the United States.” International Symposium on Safety, Regulation of Food Flavorings and Their Best Practices. Food and Drug Administration of Taiwan Workshop on Flavoring Safety Evaluation, Taipei, Taiwan.
5/30/14	“Arsenic in Rice: Toxicological Issues and Implications for Human Health Risk Assessment.” ILSI Southeast Asia and Agri-Food & Veterinary Authority of Singapore Symposium on Arsenic in Rice – Risk Assessment and Standards, Singapore.
6/4/14	“The FEMA GRAS Program and FEMA Expert Panel.” ConAgra Food Safety Committee, Omaha, Nebraska.
6/25/14	“Rodent vs. Human Lung Cancer: The Good, the Bad, and the Ugly.” Symposium on Environmental Toxicologic Pathology and Prediction of Human Health Risks, 33rd Annual Meeting of Society of Toxicologic Pathology, Washington, DC.
6/26/14	"Inorganic arsenic carcinogenicity and toxicity." EPA-IRIS Evaluation of Inorganic Arsenic, Stakeholders Meeting, Arlington, Virginia.
10/16/14	“Two-year Rodent Cancer Bioassay: Human Relevance?” Annual Meeting of the Southern California Chapter of the Society of Toxicology, La Jolla, California.
10/28/14	“Chemical Carcinogenesis.” Food and Drug Administration, College Park, Maryland.
11/12/14	“In Vitro to In Vivo Extrapolation.” Pathology Graduate Program, State University of Saõ Paulo, Botucatu, Brazil.
11/13/14	“Arsenic Carcinogenesis.” Pathology Graduate Program, State University of Saõ Paulo, Botucatu, Brazil.
1/25/15	"The Future of Carcinogenicity Testing." Roundtable Discussion, Society of Toxicology Annual Meeting, San Diego, California.

4/21/15	"Chemical Carcinogenesis." Mid-America Toxicology Course, Kansas City, Missouri.
6/3/15	"Saccharin: How Academia, Government and Industry Worked Together to Solve a Scientific Problem." Coca-Cola, Atlanta, Georgia.
6/25/15	"Molecular Mechanisms of Liver Carcinogenesis." International Symposium on PHMB, Paris, France.
6/25/15	"Overview of PHMB-Induced Rat Liver Carcinogenesis and Mechanistic Research." Interational Symposium on PHMB, Paris, France.
7/10/15	"Inorganic Arsenic: Toxicity and Carcinogenicity." Office of Management and Budget, Washington, DC.
7/15/15	"Overview on Sources of Arsenic Exposure, Issues in Arsenic Risk Assessment." Toxicology Forum, Colorado Springs, Colorado.
7/21/15	"Liver Carcinogenesis in Rodents and Humans." Pathology Graduate Program, State University of Saõ Paulo, Botucatu, Brazil.
7/22/15	"Urothelial Carcinogenesis: An Historical Perspective." Pathology Graduate Program, State University of Saõ Paulo, Botucatu, Brazil.
7/29/15	"FEMA GRAS Regulatory Considerations and the Underlying Science." Workshop on the Safety Evaluation of Food Flavors, Beijing, China.
9/28/15	“Overview on Mode of Action: Implication for Risk Assessment of Low Dose Inorganic Arsenic.” Symposium on Health Risk Assessment of Oral Exposure to Arsenic, Environmental Mutagenesis, and Genomics Society, New Orleans, Louisiana.
10/21/15	“Risk 21: QKEDRF”. Risk 21: A Practical Framework for Risk Assessment in the 21st Century Case-Study Workshop, National Taiwan University, Taipei, Taiwan.
10/23/15	“Risk 21: QKEDRF”. Risk 21: A Practical Framework for Risk Assessment in the 21st Century, National Health and Family Planning Commission and Chinese Food Safety Authority, Nanjing, China.
10/25/15	“Risk 21: A Practical Framework for Risk Assessment in the 21st Century.” Workshop, Chinese Society of Toxicology, 7th Annual Meeting, Wuhan, China.
11/4/15	“Urothelial Carcinoma: Two Diseases.” Grand Rounds, Department of Pathology and Microbiology, University of Nebraska Medical Center, Omaha, Nebraska.

1/29/16 “Critical Role of Toxicologic Pathology in a Short-Term Screen for Carcinogenicity.” Plenary presentation at Annual Meeting of the Japanese Society of Toxicologic Pathology, Kagawa, Japan.

3/15/16 "Risk Assessment of Metals in Food Utilizing Mode of Action Analysis." Workshop on Scientific and Regulatory Advances in Safety Evaluation of Heavy Metals in Food. 55th Annual Meeting of the Society of Toxicology, New Orleans, Louisiana.

4/18/16 "Cell Proliferation and Carcinogenesis: Recreation of the Wheel." Colloquium, University of Connecticut, Storrs, Connecticut.

4/26/16 "Chemical Carcinogenesis." Mid-America Toxicology Course, Kansas City, Missouri.

6/14/16 "Risk 21: The Quantitative Key Events/Dose-Response Framework (QKEDRF)." Workshop on Risk 21: A Practical Framework for Risk Assessment in the 21st Century, São Paulo, Brazil.

6/16/16 "Risk 21: The Quantitative Key Events/Dose-Response Framework (QKEDRF)." Workshop on Risk 21: A Practical Framework for Risk Assessment in the 21st Century, Brasilia, Brazil.

6/20/16 "The Quantitative Key Event Dose Response Model in Research and Risk Assessment." Workshop on New Paradigms in Toxicology Perspectives, State University of São Paulo, Botucatu, Brazil.

6/20/16 "Application of Risk 21: Case Examples." Workshop on New Paradigms in Toxicology Perspectives, State University of São Paulo, Botucatu, Brazil.

6/30/16 "Kidney and Thyroid Effects of tert-Butyl Alcohol." US EPA Integrated Risk Information System (IRIS) Public Science Meeting, Benzo(a)pyrene and tert-Butyl Alcohol, Arlington, Virginia.

10/5/16 "Risk Assessment of Metals in Food Utilizing Mode of Action Analysis." Center for Research on Ingredient Safety Annual Meeting, Michigan State University, East Lansing, Michigan.

10/10/16 "Human Carcinogenesis Risk Evaluation: An Alternative Approach to the Two Year Rodent Bioassay." National Center for Safety Evaluation of Drugs, Beijing, China.

10/13/16 "Non-neoplastic Lesions of the Lower Urinary Tract." Fifth NIFDC-STP Toxicologic Pathology Symposium, Jinan, China.

10/13/16 "Pre-neoplastic and Neoplastic Lesions of the Lower Urinary Tract." Fifth NIFDC-STP Toxicologic Pathology Symposium, Jinan, China.

10/13/16 "Carcinogenesis of the Lower Urinary Tract." Fifth NIFDC-STP Toxicologic Pathology Symposium, Jinan, China.

10/25/16 "Role of Cytotoxicity and Regenerative Hyperplasia in Cancer." Toxicology Forum Symposium on Human Relevance of Rodent Liver Tumors, Arlington, Virginia.

10/27/16 "A Half Century of Carcinogenesis Research." Ambassador Award Lecture for Mid-Atlantic Society of Toxicology, Edison, New Jersey.

11/3/16 "Risk 21: The Quantitative Key Events/Dose-Response Framework (Q-KEDRF)." Health Canada Workshop on Risk 21, Ottawa, Canada.

11/7/16 "Toxicology: It's Still the Dose." American College of Toxicology Distinguished Scientist Award Lecture, 37th Annual Meeting of the American College of Toxicology, Baltimore, Maryland.

12/6/16 "Arsenic Carcinogenesis." Montana State University, Bozeman, Montana.

3/13/17 "Cell Proliferation and Carcinogenesis: Bad Luck and the Environment." Merit Award Lecture, Society of Toxicology, Baltimore, Maryland.

3/14/17 "Chemical Carcinogenesis." Eminent Toxicologist Lecture Series, Society of Toxicology, Baltimore, Maryland.

3/15/17 "Influences on Assessment of Arsenic Exposure." Arsenic Science Task Force, Baltimore, Maryland

4/20/17 "Risk Assessment vs. Hazard Identification: EPA Compared to IARC Cancer Classification" Presentation to joint meeting of Columbia and Ecuador Ministries of Health, Agriculture, and Environment, Bogota, Columbia.

7/10/17 "Mechanistic Insights from Repeated Dose Studies on Cr (IV) and Other Small Intestine Carcinogens." Toxicology Forum, Annapolis, Maryland.

Community service: Numerous (e.g., Venerini Academy, Marian High School, Creighton Preparatory School, University Hospital Auxiliary, Mary Our Queen Parish, Sacred Heart Ministry)

Publications:

a. Articles published in scholarly journals

1. Erturk, E., Price, J.M., Morris, J.E., Cohen, S., Leith, R.S., Von Esch, A.M. and Crovetti, A.J. The production of carcinoma of the urinary bladder in rats by feeding N-

[4-(5-nitro-2-furyl)-2-thiazolyl]foramide. Cancer Res., 27: 1998-2002, 1967. (PMID: 6073497)

2. Erturk, E., Cohen, S.M., Price, J.M., Von Esch, A.M., Crovetti, A.J. and Bryan, G.T. The production of hemangioendothelialsarcoma in rats by feeding 5-acetamido-3-(5-nitro-2-furyl)-6H-1,2,4-oxadiazine. Cancer Res., 29: 2212-2218, 1969. (PMID: 5387261)

3. Erturk, E., Cohen, S.M., Price, J.M. and Bryan, G.T. Pathogenesis, histology, and transplantability of urinary bladder carcinomas induced in albino rats by oral administration of N-[4-(5-nitro-2-furyl)-2-thiazolyl] formamide. Cancer Res., 29: 2219-2228, 1969. (PMID: 5837262)

4. Cohen, S.M., Erturk, E., Price, J.M. and Bryan, G.T. Comparative carcinogenicity in the rat of 2-hydrazinothiazoles with nitrofuryl, nitrophenyl, or aminophenyl substituents in the 4-position. Cancer Res., 30: 897-901, 1970. (PMID: 5537322)

5. Cohen, S.M., Erturk, E. and Bryan, G.T. Carcinogenicity of formic acid 2-[4-(5-nitro-2-furyl)-2-thiazolyl] hydrazide in Swiss mice. Cancer Res., 30: 906-912, 1970. (PMID: 4324549)

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b. Articles accepted for publication in scholarly journals:

1. Boobis, A.R., Cohen, S.M., Dellarco, V.L., Doe, J.E., Fenner-Crisp, P.A., Moretto, A., Pastoor, T.P., Schoeny, R.S., Seed, J.G., and Wolf, D.C. Classification schemes for carcinogenicity based on hazard-identification have become outmoded and serve neither science nor society. Reg. Toxicol. Pharmacol, in press.

c. Articles submitted for publication in scholarly journals:

1. Smith R.L., Cohen, S.M., Fukushima, S., Gooderham, N.J., Hecht, S.S., Marnett, L.J., Rietjens, I.M.C.M., Bastaki, M., Harman, C.L., McGowan, M.M., Valerio, L.G., Jr., and Taylor, S.V. The safety evaluation of food flavoring substances: the role of metabolic studies. Submitted.

2. Cohen, S.M., Eisenbrand, G., Fukushima, S., Gooderham, N.J., Guengerich, F.P., Hecht, S.S., Rietjens, I.M.C.M., Smith, R.L., Bastaki, M., Davidson, J.M., Harman, C.L., McGowen, M.M., and Taylor, S.V. GRAS affirmation of citrus natural flavor complexes used as flavoring ingredients. Submitted.

3. Kakiuchi-Kiyota, S., Sullivan, D.M., Coskran, T.M., Cohen, S.M., Cook, J.C., Kreeger, J.M., Cuttley, R.C., Crabbs, T.A., Liu, L., and Obert, L.A. Pathogenesis of canine spontaneous hemangiosarcoma. Submitted.

4. Cardoso, A.P.F., Gomide, L.M.M., Souza, N.P., de Jesus, C.M.N., Arnold, L.L., Cohen, S.M., de Camargo, J.L.V., and Pontes, M.G.N. Seminiferous tubule alterations induced by cryptorchidism in the rat and their reversibility. Submitted.

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Tony Cox is President of Cox Associates (www.cox-associates.com), a Denver-based applied research company specializing in quantitative health risk analysis, epidemiology, causal analytics, and operations research. Since 1986, Cox Associates' mathematicians and scientists have applied epidemiological and biomathematical models, biostatistical and computational risk analyses, causal data mining, machine learning, artificial intelligence, bioinformatics, and operations research models to measurably improve health risk assessment and decision-making for public and private sector clients. In 2006, Cox Associates was inducted into the Edelman Academy of the Institute for Operations Research and Management Science (INFORMS), recognizing outstanding real-world achievements in the practice of operations research and the management sciences. In 2012, Dr. Cox was inducted into the National Academy of Engineering (NAE), "For applications of operations research and risk analysis to significant national problems." He has served as a member of the National Academies' Board on Mathematical Sciences and their Applications (BMSA) (2012-2016) and has served on many National Academies and National Research Council committees dealing with health and safety risk analysis. In 2013, he co-founded NextHealth Technologies, a Denver-based company offering advanced data analytics solutions to healthcare plans to reduce health, financial, and member attrition risks. Since 2015, Dr. Cox and Cox Associates have received funding from the The George Washington University Regulatory Studies Center to develop statistical software for causal analysis of epidemiological data; the American Chemistry Council to develop predictive analytics software and research lung diseases caused by crystalline silica and other poorly soluble particles; the American Petroleum Institute and its members for research on methods of causal analysis applied to epidemiological data on asthma, coronary heart disease, all-cause mortality, and other adverse health effects associated with exposure to fine particulate matter (PM2.5) and ozone (O3); the U.S. EPA for expert review of research proposals; the National Stone, Sand, and Gravel Association for research on the statistical reliability and variability of laboratory measurements of crystalline silica in air filters; the European petroleum consortium CONCAWE for research on low-dose metabolism of benzene among Chinese workers; plaintiff's attornies for expert opinions on the use of statistical methods and models in construction defect litigation; and telecommunications companies for research and software on high-reliability optical networks.

Dr. Cox holds a Ph.D. in Risk Analysis (1986) and an S.M. in Operations Research (1985), both from MIT; an AB from Harvard University (1978); and is a graduate of the Stanford Executive Program (1993). He is Clinical Professor of Biostatistics and Informatics at the University of Colorado Health Sciences Center and has served at the University of Colorado, Denver as Honorary Full Professor of Mathematics, lecturing on decision and risk analysis, biomathematics, health risk modeling, computational statistics and causality; and on the Faculties of the Center for Computational Mathematics and the Center for Computational Biology. He has taught many graduate and professional courses in decision and risk analysis, causal analytics, computational statistics, and biomathematical modeling. Dr. Cox is Editor-in-Chief of *Risk Analysis: An International Journal*. He is Area Editor for Real World Applications for the *Journal of Heuristics*, and is on the Editorial Board of the *International Journal of Operations Research and Information Systems*. He is an Edelman Laureate of INFORMS, a member of the American Statistical Association (ASA), and a lifetime Fellow of the Society for Risk Analysis (SRA). He has authored and co-authored over 200 journal articles and book chapters on these fields. His most recent books are *Breakthroughs in Decision Science and Risk Analysis* (Wiley, 2015), *Improving Risk Analysis* (Springer, 2013), *Risk Analysis of Complex and Uncertain Systems* (Springer, 2009) and the *Wiley Encyclopedia of Operations Research and Management Science* (Wiley, 2011), which Dr. Cox co-edited. He has over a dozen U.S. patents on applications of artificial intelligence, signal processing, statistics and operations research in telecommunications. His current research interests include computational statistical methods for causal inference in public health risk analysis, data-mining, and advanced analytics for risk analysis and public policy applications.

LOUIS ANTHONY COX, JR., PH.D
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WORK HISTORY

1986 - Present	President, Cox Associates. Cox Associates is an independent Denver-based consulting company specializing in advanced analytics, data science and software, risk analysis, management science, operations research, and epidemiology for public- and private-sector clients. Cox Associates develops and applies quantitative risk assessment, machine learning, uncertainty analysis, decision optimization models and artificial intelligence and computational statistics to measurably improve client decision-making. Since 1996, its sister company NetAdvantage has provided risk modeling, customer data mining, and network planning software solutions to telecommunications companies. In 2013, Dr.Cox co-founded NextHealth Technologies (NHT), a company offering advanced data analytics solutions to healthcare plans to measurably reduce health, financial, and member attrition risks and to improve member values and health outcomes under the provisions of the Affordable Care Act.
1987 - 1996	Senior Director for U S West Advanced Technologies in Boulder, Colorado. Built world-class management science and operations research team, headed Business and Engineering Modeling, Communications Services Research, and Network Architecture divisions; secured corporate and external funding commitments for $11M annual applied research budget; managed twelve director areas and over 100 professional engineers and scientists in the areas of management science and statistical and econometric modeling, optoelectronics, network architectures and technologies, network economics and performance analysis, wireless architecture and engineering, network evolution, product test and development, standards, international projects, digital signal processing, network optimization, and breakthrough projects.
1980 - 1986	Manager, Applied Decision Sciences practice area; Senior Consultant in Operations Research, Arthur D. Little, Inc., Cambridge, MA
1978 - 1979	Senior Research Associate, American Institutes for Research in the Social and Behavioral Sciences (AIR), Washington, D.C. and Cambridge, MA

Present and Past Academic Affiliations

- Visiting Scholar, The George Washington University Regulatory Studies Center
- Clinical Professor, Biostatistics and Informatics, University of Colorado
- Honorary Full Professor of Mathematics, University of Colorado at Denver (UCD) (http://math.ucdenver.edu/people/faculty.shtml)
- Faculty, Center for Computational Biology, UCD (www.cudenver.edu/ccb/associates.html)
- Adjunct Faculty member, Center for Computational Mathematics, UCD (http://ccm.ucdenver.edu/list.shtml)
- Advisory Board, Center for Human Performance and Risk Analysis (CHPRA), University of Wisconsin at Madison
- Clinical Professor, Preventive Medicine and Biometrics, University of Colorado
- Instructor, Computer Science Department, University of Colorado at Denver. Taught courses on causal inference and computational statistical methods.
- Faculty, DanielsSchool of Business, DenverUniversity, 1987, 1997. Taught courses on statistics and on wireless technology.
- Faculty, Leeds School of Business, University of Colorado at Boulder, 1993. Taught courses on decision analysis and statistical decision theory.
- Faculty, HarvardUniversityExtensionSchool, 1986. Taught course on decision and risk analysis.

EDUCATION

1986 - Present	Professional courses, seminars, and tutorials in advanced analytics, management science, data science, operations research, computational statistics, neuroeconomics, behavioral economics
1993	Stanford Executive Program, StanfordBusinessSchool
1985 - 1986	M.I.T., Ph.D. in Risk Analysis. Dissertation: *Mathematical Foundations of Risk Measurement*
1983 - 1985	M.I.T., S.M. in Operations Research, Department of Electrical Engineering and Computer Science. Thesis: *Attribution of Risk in the Presence of Joint Causes.*
1979 - 1983	Harvard University, graduate courses in applied mathematics, theoretical and applied statistics, psychometrics, and decision sciences
1975-1978	Harvard University, A.B. (Mathematical Economics)

ACADEMIC EXPERIENCE

Graduate Courses Developed and Taught

- *Statistical Consulting,* Department of Mathematics, University of Colorado at Denver, 2017
- *Decision Analysis,* Business School, University of Colorado at Denver, 2013, 2017
- *Game Theory,* Mathematics Department, University of Colorado at Denver, 2012
- *Health Risk Analysis,* Health SciencesCenter, University of Colorado, 2004; 2006
- *Causality, Inference, and Decision-Making,* Computer Science Department, University of Colorado at Denver, 2002, 2003
- *Decision and Risk Analysis,*Leeds School of Business, University of Colorado at Boulder, 1993
- *Statistics for Business,*DenverUniversityGraduateSchool of Business, 1987-88
- *Social Decision and Risk Management,*HarvardUniversityExtensionSchool, 1986

Professional Courses Developed and Taught

- *Advances in Health Risk Assessment and Modeling.*Invited lectures presented at Risk Assessment Unit at Evira (Finnish Food Safety Authority) Helsinki. October 22-23, 2009.
- Short Course on *Causality and Decision Analysis for Risk Analysts. Australia&New Zealand Regional Organisation of the Society for Risk Analysis. 3rd Annual Conference.*Canberra, Australia. September 29, 2008. http://www.acera.unimelb.edu.au/sra/SRA2008/Abstract-program.pdf
- *Probabilistic risk analysis: Assessment, management, and communication.*HarvardCenter for Risk Analysis. Boston, MA. 2000-2004. Lectures on developing valid probability models from data, subjectivity in data analysis; Bayesian inference in multivariate data sets and causal modeling and influence diagrams for risk analysis.
- *Gordon-Kenan Risk Analysis Summer School in Risk Analysis* August 3-15, 2003 Roger Williams University Bristol, RI www.grc.uri.edu/programs/2003/risk.htm
- *Probabilistic risk analysis.* Professional course for Health Canada. Ottawa, Ontario. March 25th-28th, 2002. Lectured on "Using epidemiological data in risk assessment" and on "Causal graphs, Bayesian belief networks, and influence diagrams: A framework for risk assessment and risk management".
- *Advanced Methods for Dose-Response Assessment: Bayesian Approaches*. Resources for the FutureConferenceCenter, Washington, D.C. September 18th-20th, 2000 http://www.rff.org/disc_papers/PDF_files/0115.pdf.
- "Bayesian methods for assessing uncertain exposures", *Workshop on Probabilistic Methods for Risk Assessment.* Society for Risk Analysis, Phoenix, Az, 12-06-98.
- *Advances in Wireless Technology,* DenverUniversity, Fall, 1997
- *Introduction to Decision Analysis for Risk Management,* United States Department of Agriculture's APHIS Introductory Risk Analysis course, University of Maryland Conference Center, July 9, 1992.
- *Risk Assessment Modeling,* one-day short course given at the USDA Training Center, APHIS Risk Assessment Course, Fort Collins, CO, July 23-24, 1992.
- *Technical Risk Communication,* short-course given at the Greenbelt Marriott Hotel, APHIS Advanced Risk Communication Course, Greenbelt, MD, August 20, 1992.
- *Biologically-Based Risk Assessment.* Short course, Society for Risk Analysis, 1991.

Science Enrichment Courses Developed and Taught for Elementary School Children

Ricks Center for Gifted Children at the University of Denver (www.du.edu/ricks/)

- *Natural and Artificial Life, Evolution, and Intelligence* (Spring, 2010)
- *Introduction to Cosmology and Earth Science* (Spring, 2010)
- *Matter, Energy, and Technology* (Spring, 2009)
- *Introduction to Materials Science* (Spring, 2009)
- *Basic Cell Biology* (Fall, 2008)

Dissertations Supervised

Dr. Cox has served on S.M. and Ph.D. thesis committees at the University of Denver (S.M. thesis on genetic algorithms) and the University of Colorado (S.M. thesis on innovations in voice messaging, 1995; Ph.D. thesis on classification trees for learning forecasting models from data, 1999; MS thesis on ant colony optimization for bandwidth packing, 2000; MS project on data mining and causal simulation modeling, 2000; Ph.D. thesis on uncertainty analysis in epidemiology, 2003.)

Research Collaborations

At U S WEST Advanced Technologies, Dr. Cox initiated and led collaborative research projects with top researchers at many universities, including

- HarvardUniversity (projects on combinatorial optimization and on interactive mixed natural language and graphics dialogue interfaces, with Professor Barbara Grosz)
- ColumbiaUniversity (dynamic traffic routing with Professor David Yao)
- SyracuseUniversity (machine comprehension of scientific abstracts)
- Oregon Graduate Institute (breakthroughs in neural net and digital signal processing technologies for automated speech recognition with Professor Ron Cole).

In 1992, his collaboration with mathematicians at the University of Colorado at Denver on combinatorial optimization heuristics for network routing was selected by the Colorado Advanced Software Institute (CASI) as one of only two projects (out of 30) that exemplified this state-funded Institute's major goals: outstanding industry-university technical research with high commercial value. In 1993 and 1994, his collaborations with UCD on new data mining algorithms and pattern recognition techniques for risk analysis and fault diagnosis algorithms were the only projects to receive CASI's award. Dr. Cox has also collaborated with colleagues at Bell Labs and the University of California on fundamental research in multistate reliability and biomathematical modeling.

Other Academic Experience

From 1987-1992, Dr. Cox served on the Industry Advisory Board of the Mathematics Department at the University of Colorado at Denver, where he was subsequently Honorary Full Professor of Mathematics and on the Faculty of the Center for Computational Mathematics. He has given invited talks on advanced topics in risk analysis, telecommunications engineering and management, and computer science to faculties and graduate seminars at many top universities. He is Editor-in-Chief of *Risk Analysis: An International Journal* and is Area Editor (Real-World Applications)of the *Journal of Heuristics*, which he helped to found in 1995.He is on the Editorial Board of the*International Journal of Operations Research and Information Systems*.He has reviewed many academic research proposals for the National Science Foundation's Decision, Risk, and Management Science program and SBIR technology proposals for NSF and other agencies. He has lectured on data mining, and other statistical, mathematical, and analytics topics at the University of Colorado. Dr. Cox has taught many professional courses and conducted many professional workshops, including *Probabilistic Methods in Risk Assessment* at the Society for Risk Analysis Annual Meeting in 1998; and a *Short Course on Causality and Decision Analysis for Risk Analysts* at the Australia & New Zealand Regional Organisation of the Society for Risk Analysis in 2008.

Conference Sessions Chaired

Dr. Cox has chaired many conference sessions, including the following:

- *Symposium: Risk Analysis: Past, Present, and Future*. Society for Risk Analysis 2013 Annual Meeting. Baltimore, MD.
- *Symposium: Foundational Issues in Risk Analysis*(with Terje Aven). Society for Risk Analysis 2013 Annual Meeting. Baltimore, MD.
- *Ambient Air: Particulate Matter Exposure*. Society for Risk Analysis 2012 Annual Meeting. San Francisco. December 12, 2012.
- *Novel Approaches in Dose Response*. Society for Risk Analysis 2010 Annual Meeting. Salt Lake City. December 7, 2010.
- *Sustainable Value Chains*. Institute for Operations Research and Management Science annual conference, Austin, TX, 2010.
- *Security and Resilience in Telecommunications Networks*. Institute for Operations Research and Management Science annual conference, Washington, D.C., 2008.
- *Animal Pathogens and Human Exposure.*Society for Risk Analysis annual conference, San Antonio, TX, 2007. (Substituted for Dr. Michael McElvaine as chair.)
- *Alternative Approaches to Risk Assessment*.Society for Risk Analysis annual conference, San Antonio, TX, 2007.
- *Complexity in Modeling Mode-of-Action and Other Sources of Non-Linearity In Risk*. Society for Risk Analysis annual conference, Baltimore, MD December, 2006.
- *Statistical Methods: Uncertainty, Confidence Limits, etc.*Society for Risk Analysis annual conference, Palm Springs, December 5-8, 2004.
- *Toxicology.* Session at Non-Linear Dose-Response Relationships in Biology, Toxicology, and Medicine: An International Conference. (University of Massachusetts, Amherst, MA, May 28-30th, 2003)

- *Special Applications in Industry and Government.* (Society for Risk Analysis, 2002)
- *Market Modeling and Policy* (INFORMS Telecommunications Conference, 2002)
- *Wireless Network Planning* (INFORMS Telecommunications Conference, 2002)
- *Optical Networks* (8th International Conference on Telecommunications Systems, 2000.)
- *Telecommunications* (INFORMS, 2000)
- *Marketing* (INFORMS, 1999)
- *Forecasting and Economics* (INFORMS Telecommunications Conference, 1998)
- *Stochastic Optimization* (Society for Industrial and Applied Mathematics, SIAM, 1996)
- *Planning Heuristics for Telecommunications Networks* (INFORMS, 1996).
- *Risk and Uncertainty*
- *Artificial Intelligence Heuristics for Optimization*
- *Heuristic Optimization for Process Improvement.*
- Cluster chair for INFORMS sessions on "*Heuristic Optimization and Learning*" (1994).

CONSULTING EXPERIENCE

Examples of consulting projects completed by Dr. Cox in the past decade include the following:

RISK ANALYSIS, ECONOMICS, AND APPLIED STATISTICS

- For the National Academies, member of committee advising the Department of Interior's Bureau of Safety and Environmental Enforcement on Options for Implementing the Requirement of Best Available and Safest Technologies for Offshore Oil and Gas Operations (2013)
- For the National Pork Board, quantified the human health risks from swine-associated Methicillin-resistant *Staphylococcus Aureus* (MRSA) infections (2013) and toxoplasmosis from swine reared in conventional vs. open production systems (2013)
- For the National Research Council, member of committee advising the U.S. Air Force on U.S. Air Force Strategic Deterrence Capabilities in the 21st Century Security Environment (2012-2013)
- For the George Washington University Regulatory Studies Center, reviewed advances in econometric and statistical methods for causal analysis. Applied Granger Causality tests, panel data analysis, and other methods to time series data, and found that changes in temperature, but not changes in particulate matter, are Granger-causes of benefits previously attributed to Clean Air Act regulations. (2012)
- For the National Sand and Gravel Association, analyzed spatial distributions of socioeconomic variables and cause-specific mortality rates in California. Demonstrated that regression coefficients describing disease rates as functions of proximity to suspected hazardous sources do not have the causal interpretations ofte assigned to them, but reflect spurious associations due to spatially autocorrelated but statistically independent spatial stochastic processes. (2012)
- For the National Pork Board, prepared comments on a Russian risk analysis of tetracycline residues in foods. These comments provided the technical basis for the USG's position in trilateral trade negotiations with the EU and Russian Federation (2011, 2012)
- For The Center for Media and Public Affairs (CMPA) at George Mason University, reassessed a risk-cost-benefit analysis of Clean Air Act Amendment impacts, accounting for uncertainty about causation. (2011)
- For the Amerian Petroleum Institute, analyzed the application of income distribution equity indices (such as the Atkins Index) to fair distribution of air pollution health risks. Showed that the Atkins Index and related economic indices of income inequality are not useful for health risk inequality assessment (2011)
- For the Institute of Medicine (IOM), served as a reviewer for the *IOM Draft onScientific Standards for Studies of Modified Risk Tobacco Products*, examining the types of biomarker data and other scientific information needed to demonstrate to FDA that new products have reduced risks (2011)
- Served as expert reviewer for EPA's *Draft Microbial Risk Assessment Guideline: Pathogenic Microorganisms with Focus on Food and Water* (2011)
- For the U.S. EPA, served as a member of the Science Advisory Board (SAB) for Dioxin (2010-11)
- For the Colorado state police, analyzed the frequency and severity of car accidents by time of day, time of year, driver age and sex, driver behavior (e.g., alcohol use, use of safety devices), and types of air bags and oher equipment. Developed an injury prediction model that successfully predicted risks of injury, given an accident, from less than 20% to over 70%,based on preventable causes. (2011)
- For the National Mining Association, developed a statistical critique of a proposed quantitative risk assessment for respirable coal mine dust (2010-11)
- For the American Chemistry Council's Crystalline Silica Panel, modeled exposure-response relationships for inflammation-mediated lung diseases and lung cancer risk caused by exposure to quartz dust and crystalline silica. Presented key results and references to Canadian regulators in August, 2010. Health Canada subsequently proposed to regulate crystalline silica as a threshold carcinogen, breaking new ground in science-based regulatory risk analysis for this compound. (2010)
- For the National Pork Board, assessed human health risks of multidrug-resistant "superbug" bacterial infections originating from pigs (2010)
- For Philip Morris International, developed a quantitative model of age-specific risks of chronic obstructive pulmonary disease (COPD) as a function of smoking history (2008-2009). Clarified the interaction of molecular biological pathways in forming positive feedback loops that trigger and sustain this disease.

- For the National Pork Board, reviewed statistical and causal analyses of infant mortality and livestock production (2009)
- For the American Chemistry Council's Crystalline Silica Panel, critically reviewed draft regulatory risk assessments of crystalline silica as a toxic substance and possible lung carcinogen (2009)
- For Alpharma and Phibro Animal Health, assessed potential human health risks from use of tetracycline drugs in food animals (2009)
- Member of National Academy of Sciences (NAS) Committee on Methodological Improvements to the Department of Homeland Security's Biological Agent Risk Analysis. (2006-8)http://www8.nationalacademies.org/cp/CommitteeView.aspx?key=48682
- Member of Environmental Protection Agency Science Advisory Board (EPA SAB) on Asbestos.
- Member of Institute of Medicine's (IOM) Committee on Aerospace Medicine and the Medicine of Extreme Environments (2006-8), Committee to Review NASA's Space Flight Health Standards
- For Comcast Cable, worked in partnership with North Highland consulting company to develop a customer churn predictive risk assessment model that successfully predicts which customers are most likely to drop services and accounts – months before the drops occur, while there is still time to intervene. The model was statistically compared to existing commercial predictive models and found to be more than twice as effective in identifying high-risk customers early on.
- Delegate to First Session of the *Codex Ad Hoc Intergovernmental Task Force on Antimicrobial Resistance* held in Seoul, Republic of Korea, 23-26 October 2007.
- For Xcel Energy, worked in partnership with North Highland consulting company to develop a credit risk assessment model that predicts which customer accounts are likely to become bad debts six months or more in advance, when early intervention is still possible and profitable (2007)
- For Qwest Communications, worked in partnership with North Highland consulting company to analyze the amounts of time that employees spend managing internal communications (e-mails, meetings, conference calls, etc.) and identifying opportunities to improve internal communications efficiency (2006).
- For Philip Morris International, developed a quantitative model of age-specific risks of lung cancer as a function of smoking history. Estimated the potential reduction in lung cancer risk for smokers if cadmium were removed from tobacco products. (2005-2007)
- For Qwest Communications, worked in partnership with North Highland consulting company to quantify customer interest in and willingness to use improved web portals to manage telecommunications services (2006-7).
- For a sand and gravel company, examined the usefulness, for estimating risks and setting priorities, of aggregate exposure metrics for mixtures of asbestos and non-asbestos fibers and particles (2006)
- For a telecommunications equipment manufacturer, created a model to predict the numbers and types of equipment failures expected in future years, based on historical failure data for equipment items manufactured in different years. (2006)
- For a grass seed company, assessed the quantitative risks of gene flow from genetically modified grasses into the environment via pollen and seeds (2006). This approach was subsequently adopted by the United States District Court for the District of Columbia as a basis for risk calculations (http://www.centerforfoodsafety.org/pubs/GTBC_Doc_94_Opinion%202-5-07.pdf)
- For a homeowner's association, quantified the probable number and timing of future failures in copper pipes due to thermogalvanic corrosion. The model correctly predicted the near statistical certainty of additional pipe failures (2006).
- For the National Research Council of the National Academy of Sciences (NAS), advised on modeling potential failures and threats to spent nuclear fuel rods stored in different types of containers. This work contributed to the 2006 NAS report *Safety and Security of Commercial Spent Nuclear Fuel Storage*, http://www.nap.edu/openbook/0309096472/html/R4.html.
- For a large pharmaceutical company, analyzed Phase 3 clinical trial data and showed that a major drug is highly effective in reversing symptoms of a disease in patients in both the short run (within 1-2 weeks) and over a longer time frame. This statistical analysis of the time course of responses and the clusters of different response histories among patients explained several previously unresolved puzzles and made the meaning of the data clear for company statisticians and decision-makers. (2005)
- For a law firm specializing in construction defect litigation, developed an approach to sampling available homes or units to support efficient statistical inference from available data, even when some homes or units cannot be inspected. (2005)

- For Phibro Animal Health, developed a systems dynamics model of the evolution of bacterial illnesses and resistance in human and animal populations. (2005/2006)
- For the American Chemistry Council, assessed the potential human health risks associated with methyl bromide (2005).
- For Philip Morris Intenational, developed new ways to integrate partial knowledge of causal mechanisms of lung carcinogenesis with statistical information (mainly epidemiological and molecular epidemiological data) to obtain quantitative bounds on the fraction of lung cancers that can be prevented by removing specific components of exposure and/or blocking specific causal pathways. (2004-2006)
- For the cattle industry group R-CALF, developed a value of information (VOI) model for assessing the economic value of tracking Canadian cattle in the US in light of recent BSE findings (2004).
- For the Animal Health Institute, developed a Rapid Risk Rating Technique (RRRT) to quantify the human health impacts of food-borne pathogens and animal antimicrobial uses (1Q-04)
- For Elanco Animal Health, served on an Expert Panel to develop a mathematical model of the human health benefits of decreasing microbial loads in food animals (2003-4)
- For Phibro Animal Health, developed a quantitative risk assessment of the human health risks and benefits from continued use of virginiamycin in chickens and pigs (2002-4)
- For the Animal Health Institute, served on an Expert Panel to review human health risks from animal antibiotics (2002-3); developed a farm-to-fork risk simulation model for Campylobacter risks (2000-2002)
- For the U.S. Environmental Protection Agency, served as an external expert reviewer for the EPA's "Perchlorate Environmental Contamination: Toxicological Review and Risk Characterization" Draft External Review Document (March, 2002).
- For the World Health Organization (WHO), served as an external expert reviewer for a Consultation on *Campylobacter* risk assessment, in Geneva (August, 2001)
- For the U.S. Food and Drug Administration (FDA), (a) Reviewed proposed approaches to antimicrobial risk assessment (1999) http://www.fda.gov/cvm/antimicrobial/tonycox/index.htm; and (b) Proposed a decision-analytic alternative to FDA's threshold approach for managing risks of resistant strains of pathogenic bacteria due to use of antibiotics in animals (2001).The FDA at first strongly rejected Dr. Cox's advice and testimony on how to do antimicrobial risk assessment correctly (with considerable acrimony, in the context of enrofloxacin litigation), but has subsequently had Dr. Cox visit to discuss severalantimicrobial risk assessments, and has sought Dr. Cox's views on howto do better risk analysis.
- For the U.S. EPA, served as expert external reviewer and contributor to *Review of Uncertainty and Variability Analysis In IRIS for Eight Substances.*http://www.epa.gov/ncea/hlthfx_iris.htm
- Created computer simulation models (PBPK and PD) of dose-time-response relations for low-level exposures to chemical carcinogens, for Exxon Biomedical Sciences (EBSI). Developed an artificial intelligence method for improving prediction of likely human chemical carcinogens, also for EBSI.
- Created a discrete-event stochastic simulation model of the human health risks associated with Ciprofloxacin resistance in Camplyobacterjejuni induced by use of Enrofloxacin in chickens, for the Animal Health Institute (AHI). http://www.cvmbs.colostate.edu/cveadss/schedule/SchedulePage.htm
- Critically reviewed epidemiological studies of diesel exhaust and human lung cancer risk, for the Engine Manufacturers Association.
- For the American Petroleum Institute (API), created a computer simulation model of bone marrow and blood cell toxicity caused by cyclophosphamide, an immunosuppressive drug. Designed laboratory experiments to validate the model's predictions. Analyzed clinical and laboratory data to test model's predictive validity. Prepared a software release so that other scientists could use the model.
- Reviewed literature on air pollution and human lung cancer risks, for the American Petroleum Institute.
- Applied adaptive spatial sampling to optimize search and clean-up efforts for remediating residential properties around an abandoned hazardous waste site (for AlliedSignal)
- Reassessed human cancer risks from 1,3-butadiene using pharmacokinetic modeling to adjust for interspecies differences in internal doses of epoxybutene (for the Chemical Manufacturers Association)
- Reassessed the human leukemia risks from benzene exposure using a physiologically-based pharmacokinetic (PBPK) model to calculate internal dose (for the American Petroleum Association)
- Reviewed design of an initiation-promotion experiment for studying the potential carcinogenicity of a rubber additive, for Goodyear Tire and Rubber Company.

- Developed a general physiologically-based pharmacokinetic (PBPK) modeling software tool for rapidly developing high-quality PBPK models (with ENSR Consulting and Engineering, Inc.)
- Reviewed artificial intelligence approaches to characterizing uncertain health risks using weight of evidence, nonmonotonic, and other uncertainty analysis (for Lawrence Berkeley National Laboratory)
- Assessed potential health risks associated with occupational exposure to herbicides among roadside workers, using pharmacokinetic models, for a Fortune 100 chemical manufacturer.
- Recommendation of cleanup priorities for a large hazardous waste site in Canada
- Developed a prototype computer model for biologically based risk assessment of chemical carcinogen risks, for the Western States Petroleum Association (WSPA) and the American Petroleum Institute (API)
- Reviewed new biostatistical and "biologically based" approaches to cancer risk analysis, for the California Department of Health Services
- Reviewed regulatory history of benzene risk assessments and of biomathematical approaches to modelingleukemogenesis for the Western Oil and Gas Association and the American Petroleum Institute
- Prototype computer modeling of the AIDS epidemic (with Arthur D. Little, Inc.)
- Designed a 2-year bioassay experiment for isoprene. Analyzed and reported the resulting experimental data for a multi-client, multinational industry group coordinated by Exxon Biomedical Sciences.
- Accident risk analysis and consequence analysis of a petrochemical storage facility in California, for a California-based environmental consulting firm
- Implemented a Macintosh version of a physiologically-based pharmacokinetic (PBPK) model for benzene pharmacokinetics and total metabolism in rodents and humans, for the API
- Explored new mathematical approaches and conceptual frameworks for dealing with scientific uncertainties in biologically-based risk assessment, for the Western States Petroleum Association (WSPA)
- Created an interactive data analysis and graphics package for determining the degree of worker protection provided by different respirators, filters, and face masks (with Arthur D. Little, Inc.)
- Microeconomic and applied probability modeling of insurance company business risks for use in tax litigation (with Arthur D. Little, Inc.)
- Critically reviewed a transportation risk analysis for liquefied natural gas (LNG) operations in the St. Lawrence seaway.
- Reviewed progress since 1985 in using decision analysis for accident risk assessments.
- Implemented an experimental "intelligent" data base management system for chemical health effects data bases (with Exxon Biomedical Sciences, Inc.)
- Uncertainty analysis of PBPK modeling and risk analyses, accounting for model uncertainties and population heterogeneity, for the American Industrial Health Council.
- Developed new statistical techniques to predict cancer risks associated with mineral oils, for Mobil Oil.

DATA MINING AND STATISTICAL MODELING AND PREDICTIVE ANALYTICS EXPERIENCE

- For the American Chemistry Council, quantified how well *in vivo* test results for rodent carcinogens could be predicted from much less expensive high-throughput *in vitro* test results. (2014-15)
- For the American Chemistry Council, applied machine-learning algorithms to quantify how well *in vivo* test results for endocrine disruptors could be predicted from much less expensive high-throughput *in vitro* test results. (2013-14)
- For TriZetto, assessed healthcare predictive analytics trends and vendor offerings, advised top management on predictive analytics technology acquisitions (2012)
- For Rogers Communications, developed causal models of customer satisfaction; identified high-impact interventions for improving customer satisfaction; helped to develop achievable targets and strategies for improving customer experiences in different channels (2011)
- Delivered a statistical analysis of the causal drivers of customer satisfaction to top executives at Comcast Cable; identified realistic targets and interventions for improving customer satisfaction (2010-11).
- For a top cable company, worked in partnership with North Highland consulting company to deliver a predictive model that identifies which customers are most likely to drop accounts, well before the event and with much higher accuracy than previous models. (2008)
- For an energy utility, worked in partnership with North Highland consulting company to deliver a predictive model of customer bad debt and account write-offs that greatly extended the lead time over which high-risk customers could be identified and targeted for intervention. (2007)
- For a telecommunications company, worked in partnership with North Highland consulting company to develop a predictive model of customer marketing channel choice, and usage as a function of quality of channel experience (e.g., for web site, call center, retail store, and other channels.) Used the model to quantify financial impacts of improving web-based customer care. (2006)
- Also in partnership with North Highland consulting company, analyzed employee survey data for a major telecommunications provider and quantified patterns of internal communications (conference calls, managing e-mail, company news letters and bulletins, meetings, etc.); time spent on these activities by employees with different job roles and in different VP areas; and potential to reduce employee burden and improve the value and efficiency of internal communications. (2006)
- For a European wireless telecommunications provider, analyzed customer data to help develop more predictive segments; held a one-day intensive course in Brussels on advanced statistical models and methods for quantifying customer value in the short and long runs, based on probability and statistics models of customer behaviors in response to company offers. (2005)
- In 2004, delivered to an international telecommunications company a needs-based predictive segmentation model for cell phone customers.
- In 2003, in partnership with North Highland consulting company, delivered to a directory company a credit scoring and data mining model for identifying customers at greatest risk of defaulting on Yellow Pages agreements.
- In April, 2002, delivered to an internet services provider (ISP) a decision-support model for predicting customers with the highest churn potential and recommending specific interventions to reduce churn. This system was found by the client to reduce churn by over 40% within 4 months among at-risk customers.
- In March, 2002, delivered to a financial services company a set of predictive clusters for simultaneously predicting churn, upsell, and cross-sell potentials for existing customers. The predictive validity, stability, and high practical value of the predictive clusters were confirmed by the client in 2003 and 2004.

- In October, 2001, completed a study to identify ways to predict which competitive local exchange carrier (CLEC) customers would experience the most revenue growth in the next quarter and which would be most likely to drop accounts.
- In August, 2001, completed an analysis of insurance customer data showing that combining information from homeowner, auto, and other insurance lines using classification trees and transition models could dramatically improve accurate identification of cross-sell, up-sell, and retention opportunities.
- In 2000, completed a study of purchasing patterns among large business customers for Qwest communications. The results show that a few key products, together with factors such as account age, predict likely stability or churn of customers, as well as likely growth potential.
- In 2000, delivered to statistical analyses of the effects of U S WEST and competitor advertising and publicity (including brand/service commercials, direct mail, and news stories) on customer ratings of value and loyalty.
- Analyzed marketing data for AT&T-TCI to determine which current cable customers are most likely to switch to digital cable in the next quarter, based on current cable, telephony, and demographic risk factors.
- Created and validated a statistical (semi-Markov state transition) risk model to predict product and account attrition among U S WEST customers. Delivered to the CRMS group in U S WEST Communications a predictive model for identifying the likely future purchasing, product-drop, and account disconnect behaviors of individual customers. The new model has significantly greater predictive power than previous ones, achieving lifts of several hundred percent on the task of predicting which 10% of customers are most likely to buy specific products in the next few months.
- Developed new statistical optimal matching procedures to decide which products to offer which customers to maximize average revenue yield and lifetime revenue value for U S WEST Communications. Demonstrated a potential increase of over 40% for short-term revenues. 15% revenue increase was achieved in a preliminary in-market trial of intelligent scripting.
- Used a new causal modeling and data-mining technique to predict likely future product purchases from past purchase data and demographics, for U S WEST Consumer Services Group.
- Created a new forecasting model for application to short-tem and cross-sectional market data. The new method combined classification tree analysis with compartmental flow simulation. Applied to real data, it successfully allowed growth in demand for access lines to be predicted as accurately using less than 6 months of data as was previously possible using over 5 years of data with conventional time series forecasting methods. The forecasts were used by U S WEST Communications in 1997.
- Created and implemented a combined machine-learning/transition simulation forecasting technique to use detailed call records to more accurately predict traffic loads arriving at different locations within a wireless network for PrimeCo Personal Communications Services Ltd.
- Developed a simulation-based model of cable customer transitions among different behaviors (adding and dropping basic and enhanced cable services, switching among services and locations, etc.) for TCI.
- Analyzed cable franchise data for over 400 TCI cable systems to identify predictors of service quality perceptions and churn. Successfully identified unexpected demographic predictors of profitability and satisfaction.
- Analyzed macroeconomic data and survey data for a consortium of Indonesian companies to predict the penetration of telephony, PCs, internet services, and cable over the next 15 years.

CONSTRUCTION DEFECT LITIGATION SUPPORT EXPERIENCE

Dr. Cox has testified as an expert statistician in numerous construction defect cases, typically seeking to clarify the types of valid statistical inferences about risks and defects that can be drawn from limited sample data. Dr. Cox has been deposed on statistical issues in the following construction defect cases, among others, since 2006.

Note: Arizona cases have generally been in Maricpoa County.

- *Aberle v. Brookfield Homes* Deposition in Costa Mesa, California, 12/4/2012
- *Age vs. DR Horton* 4/9/2015
- *Amezcua/Pua v. DR Horton* Deposition in Arizona, 2/2/2010
- *Amukamara/Larissa by Forecast* Deposition in Arizona, 4/10/2007
- *Arrants v. D.R. Horton* Deposition in Arizona, 8/3/2010
- *Aspen Creek* Deposition in Arizona, 5/22/07
- *D.R. Horton, Inc.-Denver vs. Canyon Creek Condominium Association, Inc.* Deposition in Colorado, 12/10/2010
- *Centercrest* Deposition in Arizona, 3/14/2006
- *Chaignot v. Beazer* Deposition in Arizona, 4/22/2010
- *Clark vs. WCHB* (Mira Vista) Deposition 8/2/2013
- *Cummings v. Lenar*Deposition in Arizona, 9/21/2006
- *Dancy* Deposition in Arizona, 11/09/2006
- *Ensley et al. vs. Forecast Homes* Deposition and trial in Arizona, 11/09/2009
- *Frye Park Townhomes HOA v. Patterson Development LP* Deposition in Arizona, 4/22/2010
- *Goree v. Monterey Homes* Deposition in Arizona, 11/30/2006
- *Greenwood Estates* Deposition in Arizona, 10/11/2010
- *Hobbs vs. Elliott* Deposition in Sacramento, CA, 4/1/2013
- *Johnson v. Pulte* Deposition in California, 4/4/2014
- *Kerby Estates* testified in arbitraton in Phoenix, Arizona 8/16/12, 8/17/2012, and 8/13/2012
- *Landmark Towers* Deposition in Arizona, 7/29/11
- *Levinson v. Del Webb* testified to arbitration panel in Phoenix, Arizona, 2/5/2013
- *Magic Ranch by Richmond America* Deposition in Denver, Colorado,12/13/2011
- *Montage* Deposition in Phoenix, Arizona, 8/20/2013
- *Paloma Paseo* Deposition in Arizona, 10/13/2007
- *Premier* Deposition in Arizona, 3/10/2009
- *Raintree* Deposition in Arizona, 8/3/2007
- *Richards vs. Del Webb*; see *Levinson v. Del Webb*
- *Sun City Grand* testified to arbitration panel in Phoenix, Arizona, 7/22/2011
- *Terravita*Deposition in Arizona, 10/6/2006
- *Third Street Lofts* Deposition in San Francisco, 2/26/2013
- *Windrose East* Deposition in Arizona, 3/10/2009

TELECOMMUNICATIONS NETWORK DESIGN AND OPTIMIZATION EXPERIENCE

After leaving U S WEST Advanced Technologies, Dr. Cox led the following projects.

- Development and delivery of packet data and wireless network planning software tools to support design, capacity planning, routing, and restoration of traffic in robust, resilient networks for a major telecommunications equipment manufacturer (2012-2015)
- Development and delivery of SONET-DWDM ring and mesh network planning software tools that allow for unspecified (any-to-any) demands and incremental planning with ring, mesh, or hybrid protection and resilience against multiple simultaneous fiber cuts or other failuresfor a major telecommunications equipment manufacturer ((2005-2015).
- Led delivery of hybrid ring/mesh network planning software tool to Sprint (2004)
- Led delivery of SONET-DWDM mesh topology design tool to Tellabs, Inc. (2003)
- Developed network planning, optimization, and risk analysis tools for a satellite company (2002)
- Created a competitive cost model for Sprint's national optical network (2002)
- Delivered a Passive Optical Network (PON) configurator tool to a PON equipment vendor (2002)
- Delivered to Sprint a port-level SONET ring planning tool. An initial version of the tool was successfully used in creating Sprint's 2002 network build plan (2001)
- Delivered to Redback Networks a card-level SONET ring planning and optimization tool (2001). This software tool is now marketed commercially by Redback Networks.
- Delivered to Sprint a dark fiber network configuration planning tool, incorporating a proprietary genetic algorithm, that reduced costs of metro-area networks by over 50% compared to manual solutions. (2001 for fiber-only version and wireless link options)
- Delivered to Tellium a Dense Wave Division Multiplexing (DWDM) mesh topology design tool, marketed commercially as StarNet Planner. (2000)
- Delivered to Kestrel Solutions a SONET Ring Planning tool for optimizing placement of optical add-drop multiplexer components in optical ring networks. (2000)
- Created a new design for a backhaul network in Colorado that saved AT&T Wireless over 20% on their monthly backhaul charges. The new design, based on large-scale integer programming optimization, re-assigned traffic to hubs and recommended adding two new hubs to reduce system costs. (1999)
- For Sprint PCS, analyzed market demand forecasts and switching and interconnect costs. Led development of aa 20-period network growth and capacity planning and optimization software model. Identified a way to save over $1M (approximately 10%) of network capital expenses for a small city by reconfiguring the initial choice of switch modules to allow a more efficient capacity expansion growth path (1997).
- For Cox California PCS, led development of a backhaul network optimization program, solved via a new genetic algorithm, that reduced monthly backhaul costs by over 10% through more efficient of digital circuits to hubs and more economical use of SONET facilities.
- For PrimeCo Personal Communications Services, Ltd., created an optimization model of Multi-Channel Controller Card assignment and inventory management to reduce the costs of expanding network capacity through base station capacity upgrades.

PREVIOUS INDUSTRY EXPERIENCE

Before starting Cox Associates in 1986, Dr. Cox consulted in statistics, health and safety risk analysis, operations research, computer science, and econometrics for Arthur D. Little, Inc. He managed multimillion dollar AI risk analysis software development projects for the U S Air Force and led cases covering environmental fate and transport modeling of pollutants, risk analyses for transportation and processing facilities, reliability modeling of complex systems, and a variety of product development, insurance, R&D, computer security, and electric utility applications. He also served as an expert statistician and economist in support of several contract, tort, and administrative law cases and contributed to projects on USDA Standards and Grades for food products, statistical analysis of cigarette smoking data, safety of different types of protective masks, etc.

In 1984, Dr. Cox won Arthur D. Little's Presidential Award for outstanding contributions to the development of R&D planning and risk assessment methodologies for the Electric Power Research Institute (EPRI).

Prior to joining Arthur D. Little, Dr. Cox worked in societal risk analysis, experimental cognitive psychology of text processing, and applied statistics, at the American Institutes for Research (AIR). He co-authored a widely cited book on the effects of court sanctions on risks of chronic delinquent behavior, featured on *Good Morning America* (e.g., www.theatlantic.com/politics/crime/wilson.htm).

OTHER TECHNOLOGY EXPERTISE

Dr. Cox has testified as an expert in risk analysis before the Mining Safety and Health Administration (MSHA) on health risks from respirable coal dust (2011); before the Subcommittee on Energy and Power of the House Energy and Commerce Committee of Congress on health effects of air pollutants (2012); before the U. S. House Science Committee Subcomittee on Environment on Ensuring Open Science at EPA (February, 2014); before the Occupational Safety and Health Administration (OSHA) on crystalline silica risks (March, 2014); and before the House Subcommittee on Energy and Power and the Subcommittee on Commerce, Manufacturing, and Trade, on public health effects of ozone (June, 2015).

Dr. Cox was U S WEST Advanced Technologies' technical expert on statistics and econometrics, artificial intelligence, decision and risk analysis, and digital signal processing technologies, emphasizing pattern recognition, spoken language understanding, and machine-learning applications. He has appeared on CNN and has been interviewed by KGNU Radio, the *Wall Street Journal*, *Newsweek*, and various newspapers about profitable business applications of these and related technologies. He frequently represented U S WEST to regulators and utility commissions in explaining the purpose, value, and accomplishments of U S WEST's work these areas. Dr. Cox has been interviewed many times about topics related to human health risks of chemicals and antibiotics. A presentation by Dr. Cox on animal antibiotic risks is described in the Science section of *The New York Times* (2006)

Dr. Cox has also been interviewed by *The Washington Post* (2005). *The Denver Post* (2005) and other national newspapers about potential risks of BSE ("mad cow" disease) in the US from imported Canadian cattle. He has been interviewed and quoted on a variety of topics related to quantitative risk assessment and modeling, including dose-response hormesis, infectious diseases, threats to children's health from chemicals, resistance to animal antibiotics(2010), and terrorism risk analysis (2010).

PROFESSIONAL ACTIVITIES

Professional Societies

- Society for Risk Analysis (SRA). Fellow since 1993. (Fellowship recognizes lifetime contributions to the field of risk analysis)
- Institute for Operations Research and the Management Sciences (INFORMS), Edelman Laureate since 2006 (recognizing outstanding achievement in the practice of OR/MS.).
- Member of the American Statistical Association since 1993.

Positions Held

- Editor-in-Chief, *Risk Analysis: An International Journal*. 2013-Present
- President, Rocky Mountain Chapter, Institute for Operations Research and Management Science (INFORMS) 2013-2014
- Treasurer of the Society for Risk Analysis (SRA), 2007-8; Treasurer-Elect, 2006
- Counselor for the 400-member ORSA Special Interest Group on Telecommunications, 1992
- Member of the International Life Sciences Institute's (ILSI's) Risk Science Institute Cancer Dose-Response Working Group in 1991-1992.
- Counselor, Rocky Mountain Chapter of the SRA, 1990-1991
- Secretary and co-founder, New England Chapter of the SRA, 1985-86

Selected Awards and Honors

- *2015Best Published Papers Demonstrating an Application of Risk Assessment: Top Five Papers* award, awarded by the Risk Assessment Specialty Section of the Society of Toxicology, March, 2015
- 2012 Inducted into the National Academy of Engineering"For applications of operations research and risk analysis to significant national problems."
- *2011 Best Paper Award*, Society for Risk Analysis, for A causal model of chronic obstructive pulmonary disease (COPD) risk.http://www.sra.org/journal_best_paper_awards.php
- *2008 Innocentive Challenge Award*. In 2008, Dr. Cox's proprietary solution to a challenge on "Statistical Methods to Predict Clinical Response" won an InnoCentive Award from Eli Lilly.
- *2007 Outstanding Practitioner Award*, recognizing excellent performance in the practice of risk analysis. Awarded by the Society for Risk Analysis. San Antonio, TX, December, 2007.
- *Outstanding Published Paper in 2006 Demonstrating an Application of Risk Assessment*, awarded by the Risk Assessment Specialty Section of the Society of Toxicology, March, 2007.
- *Franz Edelman Finalist Award*, for achievement in the practice of Operations Research and the Management Sciences, Institute for Operations Research and Management Science (INFORMS), 2006.
- *Best Reviewer, Decision Sciences*, for *Risk Analysis: An International Journal*. 2006
- *Best Paper Award*, Society for Risk Analysis, 2003 www.sra.org/newsletter/news0204.pdf
- *Best Paper Award*, Society for Risk Analysis, 2002, www.sra.org/news0203.pdf
- *POMS National Award Finalist* for paper: Cox LA, Bell G, Glover F. A new learning approach to process improvement in a telecommunications company. *Production and Operations Management*,4, 3, 217-227, 1995. Production and Operations Management Society
- *INFORMS Prize*, best real-world applications of operations research with substantial business value, 1994
- Fellow of the Society for Risk Analysis, 1993

At U S WEST Dr. Cox also received many awards. Under his leadership, in 1994, U S WEST won the prestigious INFORMS Prize, awarded annually to the company in the world that has best applied operations research methods in innovative ways that have had profound business impact. In 1991 Dr. Cox won U S WEST's Special Achievement Award for developing new approaches to business risk analysis widely applied by U S WEST International. In 1992, he won the U S WEST's Chairman's Award and two Special Achievement Awards for innovations in network design credited with saving U S WEST over $100M. In 1994, Dr. Cox won U S WEST's new President's Club and Circle of Excellence Awards for innovations in probabilistic analysis of customer choice behavior.

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LOUIS ANTHONY COX, JR. – PATENTS

Dr. Cox has applied risk analysis, statistical decision theory, and optimization principles to several fields in new ways. He is inventor or co-inventor of the following innovations.

Speech Synthesis Using Perceptual Linear Prediction Parameters (U.S. Pat. # 5,165,008, awarded November 17, 1992. Canadian Patent #2,074,418 awarded December 12, 1995.)

Method and System for Optimized Logistics Planning (U.S. Pat. # 5,450,317, awarded September 12, 1995, http://www.patents.ibm.com/details?pn=US05450317__)

Method and System for Designing Least Cost Local Access Networks
(U.S. Patent #5,508,999, awarded April 16, 1996.)

Method and System for Planning and Installing Communication Networks.
(U.S. Patent #5,515,367, awarded May 7, 1996.)

Automated system and method for voice processing.
(U.S. Patent #5655006, awarded August 5, 1997.)

Method and system for identifying a corrupted speech message signal.
(U.S. Patent #5,684,921, awarded November 4, 1997.)

Method for providing a linguistically competent dialogue with a computerized service representative. (U.S. Patent #5,685,000, awarded November 4, 1997.)

Method and system for developing network analysis and modeling with graphical objects. (U.S. Patent #5,715,432, awarded February 3, 1998)

Adaptive knowledge base of complex information through interactive voice dialogue.
(U.S. Patent # 5,774,860, awarded June 30, 1998)

Method and system for linguistic command processing in a video server environment.
(U.S. Patent #5,832,439, awarded November 3, 1998)

Architecture and method for providing interactive broadband products and services using existing telephone plant. (U.S. Patent #5,857,142, awarded January 4, 1999.)
http://www.patentstorm.us/patents/5857142.html

Method for annotating and editing voice messages via acoustic bullet points. (U.S. Patent #5,943,402, awarded August 24th, 1999, http://www.patents.ibm.com/details?pn=US05943402__)

Calendar system with direct and telephony networked voice control interface. (U.S. Patent #6,009,398, awarded December 28th, 1999,
http://www.patents.ibm.com/patlist?icnt=US&patent_number=6009398&x=27&y=11)

Method and system for designing a cellular communication system. (U.S. Patent #6,181,917, awarded January 30th, 2001, http://www.delphion.com/cgi-bin/viewpat.cmd/US06181917, http://www.patentstorm.us/patents/6181917.html)

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LOUIS ANTHONY COX, JR., PH.D.
SELECTED PUBLICATIONS

Books

Cox LA Jr. (Ed.) *Breakthroughs in Decision and Risk Analysis*. Wiley, 2015.

Cox, LA Jr. *Improving Risk Analysis*. Springer. New York. 2013.
(Reviewed at: https://people.maths.ox.ac.uk/trefethen/wegert_review_SIREVDec13.pdf)

Cox, LA Jr. *Risk Analysis of Complex and Uncertain Systems*. Springer. New York. 2009. (Reviewed at http://pubsonline.informs.org/doi/pdf/10.1287/inte.1100.0506.)

Cox, LA Jr. *Quantitative Health Risk Analysis Methods: Modeling the Human Health Impacts of Antibiotics Used in Food Animals*. Springer. New York. 2006.

Cox, LA Jr. *Risk Analysis: Foundations, Models and Methods*. Springer. New York. 2001. International Series in Operations Research & Management Science, 45.

Cox, LA Jr. and Ricci PF (eds), *New Risks: Issues and Management*. Plenum Press, 1990.

Murray, C.A., and LA Cox, Jr., *Beyond Probation: Juvenile Corrections and the Chronic Delinquent*. Sage Publications, Beverly Hills, CA, 1979.

Encyclopedias

Wiley Encyclopedia of Operations Research and Management Science. 2011.Area Editor for Decision Analysis, Risk Analysis, and Game Theory sections.

Wiley Encyclopedia of Quantitative Risk Analysis and Assessment, 2008 AreaEditor,Risk ManagementSection.

Edited Collections

Aven T., Cox LA Jr. *Simple Characterizations and Communication of Risks*. On-Line Special Issue of *Risk Analysis: An International Journal*. Wiley-Blackwell. 2016.

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Greenberg, M.R., and Cox, LA Jr. *Economics of Risk Analysis*. On-Line Special Issue of *Risk Analysis: An International Journal*. Wiley-Blackwell. 2014.

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Cox LA Jr. and Greenberg M.R. (Eds) *Advances in Terrorism Risk Analysis*. On-Line Special Issue of *Risk Analysis: An International Journal*. Wiley-Blackwell. 2011.

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Cox LA Jr. How accurately and consistently do laboratories measure workplace concentrations of respirable crystalline silica? *Regul Toxicol Pharmacol.* 2016 Nov;81:268-274.

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3. *Methods for Risk Analysis of the Transportation of Hazardous Materials.* Final Report to the OpenbaarLichmanRijnmond. Arthur D. Little, Inc., Cambridge, MA, 1982. (with A.S. Kalelkar and L.M. Bendixen)

4. *A Workshop on Dealing with Uncertainty in Risk Analysis.* Final Report to the Division of Policy Research and Analysis (PRA), National Science Foundation. Arthur D. Little, Inc., Cambridge, MA, 1983. (with H. Ojha, J. Fiksel)

5. *PERCO: A Model for Prioritization of Environmental Risks and Control Options at Hazardous Waste Sites.* Final Report to the Massachusetts Department of Environmental Quality Engineering (DEQE). Arthur D. Little, Cambridge, MA, 1983. (with J. Fiksel)

6. *Principles for the Use of De Minimis Concepts in Risk Regulation.* Final Report to the Division of Policy Research and Analysis (PRA), National Science Foundation. Arthur D. Little, Inc., Cambridge, MA, 1984. (with J. Fiksel, M.S. Baram, and J.R. Miyares)

7. *Analysis of Routine Occupational Risks Associated with Selected Electrical Energy Systems.* EPRI Report EA-4020, Electric Power Research Institute, Palo Alto, CA, 1985 (with A.S. Kalelkar and J. Fiksel)

8. *An Automated Threat Assessment Methodology for Security Risk Analysis.* Final Report to the U.S. Air Force Computer Security Program Office (AFCSPO). Arthur D. Little, Inc., Cambridge, MA, 1986.

9. *A Conceptual Framework for Research Planning at the Health Effects Institute.* Final Report to the Health Effects Institute (HEI), Arthur D. Little, Inc., Cambridge, MA, 1986.

10. *Predictions of Future Cancer Incidence Rates Among Nuclear Power Plant Employees.* Final Report to the American Nuclear Insurers and Mutual Atomic Energy Underwriters. Arthur D. Little, Inc., Cambridge, MA, 1987 (with J. Fiksel and G.S Young).

11. *Reassessing the Internal Doses in Humans and Animals from Inhalation of Butadiene.* Report to the Chemical Manufacturers Association. Cox Associates, Denver, CO, November, 1989.

12. *New Directions in Cancer Modeling and Risk Assessment for Benzene.* Final Report to the Western States Petroleum Association. Cox Associates, Denver, CO, July, 1990.

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17. *Uncertainty Analysis of PBPK Models.* Final Report to the American Industrial Health Council Delivered Dose Working Group. American Industrial Health Council, Washington, D.C., December, 1992.

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19. *Managing Statistical Uncertainties in PBPK Modeling.* American Industrial Health Council (AIHC), Washington, D.C., October, 1993.

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21. *Internal Dose and Uncertainty Analysis of Complex Risk Models.* Report to the American Industrial Health Council (AIHC). Cox Associates, Denver, CO, January, 1994.

22. *An Exact Analysis of the Multistage Model Explaining Dose-Response Concavity.* Report to the American Industrial Health Council (AIHC). Cox Associates, Denver, CO, February, 1994.

23. *Dealing with Uncertainties in a Biologically-Based Risk Assessment Model of Cyclophosphamide-Induced Leukemogenesis.* American Petroleum Institute, Health and Environmental Science. Report # DR70. Washington, D.C. May, 1994.

24. *Data Analysis and Risk Modeling of Lung Tumor Risks from Diesel Exhaust.* Report to the Western States Petroleum Association. Cox Associates, Denver, CO, March, 1995.

25. *Comments on EPA's Proposed Decisions on Standards for Particulate Matter and Ozone.* Final Report to the Engine Manufacturers Association. Cox Associates, Denver, CO. March 8, 1997. 38 pages

26. *Technical and Policy Issues in Regulating Particulate Matter (PM) Air Pollution: An Information Primer.* Draft Report to the American Petroleum Institute. Cox Associates, Denver, CO. March 31, 1997. 50 pages

27. *U S WEST Customer Attrition Modeling: Learning to Predict Customer Attrition Risk From Data.* Final Report to U S WEST Communications. Cox Associates, Denver, CO. August 14, 1997. 36 pages + Appendices

28. *Comments On OEHHA's 1997 Draft Risk Assessment For Diesel Exhaust.* Final Report to the Engine Manufacturers Association. Cox Associates, Denver, CO. 8-20, 1997. 34 pages.

29. *A Method to More Accurately Forecast Demand for Local Loop Products.* Final Report to U S WEST Communications. Cox Associates, Denver, CO. September 5th, 1997. 24 pages.

30. *Next Optimal Product Project: Optimal Statistical Matching of Product Offers to Customer Needs.* Final Report to U S WEST Communications. Cox Associates, Denver, CO. December 29th, 1997. 20 pages + Appendices

31. *TCI Customer Acquisition and Loss Model.* Final Report to TCI. Cox Associates, Denver, CO. January 9th, 1998. 31 pages + Appendices

32. *Comments On OEHHA's February, 1998 Draft Risk Assessment For Diesel Exhaust.* Final Report to the Engine Manufacturers Association. Cox Associates, Denver, CO. April 13th, 1998. 47 pages.

33. *Demographic Clusters Predicting Perceived Service Quality: Summary. Report to TCI.* Cox Associates, Denver, CO. April 17th, 1998. 8 pages.

34. *Minimizing Monthly Lease Costs in AT&T Wireless's Denver-Area Backhaul Network: Results of a Pilot Project on Cost Reduction.* Draft Report to AT&T Wireless. Cox Associates, Denver, CO. May 18th, 1998.

35. *Switch Capacity and Resources: Technical Background for Forecasting.* Report to U S WEST Advanced Technologies. Cox Associates, Denver, CO. July 30th, 1998. 15 pages + appendices and hyperlinks

36. *A Statistical Decision Approach for Sampling Ordnance and Explosives.* Final Report to the Army U.S. Army Corps of Engineers, Huntsville, Alabama. Montgomery Watson, Inc., Salt Lake City, UT and Cox Associates, Denver, CO. September, 1998. 39 pages.

37. *Network capacity forecasting and planning process: Results of a planning workshop.* Final report to A T & T Wireless Systems, National Business Planning. Cox Associates, Denver, CO. December 30, 1998. 19 pages plus appendices.

38. *Minimizing network facility costs via DWDM overlays: Results of a pilot project on cost reduction.* Final report to Tellium. Cox Associates, Denver, CO. April 15th, 1999. 19 pages plus appendices.

39. *An Investigation of System Identification Techniques for Simulation Model Abstraction.* Final Technical Report, Air Force Research Laboratory Information Directorate. Rome Research Site. Rome, New York. February, 2000. 84 pages. (with D.A. Popken) http://www.stormingmedia.us/58/5825/A582573.html

40. *Review of Uncertainty and Variability Analysis In IRIS for Eight Substances.* Final Report to Versar. Cox Associates, Denver, CO. June 14th, 2000. 28 pages plus appendices. http://www.epa.gov/ncea/hlthfx_iris.htm

41. *Optical Network Design Tools: Optimization Software to Support Migrating to Optical Networks.* Final Report to Nortel Networks. Cox Associates, Denver, CO. July 2000. 45 pages plus appendices.

42. *A Rapid Study of Classic U S WEST Business Customer Attrition and Purchases: Results.* Final Report to Qwest Communications. Cox Associates, Denver, CO. December, 2000. 36 pages.

43. *A Dynamic Simulation Model of Campylobacter Illnesses.* Final Report to Animal Health Institute. Cox Associates, Denver, CO. February, 2001. 68 pages plus appendices.

44. *Quantifying Public Health Risk Reduction Benefits.* AWWA Research Foundation, 2002. (Raucher, R.S. *et al.*) 205 pages + appendices.

45. *Animal Antimicrobial Feed Additives and Human Health: A Guide to Risk Analysis.* Animal Health Institute and Cox Associates. February, 2003. 51 pages.

46. *Rapid, Accurate Risk Ratings of Animal Antimicrobials.*Final Report to Animal Health Institute. Cox Associates, Denver, CO. July, 2003. 54 pages.

47. *Quantitative Human Health Risks FromVirginiamycin Use in Food Animals in Australia.* Final Report to Animal Health Institute. Cox Associates, Denver, CO. August, 2003. 19 pages + Appendices.

48. *Computer simulation of dynamic interactions among VOC hematotoxins in bone marrow*. Final Report to American Chemistry Council. Cox Associates, Denver, CO. September, 2003. 30 pages + Appendices.

49. *Quantitative Risk Assessment of Avilamycin Use in the US.* Draft Final Report to Elanco, Cox Associates, Denver, CO. October, 2003. 32 pages + Appendices.

50. *Human Health Risk Assessment of Macrolide Use in US Food Animals.* Draft Final Report to Elanco, Cox Associates, Denver, CO. October, 2003. 26 pages + Appendices.

51. NationalAcademy of Sciences National Research Council report on *Safety and Security of Commercial Spent Nuclear Fuel Storage*. National Academies Press. Washington, D.C., 2006. http://www.nap.edu/openbook/0309096472/html/R4.html

52. *Risk Assessment of Penicillin/Aminopenicillin Resistance in Enterococci Due to Continued Use of Penicillins in Food Animals*. Final Report to Alpharma. Cox Associates, Denver, CO. June, 2007. 57 pages. (With Dr. Douglas Popken)

53. National Research Council. Committee on Methodological Improvements to the Department of Homeland Security's Biological Agent Risk Analysis. *Interim Report on Methodological Improvements to the Department of Homeland Security's Biological Agent Risk Analysis*. National Academies Press**.** Washington, D.C., 2007.

54. *Risk Assessment of Lactrol™ in Distiller Grain Animal Feeds.*Final Report to Phibro Animal Health. Cox Associates, Denver, CO. October, 2009. (With Dr. Douglas Popken)

55. *Human Health Risk Assessment of Eliminating the Withdrawal Period for Chlortetracycline Feed Products in Swine*. Final Report to ADM. Cox Associates, Denver, CO. November, 2011. 30 pages. (With Dr. Douglas Popken)

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LOUIS ANTHONY COX, JR., PH.D.
SELECTED TALKS, LECTURES, AND PRESENTATIONS

1. "Biological bases of low-dose nonlinearity for chemical carcinogens," invited talk presented at the Society for Risk Analysis Annual Meeting, New Orleans, Hotel Intercontinental, October 7-10, 1990.

2. "Biologically-based risk assessment," invited seminar given to the EPA and the Chemical Industry Institute of Toxicology, Research Triangle Park, North Carolina, May 22, 1991.

3. "Dealing with uncertainty in PBPK modeling," presentation to the American Industrial Health Counsel (AIHC) Delivered Dose Working Group, Washington, D.C., November 14, 1991.

4. "PBPK modeling in biologically-based risk analysis," invited talk to the Houston Chapter of the Society for Risk Analysis, Houston, TX, November 20, 1991.

5. "Why offer doctoral programs in risk analysis?", invited presentation and panel discussion at the Society for Risk Analysis Annual Meeting, Baltimore, MD, December, 1991.

6. "Challenges and promises of risk assessment," invited seminar presented to the U S Department of Agriculture's APHIS program, Hyattsville, MD, January 7, 1992.

7. "Recent advances in decision analysis," invited graduate seminar presented at the University of Colorado business school, March 18, 1992.

8. "Economic research and modeling in the telecommunications industry," invited talk given at the Public Utilities Regulatory Training Institute (PURTI) visit to U S WEST Advanced Technologies, May, 1992.

12. "New methods for calculating upper confidence bounds of multistage dose-response models," invited seminar given at the California Environmental Protection Agency, Berkeley, CA, September 4, 1992.

13. "Scientific research needs in benzene risk assessment," invited presentation and panel discussion presented at the American Petroleum Institute workshop on Mechanisms of Benzene Toxicity as a Basis for Risk Assessment, Airlie Foundation, Warrenton, VA, September 21-23, 1992.

14. "Decisions with unknown consequences: A random valuation model," presented at the Society for Risk Analysis 1992 Annual Meeting, December 6-9, Hotel del Coronado, San Diego, CA, December 6-9. 1992.

15. "Relating biologically-based risk models to population data," presented at the Society for Risk Analysis 1992 Annual Meeting, December 6-9, Hotel del Coronado, San Diego, CA, December 6-9. 1992.

16. "Incorporating biological response information into risk prediction," poster presented at the Society for Risk Analysis 1992 Annual Meeting, December 6-9, Hotel del Coronado, San Diego, CA, December 6-9. 1992.

17. "Minimizing the average costs of fault diagnosis in complex systems," poster presented at the *Fourth International Workshop on Artificial Intelligence and Statistics,*Fort Lauderdale, Florida, January 4-6, 1993.

18. "Uncertainty analysis of complex risk models: Bayesian and non-Bayesian approaches" invited seminar presented at the Harvard School of Public Health, January 26, 1993.

19. "New approaches to confidence band estimation in parametric statistical models," invited seminar presented at the Environmental Protection Agency, February 8, 1993.

20. "Statistical and artificial intelligence analysis of isoprene bioassay data", talk presented at Battelle Columbus Laboratories, September 25, 1993.

21. "Optimal project selection in a stochastic funding model", talk presented (with L. Lu and Y. Qiu) at the ORSA/TIMS Joint National Meeting, Hyatt Regency, Phoenix Arizona, October 31-November 3, 1993.

22. "A biologically-based risk assessment (BBRA) model of leukemogenesis induced by cyclophosphamide", Poster presented by Dr. Mary Paxton at the workshop on *Biological Mechanisms and Quantitative Risk Assessment: From Experimental Design to Risk Characterization.*ResearchTrianglePark, North Carolina, November 1-4, 1993.

23. "Coping with uncertainties in a computer simulation model of cyclophosphamide-induced leukemogenesis," invited talk, 1993 Annual Meeting of the Society for Risk Analysis, Savannah, Georgia, December 5-8, 1993.

24. "Machine learning for uncertainty management in complex risk models", invited talk presented at The Institute of Management Sciences (TIMS) and Operations Research Society of America (ORSA) joint meeting, Boston Marriott Copley Place, Boston, Massachusetts, April 24-27, 1994.

25. "Reducing the expected costs of classification trees through local search" (presented with X. Sun and Y. Qiu), invited talk, TIMS/ORSA joint meeting, Boston Marriott Copley Place, Boston, Massachusetts, April 24-27, 1994.

26. "Planning survivable interoffice networks using SPT", (coauthored with and presented by Y. Qiu), invited talk presented at TIMS/ORSA joint meeting, Boston Marriott Copley Place, Boston, Massachusetts, April 24-27, 1994.

27. "Least-cost inspecting and repairing strategies for multicomponent systems," (with X. Sun and Y. Qiu), invited talk presented at The Institute of Management Sciences (TIMS) 1994 annual conference, University of Alaska at Anchorage, June 12-15,1994.

28. "More informative confidence limits for dose-response functions using Monte-Carlo simulation: The Data Cube approach." Invited seminar presented at the California EPA, Office of Environmental Health Hazard Assessment, Berkeley, CA, August 12, 1994.

29. "New frontiers in toxicology information: Technologies of the informaion superhighway." Keynote address, *21st Annual Toxicology Information Roundtable,* MICROMEDEX Toxicology, Medicine, and Environmental Series, Westin Hotel at Tabor Center, Denver, Colorado, October 13, 1994.

30. "Nonlinear dose-time-response relations for chemicalleukemogens: Computer simulation of the roles of cell kinetics and hematotoxicity." Invited talk presented at the *Symposium on Recent Developments in Benzene Epidemiology and Toxicology.* Villa Florence Hotel. San Francisco, CA. November 29-30, 1994.

31. "A simulation method for constructing more informative upper confidence limits on dose-response functions," invited talk presented at the 1994 Annual Meeting of the Society for Risk Analysis, Hyatt Regency at the InnerHarbor, Baltimore, MD, December 4-7, 1994.
http://www.riskworld.com/Abstract/1994/sraam94/ab4aa072.htm

32. "Nonlinear cell kinetics can explain observed anomalies in dose-time-response patterns," Poster session (presented with Dr. M.B. Paxton), 1994 Annual Meeting of the Society for Risk Analysis, Hyatt Regency at the Inner Harbor, Baltimore, MD, December 4-7, 1994.
http://www.riskworld.com/Abstract/1994/sraam94/ab4aa249.htm

33. "Automated visualization and discovery of predictively useful biological response profiles in complex data set" (with Dr. M. Bird), presented at the 1994 Annual Meeting of the Society for Risk Analysis, Hyatt Regency at the Inner Harbor, Baltimore, MD, December 4-7, 1994.

34. "PBPK modeling and mechanistic risk assessment: Using scientific information to improve risk assessment." Lecture given at the CACI/CDPHE Risk Assessment Workshop, Denver, CO, January 31, 1995.

35. "Reassessing benzene risks using internal doses and Monte-Carlo uncertainty analysis", invited talk presented at Benzene '95, Rutgers, New Jersey, June, 1995.

36. "Analysis of isoprene bioassay data: Risk assesment implications", invited talk presented at the International Symposium: Evaluation of Butadiene and Isoprene Health Risks", Blaine, Washington, June 27-29, 1995.

37. "Reanalyzing human lung cancer risks from diesel exhaust using a multivariate risk model", invited talk presented at the Diesel Risk Assessment Workshop, San Francisco, January 29-30, 1996.

38. "Biomathematical modeling of chemically-induced myelotoxicity and potential applications to t-AML risk modeling", invited talk presented at the University of California, Berkeley Workshop on *Modeling Chemically-Induced Leukemia -- Implications for Benzene Risk Assessment.* Yountville, CA, February 11-13, 1996. (Report by M.T. Smith and E.W. Fanning published in *Leukemia Research,* 1997.)

39. "Scheduling switch replacements with randomly decreasing deadlines", with S. Chiu and Y. Lee, presented at INFORMS 96, Washington, D.C., May 5-8, 1996.

40. "Optimal design of digital wireless networks" (with S. Chiu, J. Ryan, V. Corlew, S. Raghavan), presented by Dr. S. Chiu at IFORS Conference, Vancouver, May, 1996.

41. "A network design problem for multimedia broadband networks," presented by Dr. Cox for Dr. Y. Lee at INFORMS Spring meeting, Washington, D.C., May 5-8, 1996.

42. "Stochastic optimization in classification trees." *Fifth Society for Industrial and Applied Mathematics Conference on Optimization,*Victoria, British Columbia, May 20-22, 1996.

43. "Using data to improve business performance: Techniques and applications", invited talk given at the *Electric Power Research Institute (EPRI) 1996 Performance Measurement Workshop.* Loews Giorgio Hotel, Denver, CO. November 7, 1996.

44. "Uncertainty analysis of complex risk models," invited talk presented at the Society for Risk Analysis and International Society of Exposure Analysis, 1996 Annual Meeting, Fairmont Hotel, New Orleans, December 8-12, 1996. http://www.riskworld.com/Abstract/1996/SRAam96/ab6aa088.htm

45. "Decision models for uncertain hazards", invited talk presented at the Society for Risk Analysis and International Society of Exposure Analysis, 1996 Annual Meeting, Fairmont Hotel, New Orleans, December 8-12, 1996. http://www.riskworld.com/Abstract/1996/SRAam96/ab6aa134.htm

46. "Using classification trees to improve causal inferences in observational studies." Presented at the *Sixth International Workshop on Artificial Intelligence and Statistics.* Fort Lauderdale, Florida. January 4-7, 1997.

47. Testimony on health effects of particulate matter. Presented on behalf of the Engine Manufacturers Association at EPA's Public Hearings on Ozone and Particulate Matter National Ambient Air Quality Standards. Salt Lake City, January 14, 1997.

48. "Adaptive spatial sampling for inspection and cleanup at hazardous waste sites". Invited seminar given at AlliedSignal, Morristown, New Jersey. January 28, 1997.

49. "Dose-response relationships and benzene toxicology." Invited talk presented at the Toxicology Forum, 22nd Annual Winter Meeting. Loews L'Enfant Plaza Hotel, Washington, D.C. February 24-27, 1997.

50. "A computer model of hematotoxicity explaining experimental and clinical data for cyclophosphamide and benzene". Invited presentation, with Dr. M.B. Paxton, at the SOT Poster/Discussion session on "Benzene -- Toxicity, Mechanisms, and Pharmacokinetics", Abstract #839. 36th Annual Meeting of the Society of Toxicology. CincinnatiConventionCenter, March 11, 1997.

51. "Heuristics for improved design of telecommunications networks and services". Invited lecture in graduate seminar on Advanced Topics in Optimization. University of Colorado at Boulder. April 23, 1997.

52. "Nonlinear dose-time-response models for chemical carcinogens." Invited seminar, hosted by the University of Colorado at Denver Biomathematics Seminar, Denver, Colorado. April 30, 1997.

53. "Optimal sequential inspection of complex reliability systems with uncertain structure function and component reliabilities." Invited talk, presented at the INFORMS Spring meeting, San Diego, May 4-7, 1997.

54. "An integrated business simulation model for PCS companies." Invited talk, INFORMS Spring meeting, San Diego, May 4-7, 1997. (With W. Kuehner, K. Paige, J. Parker)

55. "Optimizing PCS backhaul networks: Should wireless network engineers care?" Invited talk, presented at the INFORMS Spring meeting, San Diego, May 4-7, 1997.

56. "Optimization modeling therapy for large, disorganized companies". Invited talk, presented at the INFORMS Spring meeting, San Diego, May 4-7, 1997.

57. "PM 2.5 and diesel exhaust health risks: Statistical *vs.* causal associations". Invited talk presented at University of California, Riverside and The California Trucking Association Conference on *Meeting the Environmental Challenge of the 21st Century*. World Truck Conference, Treasure Island Resort Hotel, Las Vegas, Nevada. May 13-15, 1997.

58. "A computer model of hematotoxicity explaining experimental and clinical data." Invited seminar, hosted by the University of Colorado at Denver Biomathematics Seminar, Denver, Colorado. November 19, 1997.

59. "Adaptive spatial sampling for investigating and remediating contaminated properties." Poster session presented at the Society for Risk Analysis 1997 Annual Meeting. Capitol Hilton Hotel, Washington, D.C., December, 1997. http://www.riskworld.com/Abstract/1997/SRAam97/ab7ab384.htm

60. "Directed acyclic graph algorithms for interpreting causality in ambiguous epidemiological data". Invited seminar, hosted by the University of Colorado at Denver's Biomathematics Seminar Series, Denver, Colorado. February 7th, 1998.

61. "Applied mathematics in telecommunications consulting". Invited seminar, hosted by University of Colorado at Denver's Optimization Seminar Series. http://www-math.cudenver.edu/optima/seminars.html. February 11, 1998.

62. "Dynamic hierarchical packing minimizes costs of wireless switch capacity expansion." Invited talk presented at the 1998 INFORMS Telecommunications Conference, Sheraton Inn, Boca Rotan, Florida. March 8-11, 1998. http://www.cstp.umkc.edu/informs-telecom/4th_conf_dir/adv_prog_detail.html

63. "More accurate forecasting of demand for telecommunications products using customer information profiles and purchase transition data." Invited talk presented at the 1998 INFORMS Telecommunications Conference, Sheraton Inn, Boca Rotan, Florida. March 8-11, 1998. http://www.cstp.umkc.edu/informs-telecom/4th_conf_dir/adv_prog_detail.html

64. "Exact mathematical analysis of multistage carcinogenesis models," Invited seminar, hosted by the University of Colorado at Denver's Biomathematics Seminar Series, Denver, Colorado. April 10th, 1998.

65. "Association *vs.* causation: Notes and comments on EPA's draft risk assessment for diesel exhaust", presented to the Clean Air Science Advisory Committee (CASAC), Governor's Inn, Research Triangle Park, NC, May 5th, 1998.

66. "Advances in data mining: Case studies from the telecommunications industry." Invited lecture, University of Denver, Daniels School of Business, capstone course in data technologies for business applications, May 11th, 1998.

67. "Advances in biologically-based risk assessment". Invited seminar given at Exxon Biomedical Sciences, Inc., Mettlers Road, New Jersey. June 1, 1998.

68. "New methods for identifying quantitative structure-activity and activity-activity relations." Invited seminar given at Exxon Biomedical Sciences, Inc., Mettlers Road, New Jersey. June 1, 1998.

69. "Simulation-optimization heuristics for sampling contaminated soils." Invited presentation, Biomathematics and Statistics Seminar, University of Colorado at Denver Mathematics Department. September 24, 1998.

70. "Identifying customer demand processes from data." Presentation given (with Dr. Douglas Popken) at INFORMS 98, SeattleConventionCenter, October 26th, 1998.

71. "Optimal statistical sampling of contaminated soils." Invited lecture, Seminar in Advanced Topics in Optimization, U. of Colorado at Boulder, December 2nd, 1998

72. "Computational Bayesian methods for assessing uncertain exposures." Lecture in the 1998 Workshop on *Probabilistic Methods in Risk Assessment.* Society for Risk Analysis Annual Meeting, Phoenix, Arizona. December 6th, 1998.

73. "Axiomatic Definitions of Risk". Poster presented at Society for Risk Analysis Annual Meeting, Phoenix, Arizona. December 9th, 1998. http://www.sra.org/events.htm#annual

74. "A simulation-optimization approach to cost-effective sampling and cleanup of contaminated areas." Talk presented at the Society for Risk Analysis 1998 Annual Meeting, Phoenix, Arizona. December 9th, 1998. http://www.sra.org/events.htm#annual

75. "A biologically motivated model of hematotoxicity: Model overview and empirical evaluation." Presented at the *HematotoxicityModeling Workshop*, Institute of Population Health, University of Ottowa. December 15th, 1998.

76. "Causal mechanisms and classification trees for predicting chemical carcinogens." Presented (by Professor D. Fisher for LA Cox) at the *Seventh International Workshop on Artificial Intelligence and Statistics.*Fort Lauderdale, Florida. January 3-6, 1999. http://uncertainty99.microsoft.com/proceedings.htm

77. "Applied mathematics in telecommunications consulting." Invited lecture in Undergraduate Mathematics Seminar, University of Colorado at Denver, March 8th, 1999. http://www.cudenver.edu/~hgreenbe/courses/3001/S99/syllabus.html

78. "Causal data mining and modeling of customer data." Invited lecture, University of Denver, Daniels School of Business, capstone course in data technologies for business applications, April 29th, 1999.

79. "Optimal use of acquired network facilities." Invited presentation, INFORMS '99, CincinnatiConventionCenter, May 3rd, 1999.

80. "Valid and invalid causal inferences in epidemiology." Invited talk, CU-Denver Statistics and BioMath Seminar, September 14th, 1999.

81. "An axiomatic approach to attributable risk," CU-Denver Statistics and BioMath Seminar, October 19th, 1999.

82. "Forecasting purchases of telecommunications services via state transition models", with Dr. Doug Popken. INFORMS Fall '99, Philadelphia, November 7-10, 1999. http://www.informs.org/Conf/Philadelphia99//TALKS/TE13.html

83. "Causal data mining of telecommunications customer data", INFORMS Fall '99, Philadelphia, November 7-10, 1999. http://www.informs.org/Conf/Philadelphia99//TALKS/TE13.html

84. "Mathematical validity of CVM Risk Assessment." Invited review of antimicrobial risk assessment, presented at U.S. Food and DrugAdministrationCenter for Veterinary Medicine (CVM)'s Draft Risk Assessment and the Establishment of Resistance Thresholds Workshop, December 9th and 10th, 1999.DoubleTree Hotel, Rockville, MD.http://www.fda.gov/cvm/mathval_tcox.htm

85. "Optical network planning and optimization in metropolitan areas." Invited talk at Institute for International Research Conference on *Transitioning to the Next on Metropolitan Network Using DWDM.* Wyndham Miami Beach Resort, February 14-15, 2000.

86. "Data mining and causal simulation modeling of customer behaviors". Tutorial presented at Fifth INFORMS Telecommunications Conference. Sheraton Boca Raton Hotel, Boca Raton, Florida, March 5-8, 2000. http://www.crt.umontreal.ca/GERAD/boca2000/monday.shtml#ma

87. "Cost savings from network optimization of DWDM facilities and optical switches". Presented at *8th International Conference on Telecommunications Systems: Modeling and Analysis.*VanderbiltUniversity, Nashville, Tennessee, March 9-12, 2000.

88. "Predicting and optimizing customer behaviors." Presented at *8th International Conference on Telecommunications Systems: Modeling and Analysis.*VanderbiltUniversity, Nashville, Tennessee, March 9-12, 2000.

89. "Attributable risk and multiple causes." Invited seminar, University of Colorado Health Sciences Center Seminar Series, April 17th, 2000

90. "Predicting how Telecommunications Ads Affect Customer Values". INFORMS Spring 2000 Meeting, Salt Lake City, Utah, May 7-10, 2000. Salt Palace Convention Center. http://www.informs.org/Conf/SaltLake2000//TALKS/MB19.html

91. "A simulation model of excess illnesses from fluoroquinolone-resistant Campylobacter." Invited presentation, 9th Symposium of the International Society

for Veterinary Epidemiology and Economics. Beaver Run Resort, Breckenridge, CO, August 6-11, 2000.
http://www.cvmbs.colostate.edu/cveadss/schedule/SchedulePage.htm

92. "Some new problems in applied optimization: Telecommunications data mining and network design applications.".Invited lecture, Seminar in Special Topics in Optimization, University of Colorado at Boulder, School of Business, November 2nd, 2000.

93. "Designing Effective Risk Management Decision Processes" (with V. Bier). Invited talk, INFORMS Annual Meeting, San Antonio, November, 2000. (Presented by Professor Bier.)

94. "A discrete-event simulation model of human health risks from fluoroquinolone-resistant Campylobacter in chickens." Society for Risk Analysis Annual Meeting, WashingtonD.C. December 6th, 2000.

95. "Alternatives to establishing thresholds: A predictive modeling framework." Invited talk presented at the FDA meeting on Use of Antimicrobial Drugs in Food Animal and the Establishment of Regulatory Thresholds on Antimicrobial Resistance. Rockville, MD, January 22 - 24, 2001.
http://www.fda.gov/cvm/antimicrobial/thresagenda51.htm

96. "Advances in data mining for predicting risks of customer responses to interventions." Invited lecture, HearinCenter for Enterprise Science. University of MississipiSchool of Business Administration, Oxford, Mississipi, 2-24-01.

97. "Data mining methods for health risk data bases." Invited lecture, Seminar on Computational Biology, University of Colorado Department of Mathematics, Denver, Colorado, 3-15-01.

98. "Optimized mesh vs. ring comparisons". Invited presentation and panel discussion, All Optical Network Conference, Orlando, Florida, May 3rd, 2001.

99. "Campylobacter risk analysis: a cause-and-effect view." Invited presentation, *Second International Conference on Antimicrobial Resistance: Use of Antimicrobials and Protection of Public Health.* Office International des Epizooties, Paris, France. 2-4 October, 2001.

100. "Decision-making with incomplete models". Invited lecture, Seminar in Special Topics in Optimization, University of Colorado at Boulder, School of Business, November 28th, 2001.

101. "Game theoretic models of critical infrastructure protection" Society for Risk Analysis Annual Meeting, Seattle, WA, December 5th, 2001. (Bier, V., Abhichandani, V., Cox, LA Jr. Presented by Professor V. Bier.)

102. "The Causes of Campylobacteriosis". Invited paper presented at *Symposium on the Use of Fluoroquinolones in Poultry: Effect on Campylobacter and the Potential Human Health Consequences.*Cambridge, MA, March 1, 2002.

103. "Optimizing Dark Fiber Use in Metropolitan Areas" (with G. Bell), *Sixth INFORMS Telecommunications Conference,*Boca-Raton, Florida, March 10-13, 2002. http://www.informs.org/Conf/Telecom02/Abstracts/Cox01336062645.pdf

104. "What is the cost of a DS3?" . Invited talk, *Sixth INFORMS Telecommunications Conference,*Boca-Raton, Florida, March 10-13, 2002. http://www.informs.org/Conf/Telecom02/Abstracts/Cox_network_cost_abstract.pdf

105. "Least-Cost Acquisition of Service Facilities Via Spatial Clustering" (with D. Babayev), *Sixth INFORMS Telecommunications Conference,*Boca-Raton, Florida, March 10-13, 2002. http://www.informs.org/Conf/Telecom02/Abstracts/Cox01356165150.pdf

106. "Predicting Likely Telecom Service Buyers by Mining D&B and Billing Data", *Sixth INFORMS Telecommunications Conference,* Boca-Raton, Florida, March 10-13, 2002 http://www.informs.org/Conf/Telecom02/Abstracts/Cox01361002535.pdf

107. "How to Make Good Risk Management Decisions with Inadequate Data: Applications to Blood Supply Safety." Invited talk, *Decision-Making Under Conditions of Uncertainty Regarding Rare and Emerging Diseases, with special focus on the Human Impact of Transmissible Spongiform Encephalopathy (TSE),* Fairmont Chateau Laurier Hotel. Ottawa, Ontario. March 25th and 26th, 2002. http://www.hc-sc.gc.ca/pphb-dgspsp/hcai-iamss/sra-ser/tse-est02/pdf/proceedings_dmucu_%202002.pdf

108. "Using Epidemiological Data in Risk Assessment". Lecture in Professional Course on Probabilistic Risk Assessment. Health Canada. Ottawa, Ontario. March 27th, 2002.

109. "Integrating Health Risk Assessment and Management". Lecture in Professional Course on Probabilistic Risk Assessment. Health Canada. Ottawa, Ontario. March 27th, 2002.

110. "Causes of Camplyobacteriosis", invited talk at the University of Colorado Health Sciences Center, Denver, Colorado. April 9th, 2002.

111. "Human Health Risk Assessment for Virginamycin Use in Chicken" (with D. Popken), Poster Presentation P11 at *2002 Conference on Antimicrobial Resistance.* Hyatt Regency Bethesda, Bethesda, MD, June 27th-29th, 2002. http://www.nfid.org/conferences/resistance02/absposter.pdf

112. "Causes of Fluoroquinolone-Resistant Campylobacteriosis" (with D. Popken), Poster Presentation P12 at *2002 Conference on Antimicrobial Resistance.* Hyatt Regency Bethesda, Bethesda, MD, June 27th-29th, 2002.

http://www.nfid.org/conferences/resistance02/absposter.pdf

113. "Quantifying Human Health Impacts of Veterinary Medical Products Regulations." Invited Plenary Presentation. VICH 2. Tokyo, Japan, October 10th, 2002.

114. "Defending Networked Resources Against Intelligent Attacks." Invited presentation, INFORMS Annual Meeting, San Jose. November 17-20, 2002. http://informs.emeetingsonline.com/emeetings/formbuilder/clustersessiondtl.asp?csnno=311&mmnno=101

115. "Modeling the Human Health Risks from Antibiotic Use in Chickens". Presented at INFORMS Annual Meeting, San Jose. November 17-20, 2002. http://informs.emeetingsonline.com/emeetings/formbuilder/clusterpaperdisplay.asp?ppnno=1257

116. "Quantifying human health impacts of antimicrobial risk management alternatives for enrofloxacin". Winner, Society for Risk Analysis Best Paper Award,. Society for Risk Analysis Annual Conference, New Orleans, LA. December 9-11, 2002. www.sra.org/news0203.pdf

117. "Quantifying human health risks from virginiamycin used in chickens." Poster Presentation, Society for Risk Analysis Annual Conference, New Orleans, LA. December 9-11, 2002.

118. "Uncertainty in quantitative estimates of health risk from diesel particles". Invited plenary talk, Sixth Workshop on Mexico City Air Quality, Hotel Royal Pedregal, México January 21, 2003.

119. "Communicating risks and uncertainties to health managers." Invited talk, Advanced Risk Management Techniques, Strategies, and Modelling Practices: Blood Safety. Statistics and Risk Assessment Section, Blood Safety Surveillance and Health Care Acquired Infections Division. Centre for Infectious Disease Prevention and Control. Population and Public Health Branch. Health Canada. Fairmont Chateau Laurier Hotel. March 13th-14th, 2003.

120. "Nonlinear Low-Dose Hematotoxicity" presented at *Non-Linear Dose-Response Relationships in Biology, Toxicology, and Medicine: An International Conference.* (University of Massachusetts, Amherst, MA, May 28-30th, 2003) http://www.belleonline.com/abstracts/session6.html

121. "Human Health Risks and Benefits of Current Enrofloxacin Use Patterns and Alternatives" (with Dr. Douglas Popken). Poster presented at the *NFID 2003 Annual Conference on Antimicrobial Resistance.* June 23-25th, Hyatt Regency Bethesda, MD, 2003. http://www.nfid.org/conferences/resistance03/.

122. "Quantifying Human Health Impacts of Antimicrobials Used in Veterinary and Human Medicine." Poster presented at the *NFID 2003 Annual Conference on Antimicrobial Resistance*. June 23-25th, Hyatt Regency Bethesda, MD, 2003. http://www.nfid.org/conferences/resistance03/.

123. "The role of risk assessment in assessing the future of antimicrobials in food animal production: an overview." Invited presentation, *Seventh DISCOVER Conference on Food Animal Agriculture: Is There a Future for Antibiotics in Animal Agriculture?* September 21-24, 2003. Abe Martin Lodge, BrownCountyState Park. Nashville, Indianahttp://www.adsa.org/discover/7thDISCOVERProg4-8-03.htm

124. Cox, LA. A Computer Simulation Model of Low-Dose Interactions Among VOC Hematotoxins In Bone Marrow. Presented at Society for Risk Analysis Annual Meeting. Baltimore. December 7-10, 2003.

125. CoxLA., Popken DA. Past and Future Human Health Risks and Benefits from Animal Antimicrobials. Presented at Society for Risk Analysis Annual Meeting. Baltimore. December 7-10, 2003.

126. Cox LA. Quantitative and Qualitative Prediction of Human Health Risks from Emerging Resistance to Animal Antimicrobials. Presented at Society for Risk Analysis Annual Meeting. Baltimore. December 7-10, 2003.

127. Cox LA. Information Theory, Causality, and Objective Hazard Identification . Presented at Society for Risk Analysis Annual Meeting. Baltimore. December 7-10, 2003.

128. Cox LA. Risk Analysis Ideas for Decontaminating Buildings. Invited presentation, NRC Workshop on Standards and Policies for Decontaminating Public Facilities Affected by Exposure to Harmful Biological Agents. Hotel Monaco, Washington, D.C., January 28-29, 2004.

129. Cox, LA. Does the use of antibiotics in food animals pose a risk to human health? A critical review of published data. NARMS Conference. Decatur, Georgia. March 5, 2004.

130. Cox LA. The use of risk assessment models in formulating regulations for antibiotic use in food animal production. 53rd Western Poultry Disease Conference March 7-9, 2004 Capitol Plaza Holiday Inn - Sacramento, California

131. Cox LA. Simulating bone marrow impacts of VOC mixtures. Invited poster presented at the American Chemistry Council's LRI Annual Science Meeting. May 5-6, 2004 Hotel Inter-Continental Miami, Florida

132. Cox LA.Rapid Risk Rating Technique for risk-benefit assessments of antibiotics used in food animals. Invited presentation, ASM General Meeting New Orleans, Louisiana, May, 2004.

133. Cox LA. Detecting causal non linear exposure-response relations in epidemiological data. Poster presented at *Non-Linear Dose-Response Relationships in Biology, Toxicology, and Medicine: An International Conference.*University of Massachusetts, Amherst, MA. June 8-10, 2004.

134. Cox LA. Low-dose nonlinearity of hematopoietic dose-response relations. Poster presented at *Non-Linear Dose-Response Relationships in Biology, Toxicology, and Medicine: An International Conference.*University of Massachusetts, Amherst, MA. June 8-10, 2004.

135. Cox LA. Universality of J-shaped and U-shaped dose-response relations in stochastic transition systems. Talk presented at *Non-Linear Dose-Response Relationships in Biology, Toxicology, and Medicine: An International Conference.* University of Massachusetts, Amherst, MA. June 8-10, 2004.

136. Cox LA. Qualitative vs. Quantitative Risk Assessment of Animal Antimicrobials. Poster presented at the *NFID 2004 Annual Conference on Antimicrobial Resistance.* June 28th, Hyatt Regency Bethesda, MD, 2004. http://www.nfid.org/conferences/resistance04/.http://www.nfid.org/conferences/resistance04/.

137. Cox LA. A Rapid Risk Rating Technique (RRRT) for Quantitative Risk Assessment of Animal Antimicrobials. Poster presented at the *NFID 2004 Annual Conference on Antimicrobial Resistance.* June 28th, Hyatt Regency Bethesda, MD, 2004. http://www.nfid.org/conferences/resistance04/.http://www.nfid.org/conferences/resistance04/.

138. Quantitative comparison of human health risks and benefits caused by alternative decisions on animal drug uses. Invited talk at Society for Risk Analysis Symposium: *Risk Assessment and Antimicrobial Resistance: Past, Present and Future.*HyattRegencyCrystalCity, Arlington, VA. September 28-29, 2004. http://www.sra.org/docs/amr-ra_flyer.pdf

139. Cox LA Jr, Babayev D. Stochastic Optimization Via Random Sampling and Deterministic Solutions. Presented at INFORMS 2004 Annual Meeting. Denver, CO. October, 2004.

140. Popken DA, Cox LA Jr. Results from Simulation-Based Planning of Theatre Air Warfare. Presented at INFORMS 2004 Annual Meeting. Denver, CO. October, 2004.

141. Cox LA Jr. Potential human health benefits of antibiotics used in food animals: a case study of virginiamycin. Poster presented at the Society for Risk Analysis

Annual Meeting. WydhamPalm Springs. Palm Springs, CA. December 5-8, 2004. http://birenheide.com/sra/2004AM/program/singlesession.php3?sessid=P3

142. Cox LA, Jr., G. Charnley, C.L. Gaworski. Linear vs. Nonlinear Models of Excess Lung Cancer Risks Induced by Carbon Filter Particles in Cigarette Smoke. Poster presented at the Society for Risk Analysis Annual Meeting. WydhamPalm Springs. Palm Springs, CA. December 5-8, 2004. http://birenheide.com/sra/2004AM/program/singlesession.php3?sessid=P3

143. Cox, LA Jr. Emergent, Robust Non-Linearity of Dose-Response Relations in Stochastic Transition Models. Invited presentation at the Society for Risk Analysis (SRA) Annual Meeting. Wyndham Palm Springs. Palm Springs, CA. December 5-8, 2004. http://birenheide.com/sra/2004AM/program/singlesession.php3?sessid=P3

144. Cox, LA Jr. BSE Update. Invited presentation, R-CALF Annual National Convention. January 19, 2005 Red Lion Hotel, Denver CO. http://www.lmaweb.com/infonewspast.html , http://www.hpj.com/bsetimeline.cfm

145. Cox, LA Jr. Potential human health impacts of banning antibiotics used in food animals: A case study of virginiamycin. Invited talk, Conference on: Worldwide Ban on Animal Antibiotics on the Horizon? Amsterdam. January 31, 2005.

146. Cox, LA Jr. Quantifying potential human health risks and benefits of animal antibiotics. FDA, Center for Veterinary Medicine (CVM) FASS Symposium, Food Safety, Animal Drugs, and Animal Health Committee. Rockville, MD. February 14th, 2005.

147. Cox, LA Jr. Causal modeling in health risk analysis: Designing safer cigarettes and other applications. Invited talk, Seminar in Special Topics in Optimization, University of Colorado at Boulder, School of Business. 3-16-2005.

148. Cox, LA Jr. Low-dose dose-response nonlinearities as adaptive inventory control risk management strategies for tissues. Invited presentation at the *Fourth Annual International Conference on Hormesis: Implications for Toxicology, Medicine, and Risk Assessment.* University of Massachusetts at Amherst. Amherst, MA, June 8, 2005. http://belleonline.com/BellePrelim_2005.pdf

149. Cox, LA Jr. Complex low-dose nonlinearities: Insights from cadmium. Poster presented at the *Fourth Annual International Conference on Hormesis: Implications for Toxicology, Medicine, and Risk Assessment.* University of Massachusetts at Amherst. Amherst, MA, June 8, 2005. http://belleonline.com/BellePrelim_2005.pdf

150. Cox, LA Jr. Dynamics of u-shaped and n-shaped dose-response in a simple model of cytotoxicity-mediated carcinogenesis. Poster presented at the *Fourth Annual International Conference on Hormesis: Implications for Toxicology,*

Medicine, and Risk Assessment. University of Massachusetts at Amherst. Amherst, MA, June 8, 2005. http://belleonline.com/BellePrelim_2005.pdf

151. Cox LA Jr., Approaches to Antimicrobial Risk Analysis in Food Safety Decision Making in Poultry Medicine. Invited talk, 2005 AAAP/AVMA Annual Meeting. MinneapolisConvention Center. July 17th, 2005.http://www.aaap.info/annlmtg/m2005/Symposium%20AAAP%202005.pdf

152. Cox LA Jr., Modeling Lung Carcinogenesis 1: Genotoxic and epigenetic events in two-stage clonal expansion (TSCE) models. Invited presentation, Philip Morris Research Laboratories Symposium on Genotoxic and Epigenetic Tumorigenesis. Crown Plaza Hotel. Cologne, Germany. November 14-16, 2005

153. Cox LA Jr., Modeling Lung Carcinogenesis 2 : Toward a biologically based model of smoking and lung cancer . Invited presentation, Philip Morris Research Laboratories Symposium on Genotoxic and Epigenetic Tomorigenesis. Crown Plaza Hotel. Cologne, Germany. November 14-16, 2005

154. Cox LA Jr., Food Animal Antibiotics and Human Health. Invited seminar, Sponsored by Seed Science Center/Institute for Food Science & Security. IowaStateUniversity. November 30th, 2005.

155. Cox LA Jr., Assessing and Managing the Human Health Risks from Antibiotics Used in Food Animals: Data, Analysis, and Policy Perspectives. Invited presentation at IowaStateUniversity. December 1, 2005.

156. Cox LA Jr., Food Animal Antibiotics and Human Health: History and Policy Perspectives. Invited presentation at the *Society for Risk Analysis (SRA) 2005 Annual Meeting*. Orlando, Florida. December 4-7th, 2005. http://birenheide.com/sra/2005AM/program/singlesession.php3?sessid=M19

157. Cox LA Jr., What Fraction of Disease Can be Prevented by Removing Specific Exposures? Presentation at the *Society for Risk Analysis (SRA) 2005 Annual Meeting.*Orlando, Florida. December 4-7th, 2005. http://birenheide.com/sra/2005AM/program/singlesession.php3?sessid=M4

158. Cox, Tony. Risk analysis and public health – How to get from good intentions to good results: Animal antibiotics and other examples. Invited talk, *Café Scientifique.*DenverColorado. January 17th, 2006. http://cafescicolorado.org/Cox.htm#topic

159. Cox LA Jr., Using data mining to predict and to influence customer behaviors: Some real-world examples. Invited talk, Seminar in Information Systems and Data Mining, University of Colorado at Boulder, Leeds School of Business. 2-7-2006.

160. Cox LA, Popken DA, Carnevale R. Quantitative risk anlysis for animal antibiotics. *Edelman Award Competition. INFORMS Practitioners Meeting.* Hotel Intercontinental, Miami, Florida. May 1, 2006. http://iol-a.informs.org/index.php?c=401&kat=Franz+Edelman+Award

161. Cox LA Jr..Assessing uncertainty in influential risk assessments. Invited talk, *Public Forum on OMB's Proposed Risk Assessment Bulletin: Implications for Practice Inside and Outside Government.*GeorgeWashingtonUniversityCafritzConferenceCenter. WashingtonD.C. May 24, 2006. http://www.ramas.com/omb1.htm

162. Cox LA Jr. Meta-hormesis for uncertain risks: Arsenic as a case study. Invited presentation and panel discussion. *Fifth Annual International Conference on Hormesis: Implications for Toxicology, Medicine, and Risk Assessment.* University of Massachusetts at Amherst. Amherst, MA, June 7, 2006. http://www.hormesissociety.org/pdf/2006_Hormesis_Preliminary.pdf

163. Cox, Tony. Assessing Construction Defect Risks. *INFORMS 2006 Annual Meeting.* Pittsburgh, Wednesday Nov 08. https://informs.emeetingsonline.com/emeetings/websitepapersv2.asp

164. Cox LA Jr. Hormesis dynamics in a model of lung field cancerization.*Society for Risk Analysis 2006 Annual Meeting.* BaltimoreMD Harbor Renaissance Hotel. December 3-6, 2006. http://birenheide.com/sra/2006AM/program/singlesession.php3?sessid=T3-B

165. Cox LA Jr. Uncertainty, variability and transparency in OMB's Bulletin on Risk Analysis. Invited presentation and panel discussion. *Society for Risk Analysis 2006 Annual Meeting.*BaltimoreMD Harbor Renaissance Hotel. December 6, 2006.

166. Cox, Tony. Simulation of lung carcinogenesis: Some challenges for parameter optimization. Invited talk, School of Engineering, University of Colorado. 2-21-2007.

167. Cox, Tony. Is the A/J Mouse an Appropriate Model for Human COPD Risks? Invited panel discussion. Philip Morris Research Seminar on *The A/J Mouse – A Relevant Animal Model for Cigarette Smoke-Induced Diseases?* Hyatt Hotel. Cologne, Germany. May 29-30, 2007.

168. Cox LA Jr. Hierarchical, knowledge-based, and approximate models can aid prediction, assessment and communication of the lung cancer risks associated with smoking. Invited presentation, *Society for Risk Analysis – Europe. Sixteenth Annual Meeting.* The Hague, Amsterdam. June 17-19, 2007. http://www.sraeurope2007.eu/docs/ConferenceBookofAbstracts.pdf

169. Cox, Tony. Quantifying Potential Human Health Risks from Penicillin/Ampicillin Use in Food Animals. Presentation at the U.S.FDACenter for Veterinary Medicine (CVM). Rockville, Maryland. August 29, 2007.

170. Cox, Tony. Dynamic Simulation of COPD: Neutrophil Accumulation. Invited presentation. Philip Morris International, Research. Neuchatel, Switzerland. September 6, 2007.

171. Cox, Tony. Dynamic Simulation of COPD: Protease-Antiprotease Imbalance. Invited presentation. Philip Morris International, Research. Neuchatel, Switzerland. September 6, 2007.

172. Cox, Tony. Simulating lung cancer risk from conventional and modified cigarettes. Invited presentation at UCDHSC Department of Mathematical Sciences: Operations Research Seminar. December 05, 2007

173. Cox, Tony;Popken, Douglas A; Mathers, Jerry. Do penicillin-based drugs administered to food animals threaten human health? *Society for Risk Analysis 2007 Annual Meeting.* San Antonio, Texas. December 9-12, 2007. http://birenheide.com/sra/2007AM/program/

174. Cox, Tony. Identifiability and prediction uncertainty in a multistage clonal expansion (MSCE) model of carcinogenesis. Invited presentation, *Society for Risk Analysis 2007 Annual Meeting.* San Antonio, Texas. December 9-12, 2007. http://birenheide.com/sra/2007AM/program/

175. Cox, Tony; Urban, Hans-Joerg..Multilevel biologically-based dose-response modeling of complex diseases: Lung cancer and COPD as examples. *Society for Risk Analysis 2007 Annual Meeting.*San Antonio, Texas. December 9-12, 2007. http://birenheide.com/sra/2007AM/program/

176. Cox, Tony. BSE Risk in the US: Update. Invited presentation, *R-CALF Annual Convention*, Omaha, NE. February 21, 2008. www.r-calfusa.com/convention/2008convention.htm

177. Cox, Tony. Data mining and modeling to maximize customer lifetime value. Invited lecture in Business Intelligence, Leeds School of Business, University of Colorado at Boulder. April 23, 2008.

178. Cox, Tony. Hormesis without cell killing in a competing-risks model of carcinogenesis. Presentation at *Dose-Response 2008.*University of Massachusetts at Amherst. April 30, 2008. http://www.dose-response.org/conference/2008/Conference_Program_2008.pdf.

179. Cox, Louis A. How can statisticians help improve the quality of construction defect litigation? Invited presentation, *Joint Statistical Meetings (JSM) 2008*. Denver, Colorado. August 5, 2008.

www.amstat.org/meetings/jsm/2008/onlineprogram/index.cfm?fuseaction=abstract_details&abstractid=301900

180. Cox, Tony. Improving RAMCAP™ and TVC Terrorism Risk Analysis. Invited presentation, *Chief of Naval Operations' Distinguished Fellow Program: Critical Infrastructure Workshop.* Naval PostgraduateSchool. Monterey ,CA. August 14, 2008.

181. Cox, Tony. Short Course on Causality and Decision Analysis for Risk Analysts. *Australia&New Zealand Regional Organisation of the Society for Risk Analysis. 3rd Annual Conference.*Canberra, Australia. September 29, 2008. http://www.acera.unimelb.edu.au/sra/SRA2008/Abstract-program.pdf

182. Cox, Tony. Some limitations of "Risk = Threat x Vulnerability x Consequence" for risk analysis of terrorist attacks. *Australia&New Zealand Regional Organisation of the Society for Risk Analysis. 3rd Annual Conference.*Canberra, Australia. September 30, 2008. http://www.acera.unimelb.edu.au/sra/SRA2008/Abstract-program.pdf

183. Cox, Tony. Some limitations of elicited probabilities for terrorism risk assessment. *Australia&New Zealand Regional Organisation of the Society for Risk Analysis. 3rd Annual Conference.*Canberra, Australia. October 1, 2008. http://www.acera.unimelb.edu.au/sra/SRA2008/Abstract-program.pdf

184. Cox Louis A Jr. Game theory models of telecommunications networks resilient against terrorist attacks. *INFORMS Annual Meeting 2008*Washington, DC. October 13, 2008 https://informs.emeetingsonline.com/emeetings/formbuilder/clustersessiondtl.asp?csnno=8108&mmnno=176&ppnno=33560

185. Cox Louis A Jr. Predicting and controlling customer churn on multiple time scales. *INFORMS Annual Meeting 2008*Washington, DC. October 14, 2008 https://informs.emeetingsonline.com/emeetings/websitepapersv2.asp

186. Cox Louis A Jr. Designing networks to withstand terrorist attacks. Invited presentation, *Society for Risk Analysis 2008 Annual Meeting.* Westin Boston Waterfront Hotel. Boston, MA. December 7-10, 2008. http://www.sra.org/docs/Final_Binder_1.pdf

187. Cox Louis A Jr. Risk management prority rankings are ineffective: A call for change. *INFORMS Roundtable Winter Meeting.* Hyatt Regency San Antonio, Texas. February 22-23, 2009 www.informs.org/site/roundtable/index.php?c=17&kat=Meetings&&p=6|

188. Cox, Tony. Rethinking risk analysis: Outsmarting adaptive attackers. Invited tutorial. *Military Operations Research Society (MORS) Workshop: Risk-Informed*

Decision-Making for Homeland Security Allocation. ANSERConferenceCenter. Shirlington, VA. April 13, 2009. http://www.mors.org/risk/agenda.pdf

189. Cox, Tony. Risk analysis: Traditional and current approaches. Invited presentation. *Military Operations Research Society (MORS) Workshop: Risk-Informed Decision-Making for Homeland Security Allocation.*ANSERConferenceCenter. Shirlington, VA. April 14, 2009. http://www.mors.org/risk/agenda.pdf

190. Cox, Tony. Fixing broken risk management processes. Invited presentation. *INFORMS Practitioners Meeting*, Phoenix Sheraton, Phoenix, Arizona, April 27, *2009.* http://meetings.informs.org/Practice09/risk.html

191. Cox, Tony. Customer data mining, modeling, and optimization of lifetime value. Invited lecture in Business Intelligence, Leeds School of Business, University of Colorado at Boulder. April 28, 2009.

192. Cox, Tony. Theories and realities of risk modeling. Invited presentation to the *Committee to Review the Department of Homeland Security's Approach to Risk Analysis*. National Academy of Sciences, Washington, D.C. May 21, 2009.

193. Cox, Anthony. Health risk assessment and modeling. Invited keynote address, *Quality Risk Management – Implementation Strategies. A Joint FDA/CDER andURICollege of Pharmacy Conference.*Hyatt Regency, BethesdaMD. June 15-16, 2009.

194. Cox, Louis A. What's wrong with hazard-ranking systems? Invited presentation, Section on Statistics in Defense and National Security2009 Joint Statistical Meeting. August 5, 2009. Washington, D.C. http://www.amstat.org/meetings/jsm/2009/onlineprogram/index.cfm?fuseaction=abstract_details&abstractid=302910

195. Cox, Tony. Using risk analysis models to improve decisions: From good intentions to good results. Invited talk, RockyMountain INFORMS Kickoff Meeting. Tivoli Student Union Building, Denver, CO. September 24, 2009. http://www-math.cudenver.edu/events/QueryEvent.php?eid=650

196. Cox, Tony. Advances in health risk assessment and modeling. Four invited lectures presented at Risk Assessment Unit at Evira (Finnish Food Safety Authority) Helsinki. October 22-23, 2009. http://www.evira.fi/attachments/programras2009__2_.pdf

196. Cox, Tony. Quantifying potential human health risks from tetracycline use in food animals. Invited talk presented at FDACenter for Veterinary Medicine. November 12, 2009.

197. Cox, Tony. Use of mode-of-action in risk assessment.Invited presentation, *Society for Risk Analysis 2009 Annual Meeting.*Baltimore. December 7, 2009.

http://birenheide.com/sra/2009AM/program/singlesession.php3?sessid=M4-C&order=1#1 .

198. Cox, Tony. Validating Tox 21C Testing. Invited panel presentation. *21st Century Validation Strategies for 21st Century Tools***.** July 14, 2010 Baltimore, MD.http://caat.jhsph.edu/programs/workshops/july13validation.htm

199. Cox, L. Anthony, Jr. Limits of Predictability. Invited presentation to National Academy of Sciences, Committee on Mathematical Foundation of Verification, Validation, and Uncertainty Quantification. Keck Building, WashingtonD.C. August 24, 2010. http://www8.nationalacademies.org/cp/meetingview.aspx?MeetingId=4478

200. Cox, Tony. Decisions Without Consequence Probabilities. Invited presentation to OPTTEK. Boulder, Co. September 7, 2010.

201. Cox, Tony. Making Sustainability More Sustainable in a Risky World. *INFORMS Annual Meeting 2010.*Austin, TX. November 9, 2010. http://meetings2.informs.org/Conf/Austin2010/images/split%20pdfs/tracks/Austin%20Service%20Science%20Sections.pdf

202. Cox, Tony. Creating Customer Satisfaction: A Causal Engineering Approach. Invited Keynote Address. C5 Fall Meeting. The CableCenter. Denver, CO. November 15, 2010.

203. Cox, Tony. Models and Mechanisms of Dose-Response Thresholds for Particulate and Nanoparticle-Induced Inflammatory Lung Diseases and Lung Cancer. *Society for Risk Analysis 2010 Annual Meeting.*Salt Lake City. December 7, 2010. http://birenheide.com/sra/2010AM/program/singlesession.php3?sessid=T2-G

204. Cox, Tony. MSHA's Draft Quantitative Risk Assessment (QRA) of RCMD: Current flaws and possible fixes. Presentation at Mine Safety and Health (MSHA) Public Hearing. Arlingon, VA. 2-15-2011. www.msha.gov/REGS/Comments/2010-25249/Transcripts/20110215ArlingtonVA.pdf pp 77-104 and cf p. 243

205. Cox, Tony. Operations Research in Today's Economy. Invited talk and panel discussion, First ORC Day, MIT Operations Research Center. October 15, 2011.

206. Cox, Tony. Principles of Microbial Risk Analysis. Invited lecture. University of Colorado Health Sciences Center. November 1, 2011.

207. Cox LA Reassessing the evidence on health benefits of cleaning air. *Society for Risk Analysis 2011 Annual Meeting.* Charleston, SC. December 7, 2011. http://birenheide.com/sra/2011AM/program/singlesession.php3?sessid=W3-I&order=1#1

208. Cox, Tony. Developing better risk management decision processes for real people. Invited presentation and panel discussion. *Society for Risk Analysis 2011 Annual Meeting.* Charleston, SC. December 5, 2011. http://birenheide.com/sra/2011AM/program/singlesession.php3?sessid=M4-F

209. Cox, Tony. Improving broken risk management decision processes. Invited talk, School of Industrial and Systems Engineering, University of Oklahoma. April 20, 2012.

210. Cox, Tony. Causality for risk analysis. Invited talk at *Workshop on Foundational Issues in Risk Assessment and Management*. Hotel Laurin in Salo, Milano, Italy 3-4 August 2012.http://www.lgi.ecp.fr/~li/materials/workshop-agenda-aug2012-2-alt-30july.pdf

211. Cox, Tony. Extending decision theory to address practical risk analysis problems. Invited talk at *Workshop on Foundational Issues in Risk Assessment and Management*. Hotel Laurin in Salo, Milano, Italy 3-4 August 2012.http://www.lgi.ecp.fr/~li/materials/workshop-agenda-aug2012-2-alt-30july.pdf

212. Cox, Tony. Causal modeling vs. wishful thinking in public health policy. Invited talk, Rocky Mountain INFORMS Chapter Meeting, University of Colorado at Denver, September 19th 2012. http://www.informs.org/Community/Rocky-Mountain-Chapter

213. Cox, Tony. How should communities manage catastrophic risks? 7th Annual DFG-NSF Conference - Reckoning with the Risk of Catastrophe. October 3-5, 2012 Washington DC. http://dfg-nsf2012.mit.edu/wp-content/uploads/2012/09/Conference-brochure.pdf

214. Cox, Tony. Toward more useful decision analysis for real people. Invited talk presented at University of Colorado at Denver School of Business. Denver, CO. November 3, 2012

215. Cox, Tony. Improving risk management comparisons and decisions. Invited webinar, The Society of Information Risk Analysts. November 8, 2012. https://www.societyinforisk.org/content/save-date-tony-cox-present-siras-november-webinar; http://vimeo.com/53151221

216. Cox, Tony. Warmer is healthier: Effects on mortality rates of changes in average fine particulate matter (PM2.5) concentrations and temperatures in 100 U.S. cities. *Society for Risk Analysis 2012 Annual Meeting.* San Francisco. December 12, 2012. http://birenheide.com/sra/2012AM/program/singlesession.php3?sessid=W3-K

217. Cox, Tony. Predictive and prescriptive analytics for increasing customer satisfaction. Rocky Mountain INFORMS Chapter Meeting, University of Colorado

at Denver, January 23rd 2013. http://www.informs.org/Community/Rocky-Mountain-Chapter

218. Cox, Tony. Improving causal analysis in risk-cost-benefit analysis. Invited presentation, Fifth Annual Meeting of the Society for Benefit-Cost Analysis. Washington, D.C.February 21, 2013. http://benefitcostanalysis.org/system/files/SBCA13%20Panel%20Schedule_01%2022%202013.pdf

219. Cox, Tony. Improving causal inference in air pollution risk analysis. Webinar for American Chemistry Council (ACC) members. June 21, 2013

220. Popken DA, Cox T. The good, the bad, and the ugly: How and how not to do quantitative risk analysis of food safety. Rocky Mountain INFORMS Chapter Meeting, University of Colorado at Denver, September 20, 2013. http://www.informs.org/Community/Rocky-Mountain-Chapter

221. Cox, T. How much have historical reductions in air pollution affected mortality rates? Invited presentation, Workshop on Retrospective Review of Risk-Based Regulations. Workshop sponsored by The George Washington University Regulatory Studies Center and National Capital Area Chapter of the Society for Risk Analysis. Washington, D.C. September 27, 2013.

222. Cox, T. Evidence on causality in PM2.5 health effects studies. Invited presentation, Workshop on Retrospective Review of Risk-Based Regulations. Workshop on Health Effects Associated with Elevated Levels of PM2.5. Sheraton, Crystal City, VA. October 22, 2013.

223. Cox, T. Adapting risk management to reduce regret. *Society for Risk Analysis 2013 Annual Meeting.* Baltimore, MD. December 9, 2013.

224. Cox, T. Possible futures for Risk Analysis. *Society for Risk Analysis 2013 Annual Meeting.* Baltimore, MD. December 10, 2013.

225. Cox, T. Have historical reductions in ozone and fine particulate matter caused reductions in mortality rates?*Society for Risk Analysis 2013 Annual Meeting.* Baltimore, MD. December 11, 2013.

226. Cox, LA, Jr. and Popken, DA. Present invited paper on "How well can *in vitro* assays predict *in vivo* results?" at FutureTox II: In Vitro Data and In Silico Models for Predictive Toxicology. January 16–17, 2014 Chapel Hill, North Carolina https://www.toxicology.org/ai/meet/cct_futureToxII.asp

227. Cox, T. Benefits and importance of data sharing. Invited presentation at Institute of Medicine (IOM) Workshop on Principles and Best Practices for Sharing Data from Environmental Health Research. National Academy of Sciences Building,

Washington. D.C. March 19, 2014.https://www.youtube.com/watch?v=iYxLO8tTvl8

228. Cox, LA Jr. Overcoming learning-aversion in evaluating and managing uncertain risks. Paper presented at the Conference on Risk, Perception, and Response. Harvard Center for Risk Analysis. Harvard School of Public Health. Boston, MA. March 20-21, 2014.

229. Cox, T. Intergenerational justice in resilience investments with uncertain future preferences and resources. Invited presentation, International Conference on the Societal Risk Management of Natural Hazards (ICSRM). Hotel and Conference Center University of Illinois at Urbana-Champaign April 17-18, 2014.

230. Cox T. Reducing over-valuation of risk regulations with highly uncertain benefits. *Society for Risk Analysis 2014 Annual Meeting.* Denver, CO. December 8, 2014.

231. Cox T. Vision and scope for Risk Analysis: An International Journal. Invited presentation and panel discussion, *Society for Risk Analysis 2014 Annual Meeting.* Denver, CO. December 9, 2014.

232. Cox, T. Intelligent adversary risk analysis. Invited presentation, Risk Speaker Series, Sandia National Laboratory, Livermore, CA. March 31, 2015.

233. Cox LA. Academic publishing. Invited presentation and panel discussion, Auraria Campus Library. Denver, CO. April 9, 2015.

234. Cox LA. Improving regulatory science. Invited presentation to Board of Mathematical Sciences and their Applications. National Academy of Sciences. Washington, D.C. May 8, 2015.

235. Cox T. Estimating and validating causal concentration-response relations for PM2.5 from data. Invited talk, 41st Annual Summer Meeting of The Toxicology Forum. The Cheyenne Mountain Resort. Colorado Springs, Colorado. July 14, 2015.

236. Cox T. Simple displays of complex risk information: Beyond risk matrices. Invited Webinar, Society for Risk Analysis. August 27, 2015.

237. Cox, T. Applied Risk Analytics. Invited seminar, University of Colorado Department of Mathematics. September 29, 2015.

238. Cox, T. From complex data to complex decisions. Invited talk, National Academy of Sciences, Board of Mathematical Sciences and their Applications. Washington, D.C. October 23, 2015.

239. Cox, T. Causal analytics for improving risk regulation. *Society for Risk Analysis 2015 Annual Meeting.* Arlington, VA. December 9, 2015.

240. Cox, T. Integrity in Publishingfor Scientific Risk Analysis. Invited presentation and panel discussion. *Society for Risk Analysis 2015 Annual Meeting.*Arlington, VA. December 9, 2015

241. Cox, T. Using risk-cost-benefit analysis to improve gain-of-function research decisions. Invited presentation at *Second NAS Symposium on Gain-of-Function Research*. Washington, DC. March 10, 2016

242. Cox, T. Society for Risk Analysis Webinar - A Causal Analytics Toolkit (CAT) for assessing exposure-response relations in epidemiological data. June 29, 2016https://www.youtube.com/watch?v=6EUA03NQ85I&feature=youtu.be

243. Cox, T. Applied risk analytics: Making advanced analytics more useful. Invited Inaugural Distinguished Lecture in Operations Research. Naval Postgraduate School (NPS).Monterery CA. August 4, 2016

244. Cox, T. A Causal Analytics Toolkit (CAT) for assessing causal relations in data. Invited lecture, University of Colorado at Denver, School of Business, September 13, 2016

245. Cox, LA Jr. Probabilistic causation, regulation, and the courts. Law & Economics Center, George Mason University Antonin Scalia Law School. Searle Civil Justice Institute Research Roundtable on Judicial Review of Regulatory Evidence. Wednesday, November 16, 2016

246. Cox T. Automating causal judgments in risk analysis. Invited presentation and panel discussion. *Society for Risk Analysis 2016 Annual Meeting.*San Diego, CA December 12, 2016

247. Cox TL, Popken DA, Kaplan AM, Plunkett LM, Becker RA. How well do high throughput screening (HTS) assay data predict *in vivo* rodent carcinogenicity of pesticides?Invited presentation and panel discussion. *Society for Risk Analysis 2016 Annual Meeting.*San Diego, CA December 14, 2016. (Presented by co-author Dr. Laura Plunkett)

248. Cox T. More objective causal interpretation of exposure-response data. Invited presentation and panel discussion. *Society for Risk Analysis 2016 Annual Meeting.*San Diego, CA December 12, 2016

249. Cox T. Causal Analytics for Benefit-Cost Analysts: What Effects do Policies Cause? Society for Benefit-Cost Analysis (SBCA) 2017 Workshop. George

Washington University Marvin Center, Washington, D.C. March 15, 2017. https://benefitcostanalysis.org/sbca-2017-workshop-offerings#Causal

250. Cox, T. Adaptive benefit-cost analysis forchanging a few of many causes. Society for Benefit-Cost Analysis (SBCA) 2017 Conference. George Washington University Marvin Center, Washington, D.C. March 16, 2017. https://benefitcostanalysis.org/sites/default/files/public/E1%20Tony%20Cox%20Adaptive%20BCA%203-16-17.pdf

251. Cox, T. Evidence-based policy:what constitutes valid evidence of policy effects? Society for Benefit-Cost Analysis (SBCA) 2017 Conference. George Washington University Marvin Center, Washington, D.C. March 16, 2017. https://benefitcostanalysis.org/sites/default/files/public/B2%20Tony%20Cox%20evidence%20based%20policy.pdf

252. Cox, Louis Anthony (Tony), Jr. Progress in risk science and causality. Invited presentation for Topical Session: New Developments in Risk Science and Causality. Association of Air Pollution Control Agencies. AAPCA 2017 Spring Meeting. Hilton Tucson East Hotel. Tucson, Arizona. March 27, 2017. http://www.csg.org/aapca_site/news/documents/WorkingAgenda-AAPCA2017SpringMeeting_001.pdf

Curriculum Vitae

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New York, NY 10011

Utah work address:
[redacted]

Personal Data

Born	[redacted]
Citizenship	[redacted]
Spouse	[redacted]
Children	[redacted]
	[redacted]
	[redacted]

Education

Date	**Degree**	**Field**	**Institution**
2006	B.S.	Neuroscience	Brigham Young University
2010	M.S.	Environmental Health Science	New York University
2012	Ph.D.	Environmental Health Science	New York University

Current Academic Appointments

Year	*Academic Title*	*Institution*
2015-	(Clinical) Assistant Professor	Marron Institute of Urban Management, New York University
2015-	Assistant Professor (Clinical)	Department of Population Health, NYU School of Medicine
2015-	Assistant Professor (Clinical)	Department of Environmental Medicine, NYU School of Medicine

Prior Professional Positions

Year	*Academic Title*	*Institution*
2008-2011	Research Associate (Public Health)	Institute for Policy Integrity, New York University School of Law
2013-2014	Affiliated Public Health Faculty	Marron Institute for Cities and the Urban Environment, New York University
2012-2015	Adjunct Fellow	Institute for Policy Integrity, New York University School of Law
2012-2015	Assistant Professor (Research)	Department of Environmental Medicine, New York University School of Medicine

Awards and Honors

2002-2006	Utah New Century Scholar
2007-2009	Ruth L. Kirchstein National Service Training Award
2010-2011	TL1 Scholar, New York University Clinical and Translational Science Institute

Major Committee Assignments

<u>Government</u>

2017-	Utah Air Quality Board Member
2017-	Air Quality Health Index (AQHI) Health Research Working Group (HRWG) of Health Canada

<u>Regional</u>

2005-2006	Building Environmental Communities Steering Committee, Sierra Club Southwest Chapter
2006	Leadership and Strategic Planning Committee, Keep Utah Moving Coalition, Salt Lake County, UT
2006	Political and Grassroots Committee, Chairperson, Keep Utah Moving Coalition, Utah County, UT

<u>Medical School</u>

2012-	Graduate Steering Committee, responsible for MS students in exposure assessment, NYU GSAS Department of Environmental Health Science
2012-2015	NYU NIEHS Particulate Matter Working Group, NYU School of Medicine Department of Environmental Health Science

<u>New York University</u>

2014-2017	Faculty Advisory Committee, Marron Institute of Urban Management
2014-	Director, Air Quality Program, Marron Institute of Urban Management at NYU

Professional Societies

2012-	Environmental, Occupational and Population Health (EOPH) Assembly Planning Committee, American Thoracic Society (ATS)
2014-	Environmental Health Policy Committee, American Thoracic Society
2016-	Environmental, Occupational and Population Health (EOPH) Assembly Programming Committee, American Thoracic Society (ATS)

Memberships in Professional Societies

Year	*Society*
2009-	International Society for Environmental Epidemiology (ISEE)
2010-2011	American Association of Aerosol Research (AAAR)
2010-2011	Air and Waste Management Association (AWMA)
2012-	American Thoracic Society (ATS)
2012-2013	International Society for Exposure Science (ISES)

Boards and Community Organizations

Years	*Position, Organization, Location*
2002-2003	Co-President, Eco-Response (student environmental organization); Provo, UT
2007-2009	Cubmaster, Boy Scouts of America; Harlem, NY
2011-2013	Community Welfare Committee; Harlem, NY
2016-	President, Good Public (non-profit organization)

Professional Training

2010	Teaching and Learning Certificate, New York University Graduate School of Arts and Science
2013	Leadership, Education & Development for Scientists (LEADS), NYU Langone Medical Center

Refereed Journals

American Journal of Critical Care and Respiratory Medicine (AJCCRM)
BMC Public Health
Environmental Health Perspectives (EHP)
Environmental Health
Environmental Pollution
Inhalation Toxicology
Science of the Total Environment (STOTEN)

Patents N/A

Military Service N/A

Teaching Experience

Years	*Name of Course*	*Course Number*
2012-2014, 2016	Environmental Health Policy†	EHSC-GA 1013
2012-2014	Global Issues in Environmental Health‡	EHSC-GA 1011
2016	Hot Topics in Urban Management†	URBMA-GQ 1301
2016	Time Series Analysis Tutorial†	EHSC-GA 2031
2017	Topics in Environmental Studies*	SOCS-SHU 420
2017	Applied Air Quality Research*	SOCS-SHU 421

†New graduate course designed by Dr. Cromar, taught at NYU
‡Graduate course redesigned by Dr. Cromar, taught at NYU
**New undergraduate course designed by Dr. Cromar; taught at NYU Shanghai*

Mentoring of Graduate Students, Residents, Post-Doctoral Fellows in Research

Primary Research Advisor

2011-2013	Lan Jin	MS student	Environmental Health Science
2013	Tim Borbet	MS student	Biology
2012-2014	Shannon Craig	MS student	Environmental Health Science
2012-2014	Tianyang Wang	MS student	Environmental Health Science
2012-2015	Lars Perlmutt	PhD candidate	Environmental Health Science
2013-2014	William Chen	MS student	Biology
2013-2014	Yas Azarbaijani	MS student	Biology
2013-2015	Caitlyn Della Torre	MS student	Environmental Health Science
2014-2016	Andre Machado	MS student	Environmental Health Science
2015-	Laura Gladson	MS student	Environmental Health Science
2016-	Jing Zhao	MS student	Environmental Health Science
2016-	Marya Ghazipura	PhD candidate	Epidemiology
2017-	Manal Zorigtbaatar	MS student	Environmental Health Science

Research Mentor or Secondary Research Advisor

2012	Kalindi Dasi LaTorre	MS student	Biology
2013	Sarah Langan	MS student	Environmental Health Science
2013	Xun Che	MS student	Environmental Health Science
2012-2015	Lital Yinon	PhD candidate	Environmental Health Science
2013-2015	Chris Lim	PhD candidate	Environmental Health Science
2014-2016	Marya Ghazipura	PhD candidate	Epidemiology
2014-2016	Tim Borbet	PhD candidate	Environmental Health Science
2014-2015	Francisco Blancarte	MA student	Bioethics
2014-2015	Seyedeh Mirzendehdel	MS (NYU Poly)	Environmental Engineering
2016	Anna Weshner-Dunning	MS student	Env Conservation Education
2017	Avikal Somvanshi	MS (NYU CUSP)	App Urban Science/Informatics
2017	Manon Guillemin	MS (France)	Bioengineering

Funding Received

Current Awards

Agency	Title	Type & #	Period	Role
SEDEMA (Mexico City)	Health-based Air Quality Index for Mexico City		07/17-12/17	PI (Cromar)
National Aeronautics and Space Administration (NASA)	A Satellite-Based Global Health Air Quality Index	NNH15ZDA001N-HAQAST	07/16-06/19	Co-Investigator (PI: Duncan)
American Thoracic Society (ATS)	ATS-Marron Health of the Air National Report		01/15-12/18	PI (Cromar)

Prior Funding

Agency	Title	Type & #	Period	Role
Marron Institute of Urban Management	Air Quality Initiative	Program Funding	07/14-01/17	PI (Cromar)
NYU NIEHS Center of Excellence	Assessment of the health-based portion of social cost of carbon estimates	Career Development Award	03/14-02/15	PI (Cromar)
NIH	Long-term Air Pollution Exposure and Mortality in the NIH-AARP Cohort	R01 ES019584-01A1	12/11-09/14	Co-Investigator (PI: Thurston and Hayes)
NIH	The Interaction of Diet, Air Pollution, and Cardiovascular Disease in NHANES	R21 ES021242-01	8/12-7/14	Co-Investigator (PI: Gordon and Ahn)
Robert Wood Johnson Foundation	The Effect of Peak-Shaving Regulations on the Activity, Toxic Emissions, and Health Impacts of Local Power Plants	Public Health Law Research	1/12-6/13	Co-Investigator (PI: Livermore)
NYSDOT	Mobile Source Air Toxics (MSATs) Mitigation Measures	55505-05-03	9/10-6/12	Co-Investigator
NYU-HHC CTSI	TL1 Training Program for Advanced Doctoral Students	1UL1RR029893	1/10-12/11	Predoctoral Fellowship
NIH	Ruth L. Kirchstein National Research Service Award	T32 ES07324	9/07-8/09	Trainee

Submitted Written Comments

Jul 14, 2008 "Buffer zones needed between highways and schools," RE: Proposed alignment of Mountainview Corridor. Statement submitted to the Utah Department of Transportation.

May 28, 2010 "Health benefits of conversion from #6 to #4 residual oil," RE: Int. No. 194 – A Local Law to amend the administration code of the city of New York, in relation to the use of clean heating oil in New York City. Statement submitted to the City of New York Committee on Environmental Protection.

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Cromar K. and Schwartz J. More residual risks: an update on New York City boilers. Policy Brief. Institute for Policy Integrity. New York, NY (2010). (http://policyintegrity.org/files/publications/More_Residual_Risks.pdf)

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Schwartz J., **K. Cromar**, and S. Soloway. (2012) How regulating electricity demand could save lives in New York City. Policy Brief No. 12: Institute for Policy Integrity. New York University School of Law: New York, NY. (http://policyintegrity.org/files/publications/Peak_Efficiency_Policy_Brief.pdf)

Cromar K. (2012) Obesity and Metabolic Syndrome Influences on the Risk of Air Pollution Related Asthma Hospital Admission. New York University, 208 pages; AAT 3502686.

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Zimmerman R., M. Panero, C. Restrepo, A. Mondschein, G. Thurston, **K. Cromar**, T. Carlson, and B. Dulla. Mobile Source air Toxics Mitigation Measures, Task 10: Final Report. New York State Department of Transportation (NYSDOT) Project C-08-12, Pin R021.45.881. March 31, 2013.

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Newman J, G Thurston, **K Cromar**, Y Guo, C Rockman, E Fisher, and J Berger. Particulate Air Pollution and Carotid Artery Stenosis. Journal of the American College of Cardiology. 2015-03-16; 0735-1097 (2015)

M Rice, T Guidotti, and **K Cromar**. Scientific Evidence Supports Stronger Limits on Ozone. American Journal of Respiratory and Critical Care Medicine (AJRCCM). (2015) 2015-03-31; 1535-4970.

Razvi S, J Richards, F Malik, **K Cromar**, R Price, C Bell, T Weng, C Atkins, C Spencer, K Cockerill, A Alexander, M Blackburn, J Alcom, I Haque, and R Johnston. (2015) Resistin Deficiency in Mice has no Effect on Pulmonary Repsonses Induced by Acute Ozone Exposure. American Journal of Physiology. Lung Cellular & Molecular Physiology. 2015-09-20; 1522-1504.

Perlmutt L, D Stieb, and **K Cromar**. Accuracy of Quantification of Risk Using a Single-Pollutant Air Quality Index. (2015) Journal of Exposure Science and Environmental Epidemiology. doi:10.1038/jes.2015.43

Shanley R, Hayes R, **Cromar K**, Ito K, Gordon T, and J Ahn. Particulate Air Pollution and Clinical Cardiovascular Disease Risk Factors. (2016) Epidemiology. 2016:27(2):291-298.

Thurston G, Ahn J, **Cromar K**, Shao Y, Reynolds H, Jerrett M, Lim C, Shanley R, Park Y, and R Hayes. Ambient Particulate Matter Air Pollution Exposure and Mortality in the NIH-AARP Diet and Health Cohort. (2016) Environmental Health Perspectives. 2016 Apr; 124(4):484-490.

Cromar K, Gladson L, Perlmutt L, Ghazipura M, and G Ewart. American Thoracic Society and Marron Institute Report. Estimated Excess Morbidity and Mortality Caused by Air Pollution above American Thoracic Society-Recommended Standards, 2011-2013. (2016) Annals of the American Thoracic Society. 2016:13(8):1195-1201.

Elkhidir H, Richards J, **Cromar K**, Bell C, Price R, Atkins C, Spencer C, Malik F, Alexander A, Cockerill K, Haque I, Johnston R. Plasminogen activator inhibitor-1 does not contribute to the pulmonary pathology induced by acute exposure to ozone. (2016) Physiological reports. 2016 Sep; 4(18).

Cromar K, and G Ewart. Reply: Concentration-Response Associations Used To Estimate Public Health Benefits Of Less Pollution Are Not Valid Causal Predictive Models. (2016) Annals of the American Thoracic Society. 2016 Dec; 13(12):2281-2281.

Thurston GD, Kipen H, Annesi-Maesano I, Balmes J, Brook R, **Cromar K**, De Matteis S, Forastiere F, Forsberg B, Frampton M, Grigg J, Heederik D, Kelly F, Kuenzli N, Laumbach R, Peters A, Rajagopalan S, Rich D, Ritz B, Samet J, Sandstrom T, Sigsgaard T, Sunyer J, and B Brunekreef. A joint ERS/ATS policy statement: what constitutes an adverse health effect of air pollution? An analytical framework. (2017) Eur Respir J 2017; 49:1600419.

Ghosh R, Gauderman W, Minor H, Heekoung AY, Lurmann F, **Cromar K**, Chatzi L, Belcher B, Fielding C, and R McConnell. Air pollution, weight loss and metabolic benefits of bariatric surgery: A potential model for study of metabolic effects of environmental exposures. (2017) Pediatric Obesity. Accepted for Publication.

Joseph S. D'Aleo, BS, MS, ABD, CCM, AMS Fellow

[redacted]

PRIMARY AREAS OF EXPERTISE

Weather and climate analysis and forecasting, natural and man-made factors in climate change. Expertise in the role of major ocean terrestrial and extraterrestrial oscillations in relation to major seasonal anomalies and major events and the role of intra-seasonal factors on the timing of these anomalies and events. Certified Consulting Meteorologist and Fellow of the American Meteorological Society, AMS Councilor. Chaired the AMS Committee on Weather Analysis and Forecasting.

BUSINESS EXPERIENCE

WEATHERBELL ANALYTICS, co-chief meteorologist, senior Ag Forecaster, Daily weather briefings/blogs and other special services for hobbyists, energy and ag hedge funds, farmers, contractors, retail and other markets. Developed the Pioneer statistical model for seasonal forecasting (24 factors).

WSI Senior Ag Forecaster 2007-2010
Helped design and launch AgTrader. Provide daily early global ag emails. Weekend detailed global fundamental and weather analysis for all grains and softs. Briefings for ICE and CBOT and NYBOT on commodity trading.

Founder and Executive Director, ICECAP 2007-
Association and web site devoted to covering climate change and environmental issues. Over 8000 posts and 86 million views as of July 2017. Many addresses at industry conferences including keynote addresses. Many guest lectures at colleges. Hundreds of stories carried by other web sites in 27 countries.

HUDSON Seven Ltd. 2004-2007
Chief Meteorologist/Partner
A hedge fund trading commodities using global weather and climate as a key factor. Specializing in global weather forecasting for ags and energy including hurricane forecasting. Major successes, Katrina and winter cold, summer drought. Annualized returns for first two years of 34.32% (net of all fees).

CONSULTING/FORENSIC METEOROLOGIST 2002-2007
Post event analyses for accident reconstruction - the Crash Labs and others. Also consultant to HP on venues for offsite annual meeting. Consultant for Macy's on winds for Thanksgiving Day Parade. Weekly forecasts for Vineyards as forecaster for Vintage Weather 2007.

WEATHER SERVICES INTERNATIONAL (WSI) 1988-2004, 2007-
Chief Meteorologist
Senior Editor of Intellicast.com
R&D on statistical models for 3-5 week and seasonal forecasting

Worked with climatologist/programmer on 3 statistical models for 3-5 week and monthly/seasonal forecasts for temperatures based on global teleconnection correlations.

Design and development of numerous, successful value-added products and for a very technologically advanced weather forecast operation. Helped in the design and development of enhanced capabilities and applications for WSI's powerful, next generation weather workstation now used by most domestic and several international airlines, and over half of the domestic broadcast and network television and cable operations.

As "Dr. Dewpoint", authored regular (bi-weekly) weather stories and designed products and features for WSI's Intellicast web site, consistently among the top 100 sites in the world in terms of usage and popularity. Focused on El Nino and La Nina and the effects of these and other atmospheric and oceanic teleconnections on weather and climate. Author of the book "Oryx Press Resource Guide to El Nino and La Nina" For Greenwood Publishing

Involved in the successful launch of several WSI programming efforts including the Weather Network (a 24 hour a day cable weather service for the UK), the original MSNBC, FOX News and Time Warner cables weather services, and Discovery Wings, a new broadband service for Aviation. Aided in hurricane forecasting for CNN.

WSI was granted the AMS award for Outstanding Services by a Corporation in 1991 for our pioneering of many value-added products. My name was on the patent on skyline weather animation visualization used by most stations.

Many presentations including keynote and luncheon addresses at national conferences, workshops and annual meetings for various industries on topics like advances in the ability to predict seasonal weather and how the oceans and the sun are factors in climate prediction and change. Invited to talk at the White House on these topics with science advisors to the President (2001) and NOAA Climate Prediction Center in 2002 (they invited me back in 2003 to give them guidance). Annual seasonal outlooks at NWS Northeast Winter Media Workshops since 1996 through 2015 and for regional conferences at LSC and WCSU.

THE WEATHER CHANNEL 1981-88
Director of Meteorology and Co-Founder

With John Coleman, designed the original product concept for The Weather Channel. As the first Director of Meteorology, was responsible for the hiring, planning, direction and control of the original meteorological staff for the cable TV Weather Channel. Designed and maintained the meteorological operations center; recruited and supervised the meteorological support staff (35) as well as the original on-camera staff (27).

Key creative role in the design of the on-air meteorological product line and innovative ways to create and display those products. Created several multi-million dollar features for the network including Weather and Your Health, a major source of revenue for the company. Wrote and served as resource for many taped features, program specials and promotional tapes on the Weather Channel. Also researched, wrote and appeared in weather and environment stories and seasonal outlooks and international weather stories.

While with The Weather Channel, we were nominated for the AMS award for Outstanding Services by a Corporation for our unique ability to provide severe weather warnings of a very local nature, The Weather Channel received the award in 1989. Also taught course on weather and climate at Georgia Tech and Kennesaw State College.

ABC GOOD MORNING AMERICA 1980-81
Meteorologist/Producer
Assisted John Coleman in preparing ABC's network morning weather shows. Our team earned the National Weather Association public service award for the most significant contribution to meteorology by a corporation and John Coleman won the AMS award for Outstanding Services by a Broadcast Meteorologist

LYNDON STATE COLLEGE 1974-80
Assistant Professor of Meteorology
Taught courses in Introduction to Meteorology and Climatology, Microclimatology, Synoptic Analysis and Forecasting and Advanced Synoptic Meteorology. Conceived of and instituted numerous programs that involved students both in and out of the classroom and meteorological laboratory and exposed and promoted the program within the meteorological community. The enrollment grew from 37 to 137, becoming one of the largest undergraduate programs in the nation. Instituted and chaired the Northeast Winter Storm Conference now in its 35th year.

Founded two weather companies - Sentry Weather Forecasting Services, which provided forecasts for media and ski areas in New York and New England and the Great American Weather Calendar Company, which produced two nationally

distributed weather calendars. Papers included a paper in The National Weather Digest on The Storm of February 6-7. 1980 in August 1983.

CBS WEATHER CENTER 1971-74
Meteorologist Producer
Forecaster for WCBS Newsradio and WCBS-TV meteorologists and weathercasters and for the CBS Network show “Energy”. Research support for stories for WCBS-TV on beach erosion and killer tornadoes and provided forecasts for industry and weather and science reporting for WVOX and WHBI.

EDUCATION

New York University	Air Resources Doctoral Studies Program ABD
University of Wisconsin	MS Meteorology (thesis on East Coast Storms)
University of Wisconsin	BS Meteorology (graduated cum laude)
Also attended Georgia Tech and Long Island University	
Vermont State Colleges	PhD (honorary) for successes at Lyndon State and Weather Channel

AFFILIATIONS AND PUBLICATIONS

Elected Fellow of the American Meteorological Society. Charter member of SIGMA ZETA, the national Honorary Science Society; member of the Atlanta Red Cross Emergency Community Services Committee, NWA member, MENSA, Knights of Columbus

Elected to the Council of the AMS 2005. Chaired the AMS Committee on Weather Analysis and Forecasting 1993-94. A member of the Committee on Weather Analysis and Forecasting from 1991-93. Chaired and co-chaired national conferences for the professional meteorological societies including the National Weather Association Annual Meeting in Atlanta in 1984 and the 13th Annual AMS Conference on Weather Analysis and Forecasting in 1993 in Vienna, Virginia.

Presented numerous papers at national and regional conferences on applications of the new technologies (such as radar based precipitation estimates and workstation supported operational decision making), east coast storms, breakthroughs in seasonal climate prediction and why the oceans and the sun are the real drivers behind climate change. Briefings in 2006 and 2007 on Capitol Hill in press conferences and in front of committee and staffer members on climate change.

Presentation to the White House team of Science Advisors to the President on the status of Weather and Climate and seasonal forecasting. Briefing for Connecticut State Environmental Committee on Climate. Presentations on hurricane season threats for the NEDRIX conference, June 2006, Climate and seasonal forecasts NWS Winter Weather Workshops 1996-2016 (Boston, DC). Regular speaker at WSI Energy and AG client briefings in Houston, New York and Chicago. IOGA WV February 2007 and IOGA PA May 2007, IOGA OH 2008,

John Hopkins Lab 2009, Heartland ICCC I 2008, ICCC II 2009, ICCC 2010, Mensa and Intertel Annual Meetings. Spoke at briefings at ICE and CBOT, FC Stone, Top Producer Seminar. Spoke in Beijing at a technology seminar and in Hong Kong on technology for the new airport. Addressed a precision agricultural weather conference in Gramada, Brazil July 2010.

Editorial Board of the AMS Glossary of Meteorology, Second Edition, 2000 Served as a meteorological consultant and editor for Nature's Fury, a Reader's Digest Book on the world's worst weather phenomena. Author of Oryx Press Resources Guide to El Nino and La Nina, Greenwood Publishing, May, 2002. Author of "Is Global Warming on the Wane?" for Yankee Publishing's OFA in 2009 and editorials and stories for many newspapers and magazines. Publications include numerous white papers for corporate use and numerous peer reviewed papers in National Weather Digest, E&E on the "Role of the Oceans and Sun in Multidecadal Climate Changes" and Elsevier (papers on "A Critical Look at Surface Temperature Records", the "Relationship of Mutlidecadal Global Temperatures to Multidecadal Ocean Cycles", "Solar Changes and the Climate" and "A Simple KISS Model to Examine the Relationship between Atmospheric CO2 Concentration, and Ocean and Land Temperatures, Taking into Account Solar and Volcanic Activity as well as Fossil Fuel Use". Contributing author of the NIPCC and ISPM reports and AMICUS briefs to the DC Circuit and supreme court and briefs to the EPA.

Have been interviewed by many newspapers and local and national cable television services (ABC News, FOX, The Discovery Channel, CNN's Lou Dobbs, PBS, WBZ, NECN, WCVB, KUSI). Appeared in programming for ABC and the Discovery Channel on numerous stories for the ABC produced Discovery News, as well as for the Discovery Digital Channels on major weather events, climate change and weather's effect on health. This included many Boston TV and radio interviews.

Co-sponsored as Icecap the 3 International Climate Conferences in New York City and Washington, DC attended by 1800 international scientists from over 20 countries. Was a speaker at three of the conferences with 200 others from over 20 countries.

PARTIAL BIBLIOGRAPHY:

D'Aleo, J.S., 1970, Explosive Redevelopment in East Coast Cyclones, University of Wisconsin Masters Thesis

D'Aleo, J.S., Bernier, A., 1983, The Anniversary Storm of February 7-8, 1980, NWA Digest 84, 22-35

Glickman, T., D'Aleo, J.S. (one of the editorial board), 2000, AMS Glossary of Meteorology, AMS Publications

D'Aleo, J.S., Grube, P.G., 2002, Resource Guide to El Nino and La Nina, Oryx Press, Greenwood Publishing ISBN 1-37356-378-1

McKitrick, R., D'Aleo, J.S., Khandekar, M., Kininmonth, W., Essex, C., Karlen, W., Karlen, O., Clark, I, Murty, T., O'Brien, J.J., 2007, Independent Summary for Policymakers, IPPC Fourth Assessment Report, Fraser Institute

Idso, C., Singer, F., 2008, Nature, Not Human Activity Rules the Climate, Heartland Institute, I was one of 28 contributing authors focusing on the role of the oceans and sun.

Lead Scientist of 14 scientists in Amici Curiae Scientists in Support of Petitioners in DC Circuit Court vs EPA 2011 USCA Case #09-1322 Document #1312291 Filed: 06/08/2011 On Petition for Review of 74 FED. REG. 66,496 (Dec. 15, 2009) and 75 FED. REG. 49,556 (Aug. 13, 2010) (Consolidated) Yetter Coleman LLP (sworn testimony by team)

D'Aleo, J.S., 2009, *Is Global Warming on the Wane*, Old Farmer's Almanac special report

NIPCC Climate Change Reconsidered, 2011, Idso, C., Carter, R.M., Singer, F., one of the contributing authors, Heartland Institute

NIPCC Climate Change Reconsidered II, 2013, Idso, C., Carter, R.M., Singer F., one of the contributing authors on the Extremes section, Heartland Institute

D'Aleo, J.S., Easterbrook, D.J., 2010, Multidecadal Tendencies in ENSO and Global Temperatures tied to Multidecadal Ocean Oscillations, Energy and Environment, 21 (5), 436-460

D'Aleo, J.S., 2011, A Critical Look at Surface Temperature Records, Evidence Based Climate Change Series, Elsevier, 91-142

D'Aleo, J.S., Easterbrook, D.J., 2011, Relationship of Multidecadal Global Temperatures to Multidecadal Ocean Oscillations, Evidence Based Climate Change Series, 161-184

D'Aleo J.S., Solar Changes and Climate (a look at amplifying solar factors besides TSI), 2011, Evidence Based Climate Change Series, 253-276

Wallace, J.P., Finizza, A, D'Aleo, J.S., 2011, A simple KISS model to examine the relationship between atmospheric CO2 concentration and ocean and land surface temperatures taking into consideration solar and volcanic activity as well as fossil fuel use, Evidence Based Climate Change Series, 353-382

Scientist in support of Southeast Legal CERT Petition vs EPA to the Supreme Court, 2012, On Petition For Writ Of Certiorari To The United States Court Of Appeals For The District Of Columbia Circuit (sworn testimony by team)

Wallace, J.C, Christy. J., D'Aleo, J.; On the Existence of a "Tropical Hot Spot" & The Validity of EPA's CO2 Endangerment Finding, Abridged Research Report, August 2016, and On the Existence of a "Tropical Hot Spot" & The Validity of EPA's CO2 Endangerment Finding, Abridged Research Report, April 2017, Second Edition

Wallace, J.C, Idso, C., D'Aleo, J., On the Validity of NOAA, NASA and Hadley CRU Global Average Surface Temperature Data & The Validity of EPA's CO2 Endangerment Finding Abridged Research Report June 2017

Research Reports

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Websites: http://www.weatherbell.com

Purnendu K. Dasgupta

CURRICULUM VITA, May 2016

EDUCATION

1977	Louisiana State University, Baton Rouge, Ph.D. in Analytical Chemistry with minors in Inorganic Chemistry and Electrical Engineering.
1976	Bell and Howell Diploma in Advanced Electronics, DeVry Institute of Technology, Chicago, IL.
1970	University of Burdwan, WB, India, M.Sc. in Inorganic Chemistry.
1968	University of Burdwan, WB, India, B.Sc. with Honors in Chemistry.

EXPERIENCE

January 2014	Adjunct Professor, Department of Physics, University of Texas at Arlington.
Sept 2010 -	Jenkins Garrett Professor of Chemistry, University of Texas at Arlington. Adjunct Professor, Department of Chemistry and Biochemistry, Texas Tech University. Adjunct Professor, Department of Mechanical Engineering, Texas Tech University.
2007- August 2010	Chairman, Department of Chemistry and Biochemistry, The University of Texas at Arlington.
2005-	Appointed Professor, jointly to Department of Mechanical Engineering, Texas Tech University
1992-2006	Paul Whitfield Horn Professor, Department of Chemistry and Biochemistry, Texas Tech University
1988-1991	Professor, Department of Chemistry and Biochemistry, Texas Tech University
1985-1988	Associate Professor, Department of Chemistry and Biochemistry, Texas Tech University
1981-1985	Assistant Professor, Department of Chemistry and Biochemistry, Texas Tech University
1979-1981	Assistant Research Chemist, California Primate Research Center; Adjunct Assistant Professor, Department of Civil and Environmental Engineering, University of California, Davis, California.
1978	Postdoctoral Research Associate and Instructor, Department of Chemistry, Louisiana State University, Baton Rouge, Louisiana.
1973-1977	Graduate Assistant, Department of Chemistry, Louisiana State University, Baton Rouge, Louisiana.
1972	Senior Research Scholar, Department of Physical Chemistry, Indian Association for the Cultivation of Sciences, Calcutta, India.

HONORS AND AWARDS

Elected honorary member, Japan Society for Analytical Chemistry, 2015.
J. Calvin Giddings Award in Chemical Education, American Chemical Society, 2015
Elected Fellow, The Institute of Electrical and Electronics Engineers (IEEE), 2015
University of Texas at Arlington. Elected to Academy of Distinguished Scholars, 2013.
Fulbright Scholar, University of Warsaw, Warsaw, Poland, 2013.
Brown-Williamson Lecturer, University of Louisville, Louisville, KY, 2012.
Southwest Region American Chemical Society Award, 2012
Wilfred T. Doherty Award for Chemical Research, Dallas-Ft. Worth Section of American Chemical Society, 2012.
The Senate of the State of Texas Honor Proclamation 350, 2012.
Delaware Valley Chromatography Forum, Stephen Dal Nogare Award in Chromatography, 2012: Pittcon 2012, Orlando, FL.
American Chemical Society National Award in Chromatography, 2011.
Distinguished Record of Research Award, The University of Texas at Arlington, 2010.
Purnendu K. Dasgupta Graduate Award in Analytical Chemistry established at Texas Tech University. Funded by proceeds from Dasgupta patents donated to TTU and by former students and friends, 2009.

Purnendu K. Dasgupta Lecture Series, endowed by former students, colleagues and friends, established at Texas Tech University. 2009. Inaugural Lecturer: Royce W. Murray, Member, NAS. Editor, *Analytical Chemistry*
Foster Lecturer, University at Buffalo, Buffalo, NY. 2009
Conference Uber Ionenanalyses, Conference Award, Berlin, 2009.
Karcher Lecturer. University of Oklahoma, Norman, OK. 2008.
Japan Society of Flow Analysis, Honor Medal, 2008.
Miegunyah Lecturer, The University of Melbourne, Australia. 2007.
Best Science Paper of 2005, *Environmental Science and Technology*, Editor's Award, 2006.[1]
Outstanding Achievement Award in Ion Chromatography, 2005.
Most Accessed Paper in *Environmental Science and Technology* published in 2005.[1]
Achievement Rewards for College Scientists (ARCS) Foundation, Scientist of the Year, 2004-2005.
Elected IEEE Senior Member, 2003.
Governor's Appointee: Texas Emission Reductions Program Advisory Board, 2002-.
Governor's Appointee: Texas Council of Environmental Science and Technology, 2002-.
William J. Probst Lecturer, Southern Illinois University, IL. 2001.
Inducted Honorary Member, Korean Society for Environmental Analysis, 2001.
A. A. Benedetti-Pichler Memorial Award, American Microchemical Society, 1998.
Barney E. Rushing, Jr. 1990 Faculty Distinguished Research Award, Texas Tech University Dads and Moms Association, 1991.
Outstanding Achievement Award in Ion Chromatography, 1989.
P. A. Traylor Creativity Award, Analytical Sciences, Dow Chemical, Midland, MI, 1989.
Institute Medal, Institute of Industrial Sciences, University of Tokyo, 1987.
American Chemical Society Environmental Chemistry Division. Certificate Of Merit Award for Best Presented Paper, American Chemical Society National Metting, Atlanta, 1981.
Frank R. Blood Award for best publication, Society of Toxicology and Pharmacology, 1981.
Government of India Doctoral Research Fellow, 1972.
Atomic Energy Commission of India Graduate Fellow in Chemistry, 1969-1970.
National Science Talent Search Scholar, Government of India, 1965-1968.

MEMBERSHIPS

American Chemical Society
Institute of Electrical and Electronic Engineers
Sigma Xi

APPOINTMENTS

Chairman, Subcommittee on Sulfur Compounds, Intersociety Committee on Methods for Air Sampling and Analysis. 1986- .

Consultant: Anatel Corp. 1998-. Dow Chemical Company 1986- . Dionex Corporation 1987- . Shell Development Company 1988- . EG & G Chandler Engineering 1989. W. R. Grace & Co. 1990; Eastman Chemical, 1993, Eastman Kodak, 1994, Union Carbide Corp., 1994.

Editorial Advisory Board Member, Analytica Chimica Acta 1994- 2003, Analytical Chemistry (A pages), 1997-1999; Analytical Sciences, 2006- ; Atmospheric Environment, 1990-2001; Critical Reviews in Analytical Chemistry 2015- : Journal of Microcolumn Separations, 1997-2001; Journal of Process Control and Quality, 1995-, Talanta. 1990- .

Appointed Editor, Analytica Chimica Acta, 2004-

[1] These two are two separate papers

PUBLICATIONS

One textbook, 400+ publications in primary peer-reviewed journals and book chapters, Google Scholar: 13,000+ citations (since 2010: 4600+), H-index 60 (since 2010: 30), i10 index 303 (since 2010: 138).

GRANTS

Career: ~18 million dollars in Federal, State and Private grants.

PATENTS (Only US Patents listed, in most cases parallel European/International patents exist)

P26. Pretreatment Device for dissolved ion analysis and dissolved ion analysis system. Ohira, S.-I.; Toda, K.; Dasgupta, P. K. US Patent 9,103,780, August 11, 2015.

P25. Rapid method to measure cyanide in biological samples. Boss; G.; Sharma; V.; Brenner, M.; Dasgupta, P. K.; Blackledge, W. C. US Patent 8,741,658, 3 June, 2014.

P24. Ion Detector and System. Dasgupta, P. K.; Yang, B.; Srinivasan, K. US Patent 8,551,318 8 October, 2013.

P23. Ion Detector and System. Dasgupta, P. K.; Yang, B.; Srinivasan, K. US Patent 8,293,099. 23 October, 2012.

P22. Membrane Based Concentrators. Dasgupta, P.; Takeuchi; M.; Srinivasan; K. US Patent 7,964,411. 21 June, 2011.

P21. Barrier with a Seated Ion Exchange Bead and Method. Dasgupta, P. K.; Yang, B. Srinivasan, K.; Takeuchi; M. US Patent 7,632,404. 15 December, 2009.

P20. Continuous Ion Species Removal Device and Method. Dasgupta, P. K.; Kuban, P.; Berg, J. M. US Patent 7,582,482. 1 September, 2009.

P19. Method and apparatus for maintaining multiple planar fluid flows. Dasgupta, P. K. Surowiec, K.; Berg; J. M. US Patent 7,314,718. January, 2008.

P18 Membrane based volatile component removal devices for liquid chromatography. Dasgupta, P. K.; Ullah, S. M. Rahmat; Srinivasan; K. U.S. Patent 7,306,720. 11 December, 2007.

P17 Dasgupta, P. K.; Loree, E. L. Self-monitoring flow-through heater,. U.S. Patent 6,993,252 3 October, 2005.

P16 Denuder assembly for collection and removal of soluble atmospheric gases. Dasgupta, P. K.; Morris, K. J.; Li, J. U.S. Patent 6,890,372. 10 May, 2005.

P15 Bonne, U.; Goetz, J.; Dasgupta, P. K. Gas sensor with phased heaters for increased sensitivity. U.S. Patent 6,393,894. 28 May, 2002.

P14 Luminescence Detector with Liquid Core Waveguide. Dasgupta, P. K. US Patent 6,332,049. 18 December, 2001.

P13 Electromigration Injection from a Microreservoir Electrode in Capillary Separation Systems. Dasgupta, P. K.; Surowiec, K. US Patent 6,086,736. 11 July, 2000.

P12 Chemical Sensing Techniques Employing Liquid Core Optical Fibers. Dasgupta, P. K.; Liu, S. Y. US Patent 6,011,882. January 4, 2000.

P11 Forming Thin Film Interfaced Samples for Analysis with Capillary Separation Systems. Dasgupta, P. K. US Patent 5,814,199. 29 September, 1998.

P10 A Method for Determining A Component Using A Liquid Film or Droplet. Dasgupta, P. K. US Patent 5,766,959. 16 June, 1998.

P9. Apparatus for Capillary Electrophoresis having an Auxiliary Electroosmotic Pump. Dasgupta, P. K. US Patent 5,660,703. 26 August, 1997.

P8. Apparatus and Method for Flow Injection Analysis. Dasgupta, P. K.; Liu, S. US Patent 5,573,651. 12 November, 1996.

P7. Electrophoresis with Chemically Suppressed Detection. Dasgupta, P. K.; Bao, L-Y. US Patent 5,433,838. 18 July, 1995.

P6. Electrophoresis with Chemically Suppressed Detection. Dasgupta, P. K.; Bao, L-Y. US Patent 5,358,612. 25 October, 1994.

P5. Methods for Chromatography Analysis. Dasgupta, P. K. US Patent 5,316,630. 31 May, 1994.

P4. Method and Apparatus for Generating a High Purity Chromatographic Eluent. Dasgupta, P. K.; Strong, D. L.; Stillian, J. R,; Friedman, K. US Patent 5,045,204. 3 September, 1991.

P3. Apparatus and Method for Automated Microbatch Reaction. Dssgupta, P. K. US Patent 4,920,056. 24 April, 1990.

P2. Annular Dual Permselective Device and Method. Dasgupta, P. K. US Patent 4,647,380, 3 May, 1986.

P1. Continuously Rejuvenated Ion Exchanger. Dasgupta, P. K. US Patent 4,500,430. 19 February, 1985.

Many of these have been commercialized.

RESEARCH INTERESTS

Measurement of Trace Atmospheric Species and Atmospheric Chemistry
Air Pollution Toxicology
Automated Intelligent Analyzers
Microfabricated sensors and Instrumentation
Thin Film Flow Devices and Sensors
Automated Process Analyzers for the Chemical Industry
Novel Approaches to Ionic Analysis, Ion Behavior at High Field Strengths
Breath gas measurement in disease diagnostics
Iodine Nutrition and Perchlorate in the Environment
Mercury and arsenic in the environment,
Capillary ion/liquid chromatography and detectors
Dynamic imaging of chromatographic columns
Nonlinear absorbance amplification in multipath broadband spectroscopy
Instrumentation for Extraterrestrial Exploration

OTHER DISTINCTIONS

In 2010 the NSF Chemistry Division Committee of Visitors identified the arsenic project as an exemplar of excellence in support of the Division's investment in research, education, and infrastructure, one of 29 projects so recognized in the entire Chemistry division from hundreds of funded projects spanning 2007-2009 (http://www.nsf.gov/mps/advisory/covdocs/CHEcov_2010.pdf).

In 2006 the NSF has selected our Arsenic project for highlighting to congress.
In 2005 I provided invited testimony to the US Congress on the significance of pervasive occurrence of perchlorate in US Breastmilk. Our work on perchlorate has received extensive recognition in the past years, from CNN to NPR, from The *Wall Street Journal* to *Nature.* For a partial listing of websites still carrying the perchlorate story, see:
http://www.legalnewswatch.com/news_542.html
http://my.webmd.com/content/Article/101/106096.htm?pagenumber=1
http://www.theregister.co.uk/2005/02/24/perchlorate_in_milk/
http://www.ewg.org/issues/perchlorate/20050222/index.php
http://pubs.acs.org/subscribe/journals/esthag-w/2005/feb/science/rr_perchlorate.html
http://www.livescience.com/humanbiology/050224_rocket_fuel.html
http://www.eurekalert.org/pub_releases/2005-02/acs-pfi022205.php
http://pubs.acs.org/cen/news/83/i06/8306perchlorate.html
http://www.newscientist.com/article.ns?id=dn7057
http://sfgate.com/cgi-bin/article.cgi?file=/n/a/2005/02/24/national/a085611S41.DTL
http://www.sciencedaily.com/releases/2005/02/050222110959.htm
http://www.nature.com/news/2005/050221/full/050221-13.html
http://www.infoshop.org/inews/article.php?story=20050224160910875
http://www.gnn.tv/headlines/1232/Rocket_Fuel_Chemical_Found_in_Breast_Milk
http://www.wkyc.com/health/health_fullstory.asp?id=30855
http://www.wired.com/news/medtech/0,1286,66699,00.html?tw=wn_tophead_3
http://phoenix.bizjournals.com/phoenix/stories/2005/02/21/daily42.html
http://www.newsnet5.com/video/4228132/detail.html
http://www.usatoday.com/news/health/2005-02-24-fuel-milk_x.htm
http://abcnews.go.com/Health/wireStory?id=528023

Our work on iodine nutrition has also been widely cited and quoted; see for example:
http://www.ama-assn.org/amednews/2008/03/03/hlsb0303.htm
http://www.webmd.com/food-recipes/news/20080201/can-us-shake-iodine-deficiency-risk?...
http://pubs.acs.org/subscribe/journals/esthag-w/2008/jan/science/rr_iodine.html
http://ehp03.niehs.nih.gov/article/info%3Adoi%2F10.1289%2Fehp.118-a438
http://health.msn.com/healthy-living/articlepage.aspx?cp-documentid=100281124&gt1=31036

Our work on the commercialized version of the charge detector has been featured:
http://news.thermofisher.com/press-release/thermo-scientific/thermo-fisher-scientific-debuts-charge-detector-ion-chromatography

DISTINCTIONS AS A MENTOR
My students have consistently won many awards outside and inside the University. See for example,
http://www.depts.ttu.edu/chemistry/awards/GradAwards.html
http://www.depts.ttu.edu/gradschool/highlighttext9.php
The Song Prize (the award that annually recognized the best dissertation in the Department of Chemistry at Texas Tech) was established in 1991. Among a faculty of 30, my students have won this prize 8 of 19 times in the 1991-2009 period.

My students have won the ACS Environmental Chemistry Division Graduate Student Award five years in a row. Two of these years they have won the *Best* Graduate Student Paper Award.

RESEARCH GRANTS

The University of Texas at Arlington

139. Sensitive Optical Detection in Small capillaries. Agilent Technologies. $59,952 for one year starting September 1, 2015.

138. Detection of Amino Acids/Organics on an Open-Tubular Ion/Liquid Chromatograph. NASA. $983,311 for three years beginning September 1, 2015.

137. An Implantable In-line Shunt Flow Monitor for Hydrocephalus Treatment. Texas Medical Research Council (TexasMRC) $100,000 for one year beginning July 1, 2015.

136. GOALI: A Miniature Ion Chromatograph and Chromatography Imaging. NSF. $450,000 for three years beginning July 1, 2015.

135. Basic research in ionic analysis. ThermoFisher/Dionex. $40,000 for 1 year beginning January 1, 2015.

134. Basic research in ionic analysis. ThermoFisher/Dionex. $10,000 for 6 months beginning July 1, 2014.

133. A Fieldable speciation-capable green analyzer for arsenic. National Science Foundation. $199,910 for 18 months beginning July 1, 2014.

132. Basic research in ionic analysis. ThermoFisher/Dionex. $120,000 for one year beginning July 1, 2013.

131. Basic research in ionic analysis. ThermoFisher/Dionex. $120,000 for one year beginning July 1, 2012.

130. Broadband Multipath Spectrometry using High Diffuse Reflectivity Cavities. National Science Foundation, EAGER program, $197,000 for two years beginning September 1, 2012.

129. Molecularly Engineered Artificial Nanopores with Differential Selectivity and Sensitivity. Co-PI. National Science Foundation, $360,000 for three years beginning March 15, 2012.

128. An Ion Chromatograph for Extraterrestrial Explorations. National Aeronautics and Space Administration. $1,148,205 for four years beginning August 1, 2011

127. Basic research in ionic analysis. ThermoFisher/Dionex. $120,000 for one year beginning July 1, 2011.

126. Detection of Waterborne pathogens. Chipotle Business Group. $19,355 for 6 months beginning June 1, 2011.

125. Basic research in ionic analysis. Dionex Corporation. $120,000 for one year beginning July 1, 2010.

124. Iodine Nutrition in US Infants. Gerber Foundation. $50,000 for one year beginning January 1, 2010.

123. Upgrade of NMR Facilities for Research and Teaching. $340,800 for three years beginning August 1, 2009

122. Basic research in ionic analysis. Dionex Corporation. $120,000 for one year beginning July 1, 2009.

121. Development of Simple Diagnostic Devices that Will Allow Individuals to Self-Manage Use of Traditional, Complementary and Alternative Medicines (TCAM) and Dietary Supplements by Detecting Induction of CYP3A4 Using a Natural Metabolite. William R. Folk, University of Missouri-Columbia and James Syce, University of Western Cape, South Africa, PI. $100,000. Tibotec Therapeutics Global REACH Program. UTA Share: $25,100 for 1 year beginning March 16, 2009.

120. Occurrence and Distribution of Nitrophenols in Air and Rain Water in Houston and Dallas. Houston Advanced Research Center, $45,000 for 6 months beginning March 1, 2009.

119. Water Analytical System, Design, Fabrication, Testing and Calibration. State of Texas via Chipotle Business Group, $92,231 for one year beginning March 1, 2009.

118. Basic research in ionic analysis. Dionex Corporation. $100,000 for one year beginning July 1, 2008.

117. Development of a Novel Cyanide Sensor. Gerry Boss, The University of California at San Diego, PI. NIH Supplement. UTA share $160,000 for 3.5 years beginning November 1, 2008.

116. Electroosmotic Pump for Microchip HPLC. Shaorong Liu, University of Oklahoma at Norman, PI. $396,470 for two years beginning September 30, 2008. NIH. UTA share: $74,750

115. Metals in Environmental and Biological Systems. A Rational Approach to Sample Pretreatment and Analysis. NSF. $500,000 for three years beginning July 31, 2008.

114. Early Diagnostics of Hemoglobinopathies in Developing Countries. Healing Environment Foundation. $44,000 for one year beginning February 15, 2008.

113. Basic research in ionic analysis. Dionex Corporation. $87,500 for one year beginning July 1, 2007.

112. A Green Fieldable Analyzer for Arsenic, NSF. Supplement. $38,016 for one year beginning 02/01/08.

111. Basic research in ionic analysis. Dionex Corporation. $75,000 January 1, 2007- June 30, 2007.

110. Maternal Urinary Perchlorate as a Surrogate Measure of Breast Milk Perchlorate, Texas Department of State Health Services, $31,426 for one year beginning January 1, 2007.

109. Formaldehyde Field Measurements. Texas Commission for Environmental Quality, TEXAQS II. $28,500 for eight months beginning January 1, 2007.

Texas Tech University

108. Iodine Nutrition Status of US Infants and the Role of Perchlorate. The Gerber Foundation, $64,000 for one year beginning August 1, 2006. Transferred to UTA.

107. Perchlorate and Iodide Intake and Excretion in Breastfed Infants. Texas Advanced Research Program. $100,000 for two years beginning August 1, 2006. Transferred to UTA.

106. Fabrication, Description, Specification and Operator Training for Formaldehyde Measurement, TEXAQS II. Texas Commission for Environmental Quality, $85,000 (in addition, $45,000 in parts directly bought by sponsor) for one year beginning September 1, 2005.

105. Real Time Analyzers for Gases, Particles and Metals, NSF. $385,664 for three years beginning September 1, 2005. Transferred to UTA.

104. Mechanism of Natural Production and Occurrence of Sources of Perchlorate in the Environment,- SERDP. US Air Force. Multi-PI project. $518,754 for three years beginning September 1, 2005.

103. Basic Research in Ionic Analysis. Dionex Corporation. $75,000 for one year beginning July 1, 2005.

102. Field Intercomparison Study, Beltsville, MD. United States Environmental Protection Agency. $15,000 for one year beginning June 1, 2005.

101. A Green Fieldable Analyzer for Arsenic, NSF. $353,000 for three years beginning February 1, 2005.

100. Detection of Chemical and Biological agents, US Army RDECOM $153,125 for 15 months beginning October 1, 2004.

99. Basic Research in Ionic Analysis. Dionex Corporation. $75,000 for one year beginning July 1, 2004.

98. Rapid detection of Phosphonates using Molecularly Imprinted Polymers. United States Air Force. $95,000 for one year beginning July 1, 2003.

97. Nitric Acid Calibration Source and Measurement Intercomparison. Bay Region Atmospheric Chemistry Experiment. State of Florida Department of Environmental Quality, Tampa, FL. $74,366 for one year beginning September 1, 2003.

96. Aethalometric Liquid Chromatographic Mass Spectrometric Instrument for Characterization of Carbonaceous Particulate Matter. United States Environmental Protection Agency. $450,000 September 1, 2003- August 31, 2008. Transferred to UTA.

95. Basic Research in Ionic Analysis. Dionex Corporation. $75,000 for one year beginning July 1, 2003.

94. Basic Research in Ionic Analysis. Dionex Corporation. $57,000 for one year beginning July 1, 2002.

93. Monitoring of Gaseous Nitric Acid, Ammonia, Sulfur Dioxide and Particulate Nitrate, Sulfate and Ammonium. Lake Michigan Air Directors Consortium, Des Plaines, IL. $145,000 for two years beginning May 1, 2002.

92. Measurement of Gaseous Formaldehyde, Hydrogen Peroxide, Methyl Hydroperoxide, Ammonia, and Nitric acid and Aerosol Nitrate during the Bay Region Atmospheric Chemistry Experiment. State of Florida Department of Environmental Quality, Tampa, FL. $110,570 for one year beginning January 1, 2002.

91. Fast Versatile Microfabricated Moisture Sensors. Center for Process Analytical Chemistry, University of Washington, Seattle, WA. $78,000 for 18 months beginning January =1, 2002.

90. Two-Week Intercomparison Field Study at RTP, NC. US Environmental Protection Agency via Man-Tech Environmental, $10,500 January 1-June 30, 2002.

89. Basic Research in Ionic Analysis. Unrestricted Grant, Dow Chemical, $10,000 for one year beginning October 1, 2001.

88. Detection of Chemical and Biological agents, SBCCOM $267,000 for one year beginning October 1, 2001.

87. Basic Research in Ionic Analysis. Dionex Corporation. $55,560 for one year beginning July 1, 2001.

86. Philadelphia Field Studies. US Environmental Protection Agency via Man-Tech Environmental, $41,500 June1-December 31, 2001.

85. Curriculum Development, Micromachining, Microfluidics and Microsensors. National Science Foundation, $477,000 for three years beginning October 1, 2000.

84. Detection of Chemical and Biological agents, SBCCOM $400,000 for one year beginning October 1, 2000.

83. Biofluidic Chips. Bioarray LLC, $204,000 for two years beginning October 1, 2000.

82. Large Surface Bio-Chem Decontamination, SBCCOM $400,000 for one year beginning October 1, 2000.

81. XYZ on a chip: UV Fluorescence/Absorption Micro-Analysis System. NSF, $936,498 for three years beginning September 1, 2000.

80. Low wavelength synchronous fluorescence measurements on a chip. DARPA, $937,000 for four years beginning September 1, 2000.

79. Measurement of Hazardous Gases and Vapors using a Liquid Core Waveguide. ATSDR $185,000 for one year beginning July 31, 2000

78. Basic Research in Ionic Analysis. Dionex Corporation. $55,000 for one year beginning July 1, 2000.

77. An Automated Instrument for Measuring Endotoxins in Process Water. Biowhittaker and Anatel Corporation, $120,000 for two years beginning May 1, 2000.

76. Atmospheric Characterization. Houston Supersite 2000. United States Environmental Protection Agency through the University of Texas at Austin. $350,000 for 30 months beginning March 1, 2000.

75. Two-Dimensional Conductometric Ion Chromatography. Dow Chemical Co. Unrestricted grant, $10,000 for one year beginning February 1, 2000.

74. Design, Construction, Establishment of Proof of Principle, and Testing of a Spectrometer to Permit Spectroelectrochemical Investigations of Actinides in a Confined System, Phase III. US Department of Energy and Los Alamos National Laboratory, through Amarillo National Research Center for Plutonium. $95,840 for one year beginning January 16, 2000.

73. An Instrument for the Determination of Leather Shrinkage. Texas Tech University Leather Research Institute. $20,000 for fifteen months beginning September, 1999.

72. Determination of Refractive Index of Crude Oil. US Department of Energy through New Mexico Institute of Mining and Technology. $100,590 for 20 months beginning September 1999.

71. Real Time Field Monitoring of Airborne Cr(VI), Arsenic, Benzene and Trichloroethylene in Water. Phase II. US Air Force / SERDP $188,785 for 15 months beginning September, 1999.

70. Supersite Research Task 7. Continuous Measurement of Composition of Aerosol Particles at the Atlanta Supersite. US Environmental Protection Agency via Georgia Institute of Technology. $66,000 for one year beginning June, 1999.

69. Basic Research in Ionic Analysis. Dionex Corporation. $50,000 for one year beginning July, 1999.

68. Design, Construction, Establishment of Proof of Principle, and Testing of a Spectrometer to Permit Spectroelectrochemical Investigations of Actinides in a Confined System, Phase II. US Department of Energy and Los Alamos National Laboratory, through Amarillo National Research Center for Plutonium. $97,722 for one year beginning January 16, 1999.

67. Center for Process Analytical Chemistry, University of Washington, Seattle, WA. $60,000 for one year beginning January, 1999.

66. Real Time Field Monitoring of Airborne Cr(VI), Arsenic, Benzene and Trichloroethylene in Water. US Air Force / SERDP $233,461 for 15 months beginning September, 1998.

65. Basic Research in Ionic Analysis. Dionex Corporation. $50,000 for one year beginning July, 1998.

64. Determination of Hexavalent Chromium in Leather. Leather Research Institute. $22,400 for fifteen months beginning June, 1998.

63. Continuous Titrator for KOH in Polyols. The Dow Chemical Company. $61,370 for two years beginning January, 1998.

62. New Approaches to Measurement of Fat Stability. Determination of Stability Status: Present and Potential. Novus International. $51,838 for one year beginning January, 1998.

61. Design, Construction, Establishment of Proof of Principle, and Testing of a Spectrometer to Permit Spectroelectrochemical Investigations of Actinides in a Confined System. US Department of Energy and Los Alamos National Laboratory, through Amarillo National Research Center for Plutonium. $99,917 for one year beginning January 16, 1998.

60. Basic Research in Ionic Analysis. Dionex Corporation. $40,000 for one year beginning July, 1997.

59. Field-Usable Compact Capillary Based Ion/Liquid Chromatographs. US Environmental Protection Agency. $353,762 for three years beginning October 15, 1996.

58. Analytical Chemistry in a Drop. Dow Chemical Co. Unrestricted grant, $10,000 for one year beginning July 1, 1996.

57. Indoor Air Pollution. Diagnosing Sick Building Syndrome: Biological or Chemical Problem? State of Texas Advanced Technology Program. $137,662 for two years plus $20,000 from QIC Inc, beginning January 1, 1996.

56. Monitoring System for Accidental Plutonium Release. Texas Engineering Experimental Station (PANTEX). $112,500 for 24 months beginning September 1, 1995.

55. Air Sampling and Ionic Analysis. Dionex Corporation. $45,497 for one year beginning July, 1995.

54. Analytical Chemistry in a Drop. Dow Chemical Company. $45,376 for one year beginning June, 1995.

53. Separations on Water-Ice. US Department of Energy. $203,000 for two years beginning November, 1994.

52. Quality Control: Measurement of Aerosol Acidity. US Environmental Protection Agency, $9,988 for one year beginning October, 1994.

51. Determination of Trace Atmospheric Gases by Capillary Electrophoresis (CE). Size-selective Sampling and Analysis of Atmospheric Particles by a CE-based Analyzer. US Environmental Protection Agency. $408,893 (including $55,705 in university contributions) for three years beginning September, 1994.

50. Ionic Analysis and Air Sampling. Dionex Corporation. $43,000 for one year beginning July, 1994.

49. Airborne Measurement of Trace Gases in Marine Atmospheres. Development of Instrumentation for Fast Measurement of the Chemical Composition of Marine and Coastal Aerosol. Office of Naval Research. $301,144 for three years beginning January, 1994.

48. Inexpensive Remotely Addressable Soil Moisture Sensors Phase Two. Texas Advanced Technology Program, 1993. $60,624 for two years beginning January, 1994.

47. Design and Construction of a Fast Responding Formaldehyde Monitor for Ground-based and Helicopter-based deployment. Tennessee Valley Authority, Muscle Shoals, AL $16,441 for two months beginning October, 1993.

46. Effect of Expired Ammonia in Inhalation Toxicologic Studies of Acid Aerosols with Human Volunteers. Field Study; Ranchos Los Amigos Research and Educational Institute, $20,000 for four months beginning October, 1993.

45. Multidimensional Detection in Ionic Analysis. Dionex Corporation. $43,000 for one year beginning July, 1993.

44. Membrane Interface to Capillary Electrophoresis. The Dow Chemical Company, USA. $129,220 for 27 months two years beginning October, 1992.

43. Flow Injection Analysis, Unrestricted Grant, Shell Development Company. $25,000 for one year beginning July, 1992.

42. Two-Dimensional Conductometric Detection in Ion Chromatography. Dionex Corporation. $40,000 for one year beginning July, 1992.

41. Mapping Sulfur and Ammonia Emission in Texas: A Mobile Atmospheric Research Laboratory, Phase Two, 1991. $116,000 for two years beginning January, 1992.

40. Inexpensive Remotely Addressable Soil Moisture Sensors. Texas Advanced Technology Program, 1991. $49,103 for two years beginning January, 1992.

39. Membrane Interface to Capillary Electrophoresis. The Dow Chemical Company, USA. $40,000 for one year beginning October, 1991.

38. Determination of Total Carbonyl Content of Organic Solvents. Shell Development Company. $25,000 for one year beginning October, 1991.

37. Development of Continuous Monitor for Gas and Aerosol Acidity. US Environmental Protection Agency. $236,350 for two years beginning October 1, 1991.

36. Analyte Identification, Peak Purity Determination and Universal Calibration Using Simultaneous Suppressed and Nonsuppressed Ion Chromatography, Phase II. Dionex Corporation. $36,000 for 12 months beginning July, 1991.

35. Research on Analytical Chemistry. Unrestricted grant, The Dow Chemical Company, USA. $10,000 for one year beginning June, 1991.

34. Research on Continuous Flow Analysis. Unrestricted grant, Shell Development company. $35,000 for one year beginning April, 1991.

33. Wet Effluent Denuder Coupled Liquid/Ion Chromatography Systems (WEDCLICS): A Versatile Technique for The Analysis of Atmospheric Trace Gases. US Environmental Protection Agency, 1990. $358,760 for four years beginning September, 1990.

32. Ultrasensitive Sensors for Process Water Measurement. EG & G Chandler Engineering. Unrestricted grant, $30,000 for one year beginning January, 1990.

31. Research on Continuous Flow Analysis. Unrestricted grant, Shell Development Company. $35,000 for one year beginning April, 1990.

30. Analyte Identification, Peak Purity Determination and Universal Calibration Using Simultaneous Suppressed and Nonsuppressed Ion Chromatography. Dionex Corporation. $40,750 for 15 months beginning April, 1990.

29. Mapping Sulfur and Ammonia Emissions in Texas. A Mobile Atmospheric Research Laboratory. Texas Advanced Research Program, 1990. $164,120 for two years beginning January, 1990.

28. Novel Approaches to Ionic Chromatography. US Department of Energy, 1990. $244,000 for 3 years beginning January, 1990.

27. Automated Measurement of Ozone Residual in Water. American Water Works Association Research Foundation. $140,000 for two years beginning September, 1989. Joint project with University of California, Davis.

26. Electrodialytic Eluent Generator for Ion Chromatography. Dionex Corporation. $28,200 for one year beginning April, 1989.

25. Research on Analytical Chemistry. Unrestricted grant, The Dow Chemical Company, USA. $10,000 over one year beginning March, 1989.

24. Research on Continuous Flow Analysis. Unrestricted grant, Shell Development Company. $30,000 over one year beginning March, 1989.

23. Measurement of Urinary Mercury by Fenton's Reagent Digestion. Arizona Instruments (formerly Jerome Instrument Company). $16,800. "Jerome Postdoctoral Fellowship" and Research Supplies. Six months beginning July, 1988.

22. Flow Injection Analysis: Water in Organic Solvents. Shell Research and Development. $41,500 for one year beginning February, 1988.

21. Diffusion Scrubber Coupled Ion Chromatography for the Measurement of Trace Atmospheric Gases. Electric Power Research Institute. $200,521 over three years beginning January, 1988.

20. Novel Approaches to Ionic Chromatography. US Department of Energy, 1987. $170,000 over 25 months beginning December, 1987.

19. Measurement of Sulfur Dioxide with a Gold film Analyzer. Jerome Instrument Company. $25,200, "Jerome Postdoctoral Fellowship" and Research Supplies, one year beginning July 1987.

18. Pulsed Gas Carrier Continuous Flow Analysis. The Dow Chemical Company, USA. $106,068 for three years, beginning July, 1987.

17. Field Measurement of Ambient Hydrogen Peroxide and Formaldehyde in Summertime Los Angeles, Carbonaceous Species Methods Comparison Study. US Environmental Protection Agency/Environmental Monitoring Systems. $9959, June 1 – August 31, 1986.

16. Field Measurement of Ambient Hydrogen Peroxide and Formaldehyde. US Environmental Protection Agency/Northrop Services. $39,500, June 1 – August 31, 1986.

15. A Center for Synthetic Advanced Membrane Technology. State of Texas. $335,000 for two years beginning January, 1986. Co-Principal Investigator with R. A. Bartsch and D. W. Armstrong.

14. Membrane Differentiated Gas Phase Flow Injection Analysis. The Dow Chemical Company, USA. $63,000 for two years beginning February, 1986.

13. Improved Analytical Method for the Measurement of Gas and Aqueous Phase Peroxides. US Environmental Protection Agency, 1985. $190,000 over two years beginning May, 1985.

12. Novel Approaches to Ionic Chromatography. US Department of Energy, 1984. $253,000 over three years, beginning September, 1984. Additional matching funds of $20,000 from Center for Energy Research at Texas Tech University.

11. Continuous Determination of Formaldehyde and Sulfur Dioxide in the Gas Phase and Formaldehyde, S(IV) and the Formaldehyde - S(IV) Adduct in Atmospheric Water. Electric Power Research Institute, 1983. $89,788 over two years beginning January, 1984. Additional matching funds of $15,000 from Center for Energy Research at Texas Tech University.

10. Continuous Determination of Background Levels of Sulfur Dioxide. Texas Tech University Graduate School, June 1 – August 31, 1983. $700.

9. Continuous Measurement of Ambient Hydrogen Peroxide. Measurement of Hydrogen Peroxide (and Formaldehyde, and S(IV)) in Gas Phase and Cloudwater. Environmental Protection Agency. $90,103 over two years beginning October, 1983. Additional matching funding of $20,000 from Center for Energy Research, Texas Tech University.

8. Mass Transfer in Dialysis Systems : Application of Filament-Filled Helical Membrane Tubing in Artificial Kidney/Lung Machines. Seed Support, Biomedical Research Grant Support Program, National Institutes of Health, $2,500 June 1 – August 31, 1983.

7. Infectivity Model Verification Studies with Nitrogen Dioxide. General Motors Corporation (Coordinating Research Council), June 1 – August 31, 1983. Co-Investigator with J. J. McGrath, Texas Tech University Health Sciences Center. Summer support of one graduate student. $2,100.

6. Real Time Determination of Atmospheric Acidity. State of Texas Organized Research Funds. $6,000 over January 1-December 31, 1982.

5. Ion Exchange Chromatography for Trace Ionic Analysis in Water. State of Texas Water Resources Research Center. $6,362 over two years beginning July 1, 1981.

4. Ion Chromatography with Novel Solid Supports and Detection Methods. Texas Tech University Institute of Arts and Sciences, July1, 1981 – June 30, 1982. $1,000.

University of California at Davis

3. Comparison of Nitrogen Dioxide and Ozone Toxicity in Rat Lungs. Southern California Edison Company. $98,625 over 1 year in January 1 – December 31, 1981. Co-Principal investigator with J. A. Last.

2. Effect in the Lung of Sulfur Dioxide, Nitrogen Dioxide and Ozone in Humidified Atmospheres. California Air Resources Board. $150,601 over 1 year in January 1 – December 31, 1981. Co-Principal investigator with A. C. Jackson.

1. Health Effects of Gaseous and Particulate Effluents of Coal Utilization: Effects of Various Oxidation States of Sulfur, Nitrogen and Their Compounds. Electric Power Research Institute. $1,835,215 over three years, January1, 1979 – December 31, 1981. Multidisciplinary project with multiple investigators, headed pollutant generation and characterization efforts.

Publications

Journal Articles
(Publications are available in electronic format by request for personal use, subject to copyright regulations)

422. Water ICE. Ion Exclusion Chromatography of Very Weak Acids with a Pure Water Eluent. Liao, H.; Shelor, C. P.; Dasgupta, P. K. *Anal. Chem.*, **2016,** *88*, doi:10.1021/acs.analchem.6b00902

421. Polyvinyl Alcohol Modified Porous Graphitic Carbon Stationary Phase for Hydrophilic Interaction Liquid Chromatography. Hou, Y.; Zhang, F.; Liang, F.; Yang, B. C.; Liu, X.; Dasgupta, P. K. *Anal. Chem.*, **2016,** *88*, doi:10.1021/acs.analchem.5b04384

420. Permeative Amine Introduction for Very Weak Acid Detection in Ion Chromatography. Liao, H.; Dasgupta, P. K. *Anal. Chem.*, **2016,** *88*, 2198–2204. doi:10.1021/acs.analchem.5b03836

419. Transient Ion-Pair Separations for Electrospray Mass Spectrometry. Liu, H.; Lam, L.; Chi, B., Kadjo, A. F.; Dasgupta, P. K. *Anal. Chem.*, **2016,** *88*, 2059–2064. doi:10.1021/acs.analchem.5b03202

418. Sampling Frequency, Response Times and Embedded Signal Filtration in Fast, High Efficiency Liquid Chromatography: A Tutorial. Wahab, M. F.; Dasgupta, P. K.; Kadjo, A. F.; Armstrong, D. W. *Anal. Chim. Acta*. **2016,** *907*, 31-44. doi:10.1016/j.aca.2015.11.043

417. Simultaneous Electrodialytic Preconcentration and Speciation of Chromium(III) and Chromium(VI). Ohira, S.-I., Nakamura, K.; Shelor, C. P.; Dasgupta, P. K.; Toda, K. *Anal. Chem.*, **2015,** *87*, 11575–11580. doi: 10.1021/acs.analchem.5b03464

416. A Fast, Accurate, Speciation-Capable, Automated, and Green Gas-Phase Chemiluminescence Approach for Analyzing Waterborne Arsenic. Ghosh, A. K.; Das, A. N.; Dasgupta, P. K. *LC.GC* **2015,** *33*(10), 10–17. http://www.chromatographyonline.com/fast-accurate-speciation-capable-automated-and-green-gas-phase-chemiluminescence-approach-analyzing

415. Conductance or Admittance? Zhang. M.; Dasgupta, P. K. Q&More. Issue 215, October 2015.
German Version http://q-more.chemie.de/q-more-artikel/215/konduktanz-oder-admittanz.html
English Version http://q-more.chemeurope.com/q-more-articles/215/conductance-or-admittance.html

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A28. Handbook of Air Pollution Analysis. Book Review. Dasgupta, P. K. *J. Amer. Chem. Soc*. **1987,** *109*, 4430.

A27. Chromatograms. Dasgupta, P. K. et al., *Recorder* **1987,** *3*, 107-108.

A26. Application of continuous liquid phase fluorescence analysis for the selective determination of gases. Dasgupta, P. K. Abstract No. 743-16, *Proc. SPIE O-E/LASE' 87*, Los Angeles, CA, January, 1987.

A25. Ion exchange resin packed annular dual membrane suppressors in ion chromatography. Mercurio-Cason, M. A.; Dasgupta, P. K. Abstract No. 296, *Abstracts, 27th Rocky Mountain Conference*, Denver, CO, July, 1985.

A24. Fluorescence Detection with Fluorogenic Ion Interaction Reagents in Metal Ion Chromatography. Dasgupta, P. K.; Soroka, K. Abstract No. 295, *Abstracts, 27th Rocky Mountain Conference*, Denver, CO, July, 1985.

A23. Organic acid determination of grape juice and wine by HPLC. Purkiss, L. D. Mitchell, R. E.; Dasgupta, P. K. Abstract No. 204, *Abstracts, 40th Southwest Regional Meeting of the American Chemical Society*, Lubbock, TX, December, 1984.

A22. Ion interaction reagents in ion chromatography. Mercurio, M. A.; Dasgupta, P. K. Abstract No. 15, *Abstracts, 40th Southwest Regional Meeting of the American Chemical Society*, Lubbock, TX, December, 1984.

A21. Ion penetration through tubular ion exchange membranes. Bligh, R. Q.; Dasgupta, P. K. Abstract No. 14, *Abstracts, 40th Southwest Regional Meeting of the American Chemical Society*, Lubbock, TX, December, 1984.

A20. Membrane based suppressors and postsuppressors in ion chromatography. Dasgupta, P. K. Abstract No. 13, *Abstracts, 40th Southwest Regional Meeting of the American Chemical Society*, Lubbock, TX, December, 1984.

A19. Titration by Pulse Width Measurements: A new concept in flow injection analysis. Rhee, J. S.; Dasgupta, P. K. Abstract No. 9, *Abstracts, 40th Southwest Regional Meeting of the American Chemical Society*, Lubbock, TX, December, 1984.

A18. Flow injection analysis of aqueous S(IV). McDowell, W. L.; Dasgupta, P. K. Abstract No. 8, *Abstracts, 40th Southwest Regional Meeting of the American Chemical Society*, Lubbock, TX, December, 1984.

A17. Continuous flow analysis of hydrogen peroxide. Hwang, H.; Dasgupta, P. K. Abstract No. 7, *Abstracts, 40th Southwest Regional Meeting of the American Chemical Society*, Lubbock, TX, December, 1984.

A16. Oxaldihydroxamic acid as a new reagent for the fixation of atmospheric sulfur dioxide. Discussion. Dasgupta, P. K. *Atmos. Environ.* **1984,** *18,* 477-478.

A15. Determination of S(IV) in particulate matter. Author's Reply. Dasgupta, P. K.; DeCesare, K. B.; Brummer, M. *Atmos. Environ.* **1984,** *17,* 2635-2637.

A14. Chloride ion effects on the aqueous oxidation of sulfur Dioxide. Discussion. Dasgupta, P. K. *Atmos. Environ.* **1983,** *17,* 1856.

A13. The reaction of nitrogen oxides with sulfur dioxide in aqueous aerosols. Discussion. Dasgupta, P. K. *Atmos. Environ.* **1982,** *16,* 875.

A12. Determination of atmospheric sulfur dioxide without tetrachloromercurate (II). II. A fluorescent version of the Schiff reaction. Dasgupta, P. K. Presented at the 181st ACS National Meeting, Atlanta, GA, March 31, 1981. *Environmental Chemistry Extended Abstracts* ENVR 35.

A11. A new method of generation of gases at parts per million levels for the generation of standard Gases. Correspondence. Dasgupta, P. K. *Environ. Sci. Technol.* **1981,** *15,* 600.

A10. On the formaldehyde content of the atmospheric aerosol. Discussion. Dasgupta, P. K. *Atmos. Environ.* **1981,** *15,* 1098.

A9. The production and characterization of a transition metal (Fe(III)) - S(IV) aerosol. Discussion. *Atmos. Environ.* **1981,** *15,* 1097-1098.

A8. The importance of atmospheric ozone and hydrogen peroxide in oxidizing sulphur dioxide in cloud and rainwater. Further discussion. Dasgupta, P. K. *Atmos. Environ.* **1980,** *14,* 620-621.

A7. The importance of atmospheric ozone and hydrogen peroxide in oxidizing sulphur dioxide in cloud and rainwater. Discussion. Dasgupta, P. K. *Atmos. Environ.* **1980,** *14,* 272-275.

A6. The Effect of Nitrogen Dioxide and Some Transition Metals on the Oxidizing Sulphur Dioxide in Cloud and Rainwater. Discussion. Dasgupta, P. K. *Atmos. Environ.* **1980,** *14,* 271.

A5. The vapor pressure of ammonium sulfates. Discussion. Dasgupta, P. K. *Atmos. Environ.* **1980,** *14,* 267.

A4. Study of transition metal ion- S(IV) systems. Author's Reply. Dasgupta, P. K.; Mitchell, P. A.; West, P. W. *Atmos. Environ.* **1979,** *13,* 1725-1729.

A3. Specific determination of aerosol sulfuric acid in the presence of ammonium sulfate. Author's reply. Dasgupta, P. K.; Lundquist, G. L.; West, P. W. *Atmos. Environ.* **1979,** *13,* 1604-1605.

A2. The measurement of sulfuric acid and sulfate content of particulate matter resulting from the combustion of coal and oil. Discussion. Dasgupta, P. K., West, P. W. *Atmos. Environ.* **1979,** *13,* 1221-1222.

A1. Electronic Excitation and Energy Sufficiency in Redox Chemiluminescence. Dasgupta, P. K.; Keszthelyi, C. P. *Electrochemical Society Extended Abstracts* **1974,** *74(1),* 697.

INVITED LECTURES

2015

Pacifichem, Honolulu, Hawaii. December.
HPLC 2015, Beijing, China. Keynote lecture, September.
Beijing University of Chemical Technology, Beijing, China, September.
Chulalongkorn University, Beijing, China, September.
East China University of Science and Technology, Shanghai, China, September.
Japan Society of Analytical Chemistry National Meeting, Fukuoka, Japan. Keynote lecture, September.
Pittcon, New Orleans, LA, March.
International Capillary Chromatography Symposium, Ft. Worth TX. Plenary Lecture, May.
Flow Analysis XIII, Keynote Lecture, Prague, July.
J. Calvin Giddings Award Lecture, 250th Meeting of the American Chemical Society, Boston, MA. August.

2014

Indian Institute of Chemical Biology, Kolkata, India, December.
19th International Conference on Flow Injection Analysis, Keynote Lecture, Fukuoka, Japan, December
Kumamoto University, Kumamoto, Japan, November.
Hiroshima University, Hiroshima, Japan, November.
Tokushima University, Tokushima, Japan, November.
Annual Conference of the Korean Chemical Society, Plenary Lecture, Jeju Island, Korea, November.
University of Texas at Arlington Research Institute, October.
City University of Hong Kong, S. A. R. China, September.
Xiamen University, Xiamen, China, September.
Zhejiang University, Hangzhou, China, September.
East China University of Science and Technology, Shanghai, China, September.
7th Shanghai International Symposium on Analytical Chemistry, Plenary lecture, Shanghai, China, September.
Shaanxi Normal University, X'ian, China, September.
Northeastern University, Shenyang, China, September.
Tsinghua University, Beijing, China, September.
Beijing University of Science and Technology, Beijing, China, September.
Beijing University of Chemical Technology, Beijing, China, September.
International Symposium on Chromatography, Salzburg, Austria. Keynote Lecture, September.
Technical University of Vienna, Vienna, Austria. September.
Palacky University, Olomouc, CZ. June.
Baylor University, Waco, TX. April.
Indian Association for the Cultivation of Science, March.
Pittcon 2014, Chicago, IL, PA, March

2013

Japanese Association for Flow Injection Analysis, Opening Keynote Lecture, November.
FACCS 2013, SciX, Milwaukee, WI. October.
University of Warsaw, Warsaw, Poland, Fulbright Lecturer, May-June.
Marie Curie University, Lublin, Poland, May
University of Alaska at Fairbanks, AK. Student Association Invitee, April.
American Chemical Society Spring National Meeting, New Orleans, LA. April.
NASA Jet Propulsion Laboratory, Pasadena, CA, April.
Conference on Oceanography and Chemical Analysis, SOEST, University of Hawaii, Manoa, HI. Co-PI of NSF-funded Workshop, Plenary Lecture, March.
Villanova University, Philadelphia, PA, March.
Pittcon 2013, Philadelphia, PA, March
Korea University, Seoul, Korea, March.
Yonsei University, Seoul, Korea, March.
Seoul Institute of Public Health, Seoul, Korea, March.
Indian Association for the Cultivation of Science, Kolkata, India, January.
Indian Institute of Technology, Mumbai, India, January.
Maharashtra Pollution Board, Mumbai, India, January

2012

Royal Australian Chemical Institutes, Analytical and Environmental Chemistry Divisions Research and Development Topics Meeting, Geelong, Australia. December.
Massey University, School of Chemical Sciences, Palmerston North, NZ, December.
Brown-Williamson Lecture, University of Louisville, Louisville, KY. November.
SWRM 2012 Award Lecture, Southwest Regional Meeting of the American Chemical Society, Baton Rouge, LA. November.
Dennis C. Shelly Memorial Symposium, Southwest Regional Meeting of the American Chemical Society, Baton Rouge, LA. November.
9th International Conference on Persistent Toxic Substances, Miami, FL. October.
Oklahoma State University. Stillwater, OK. October
International Conference on Flow Analysis, Thessaloniki, Greece. Keynote Lecture, September.
International Ion Chromatography Symposium, Berlin, Germany. Plenary Lecture, September.
Southeast Missouri State University, Springfield, MO. September.
ThermoFisher/Dionex. Sunnyvale, CA. June.
COUNTERACT, National Institutes of Health Conference, San Francisco, CA. June.
Charles University, Prague, Czech Republic, June
Chiranal 2012, Olomouc, Czech Republic. Opening Keynote Lecture. June.
Palacký University, Olomouc, Czech Republic, June.
University of Washington, Seattle, WA. May.
Montana State University, Missoula, MT. April.
Dal Nogare Award Lecture, Pittcon 2012, Orlando, FL. March. http://www.youtube.com/watch?v=UGE3KgiIcyQ
University of Burdwan, WB, India. Distinguished Alumnus Lecture. January.
Bankura Sammilani College, Bankura, WB, India. January.
Bankura Christian College, Bankura, WB, India. Distinguished Alumnus Lecture. January.

2011

4th International Chromeleon Users Conference, Plenary Lecture. Faraday Theater, Royal Institution, London, England. November.
Oak Ridge National Laboratory, Oak Ridge, TN. October.
University of Tennessee, Knoxville, TN. October.
14th Asian Chemical Congress, Keynote Lecture, Bangkok, Thailand. September.
Chiangmai University, Chiangmai, Thailand. September.
American Chemical society National Meeting, Chromatography Award Symposium, ACS Award Lecture in Chromatography. Denver, CO. August.
17th International Conference in Flow Analysis, Krakow, Poland. Keynote Lecture. July.
University of Warsaw, Warsaw, Poland, June.
University of Cincinnati, Cincinnati, OH. May.
American Chemical Society National Meeting, Anaheim, CA. March.
Pittsburgh Conference, 2011, Atlanta, GA. March.

2010

Department of Electrical Engineering, University of Texas at Arlington. December.
Texas Christian University, Fort Worth, TX. November.
Dean of Libraries Focus on Faculty Lecture, University of Texas at Arlington, November.
University of Alberta, Edmonton, Alberta, Canada. April.
Tufts University, Medford, MA. March.
Pittsburgh Conference, 2010, Orlando, FL. March, 2010.

2009

Chulalongkorn University, Thailand. December.
International Ion Chromatography Symposium, Malahide, Ireland. September.
Metrohm AG, Herisau, Switzerland. September.
Euroanalysis, Innsbruck, Austria. September.
State University of New York at Buffalo, Buffalo, New York. Foster Lecture/ April.

Zhejiang University, Xi xi campus, Hangzhou, China. April.
Pittsburgh Conference, Chicago, IL. March.
Zhejiang University, Zijingang Campus, Hangzhou, China. March.
Zhejiang University, Institute of MicroAnalytical Systems. Hangzhou, China. March.
BAM, Federal Institute of Materials Research and Testing, Berlin, Germany. March.
Conference Uber Ionenanlyse, Berlin, Germany. Plenary Lecture. March.
American Chemical Society Dallas Ft Worth Section, Arlington, TX. January.
Dionex Corporation, Sunnyvale, CA. January.
Society of Western Analytical Professors Meeting, San Jose, CA. January.

2008
Eastern Analytical Symposium, New Jersey. November.
University of Oklahoma, Norman. Barton-Karcher-Fetterman Lecture. November.
Gunma University, Kiryu, Japan. October.
International Conference on Flow Injection Analysis, Nagoya, Japan. Keynote Lecture. September.
Tokyo Institute of Technology, Tokyo, Japan. September.
Sofia University, Tokyo, Japan. September.
International Ion Chromatography Symposium, Portland, OR. Plenary Lecture. September
Northeastern University, Shenyang, China, August.
University of Waterloo, Waterloo, Ont. Canada. May.
Colorado State University, Ft. Collins, CO. May
University of British Columbia, Vancouver, Canada, April
Texas A&M University, College Station, TX. Department of Atmospheric and Earth Sciences. April.
University of Central Oklahoma, Edmond, OK. April.
University of Missouri, Columbia, MO. Department of Electrical Enginering. March
Pittsburgh Conference, New Orleans, LA. March.
Extech 2008, Brugge, Belgium. Keynote Lecture. January.
Mahidol University, Bangkok, Thailand. January.
Kolkata University, Kolkata, India, January.

2007
Chiangmai University, Chiangmai, Thailand. December.
Indiana University, Bloomington, IN. October.
14th Encontro Nacional de Quimica Analitica (ENQA), Joao Pesoa, Brazil, October.
Zhejiang University, Hangzhou, China. September.
Colloquium Spectroscopicum Internationale XXXV, Xiamen, China. Keynote Lecture. September.
Beijing University, Beijing, China. September
Texas A&M University, Commerce, September.
Department of Physics, University of Texas at Arlington, September.
University of Melbourne, Melbourne, Australia. Mieguynah Public Lecture. August
University of Melbourne, Melbourne, Australia. Department of Chemistry, August
Royal Australian Chemistry Institute (RACI) Lecture , Royal Melbourne Institute of Technology, August
University of South Pacific, Suva, Fiji, July.
United States Environmental Protection agency, Washington D. C. June.
Pittsburgh Conference, Chicago, IL. February.

2006
University of Toledo, Frontiers in Chemistry Lecture, Toledo, OH. October
University of Illinois at Urbana-Champaign, Urbana-Champaign, IL. October
University of California, Davis. Davis, CA. Department of Civil and Environmental Engineering. Ray B. Krone Commemorative Lecture. October.
33rd FACSS Annual Meeting. Lake Buena Vista, FL. September.
Northern Arizona University, Flagstaff, AZ. September.
International Conference on Flow Analysis X, Porto, Portugal. September.
International Congress on Analytical Sciences, Moscow, Russia. Keynote Lecture. June.
University of Texas at Arlington, TX. April.

American Chemical Society, 231st National Meeting, Atlanta, GA. March.
University of Texas at San Antonio, TX. March.
US National Science Foundation – Thailand Research Foundation joint workshop in Analytical Sciences. Chiang Mai, Thailand. January.

2005
Pacifichem 2005. International Chemistry Congress. Honolulu, HI. December
Texas Tech University, Lubbock, TX. Department of Chemical Engineering. December.
Texas Tech Universty, Lubbock, TX. Department of Chemistry. November.
University of Texas, El Paso. El Paso, November.
Northeastern University, Shenyang, China. October.
Zhejiang University, Hangzhou, China. October.
State Key Laboratory for Eco-Environmental Sciences, Beijing, China. October.
Elsevier Lecture for Authors and Reviewers. Beijing, China. October.
Beijing Conference on Environmental and Instrumental Analysis. Beijing, China. Keynote Lecture. October.
Wake Forest University, Winston-Salem, NC. October.
International Ion Chromatography Symposium, IICS 2005 Outstanding Achievement Award Lecture, Montreal, Canada, September.
47th Rocky Mountain Conference on Analytical Chemistry. Denver, CO. Keynote Lecture. August.
Dublin City University, Dublin, Ireland. June.
United States Environmental Protection Agency, Headquarters. Washington DC. June.
Texas Tech University Department of Mechanical Engineering, April.
Iowa State University, Ames, IA. April.
Utah State University, Logan, UT. April.
Texas Department of Health Services, Austin, TX. April.
United States Congress. Staff Briefing, Washington DC. March.
University of Texas at Houston, School of Public Health, Houston, TX. February.
American Association of Aerosol Research Specialty Conference, Atlanta, GA. February. United States Environmental Protection Agency, Region VI. Dallas, TX, February.

2004
Dionex Corporation, Sunnyvale, CA. December.
Department of Electrical Engineering, Texas Tech University, November.
University of Washington, Seattle, WA. October.
Dean's Grand Round Lecture, Texas Tech University School of Medicine, September.
49th Annual Meeting, Society of Photo Optical Instrumentation Engineers, Denver, CO. August.
46th Rocky Mountain Conference on Analytical Chemistry, Keynote Lecture, Denver, CO. August.
United States Geological Survey. Denver, CO. August.
Mahidol University, Bangkok, Thailand. June.
Chiang Mai University, Chiang Mai, Thailand. June.
EMEP Workshop on Particulate Matter Measurement & Modeling, New Orleans, LA. April.
University of South Florida, Tampa, FL. April.
Pittsburgh Conference. Symposium on Field Instrumentation. Chicago, IL. March.
United States Environmental Protection Agency, Research Triangle Park, NC. March.
Lehigh University, Bethlehem, PA. January.

2003
University of Houston, Houston, TX. December.
Kansas State University, Manhattan, KS. December.
Telepresentation, Dow ASIA Global meeting, December.
American Geophysical Union 2003 Fall Meeting, San Francisco, CA. December.
Kansas State University, Manhattan, Kansas. December.
Department of Electrical Engineering, Texas Tech University, October.
Gunma University, Faculty of Engineering, Kiryu, Japan, October.
146th Meeting of the Iron and Steel Institute of Japan, Hokkaido University, Sapporo, Japan. Chemical Analysis for the 21st century. Inaugural Plenary Lecture, October.

Dionex Corporation, Sunnyvale, CA. September.
American Chemical Society, 226th National Meeting, New York City, NY. September.
Texas Council of Environmental Quality, August.
University of Miami, Miami, FL, May.
University of Tennessee at Knoxville, TN, March.
Royal Australian Chemical Institute Lecture, Perth, Western Australia, Australia. February.
Royal Australian Chemical Institute Lecture, Darwin, Northern Territory, Australia. February.
Royal Australian Chemical Institute Lecture, Melbourne, Victoria, Australia. February.
International Conference on Flow Analysis IX, Geelong, Victoria, Australia. February.
Royal Australian Chemical Institute Lecture, Sydney, New South Wales, Australia. February.
University of Tasmania, Hobart, Tasmania, Australia. February.
Royal Australian Chemical Institute Lecture, Hobart, Tasmania, Australia. February.
University of South Florida, Tampa, FL. Bay Region Atmospheric Chemistry Experiment, February.

2002
Department of Physics, Texas Tech University, Lubbock, TX. November.
Honeywell, Inc. Minneapolis, MN. November.
University of Minnesota, Twin Cities, MN. November.
University of Maryland, College Park, MD. November.
Indian Regional Research Laboratory, Trivandrum, India. October.
Central Leather Research Institute, Chennai, India. October.
Jadavpur University, Calcutta, India. October.
Calcutta University, Calcutta, India. October.
Mahidol University, Bangkok, Thailand. September.
Chiang Mai University, Chiang Mai, Thailand. September.
Kumamoto University, Japan. September.
Okayama University, Okayama, Japan. September.
Tokushima University, Tokushima, Japan. September.
Trinity University, San Antonio, TX. April.
University of South Florida, Tampa, FL. February.

2001
BioWhittaker Inc., Walkersville, MD. December.
Centro de Energia Nuclear na Agricultura, Piracicaba, Brazil. September.
Universidade Estadual Paulista, Arraraquara, Brazil. September.
11th ENQA, Encontro Nacional de Quimica Analitica, Unicamp, Brazil, September.
International Ion Chromatography Symposium, Oakbrook, IL. September.
Baylor University, Waco, TX. August.
International Congress on Analytical Sciences, Tokyo, Japan. August.
Insung ChromaTech Symposium on Ion Chromatography, Seoul and Pusan, Korea, August
Texas Tech University Dasgupta Scholars Reunion. Tokyo Japan. August.
Pittsburgh Conference, New Orleans, LA. March.
William J. Probst Lectures, Southern Illinois University, Edwardsville, IL. February

2000

Pacifichem 2000, Honolulu, HI. December.
Louisiana State University, Baton Rouge, LA. December.
New Mexico State University, Las Cruces, NM. November.
Eastern Analytical Symposium, Atlantic City, NJ. November.
Texas A & M University, College Station, TX. August.
University of Stockholm, Sweden. August
8th Internatonal Conference on Flow Analysis, Warsaw, Poland. Plenary Lecture. June.
Dionex Corporation, Sunnyvale, CA. May.
Pittsburgh Conference, New Orleans, LA. March.

1999
University of Missouri, Rolla. December.
Center for Process Analytical Chemistry, Seattle, WA. November.
Conference of High School Science teachers of Texas, Lubbock, TX. October.
Department of Physics, Texas Tech University, Lubbock, TX. October.
Teleconference presentation, Dow ASIA Global meeting, October.
American Chemical Society Pacific Regional Conference, Ontario, CA. Keynote Lecture. October.
International Ion Chromatography Symposium, San Jose, CA. September.
Dow Chemical Company, Freeport, TX. August.
American Chemical Society National Meeting, New Orleans, LA. August.
Amarillo National Resource Center for Plutonium, July.
21st International Conference on Capillary Chromatography and Electrophoresis, Park City, UT, June.
Molecular Dynamics, Inc., Sunnyvale, CA. May.
Sandia Livermore National Laboratory Livermore, CA, May.
Dionex Corporation, Sunnyvale, CA. May.
American Chemical Society National Meeting, Anaheim, CA. March.
University of Central Florida, Orlando, FL. February.
International Forum on Process Analytical Chemistry, San Antonio, TX. January.

1998
Eastern Analytical Symposium. Benedetti-Pichler Award Lecture. Somerset, NJ. November.
University of Washington, Seattle, WA. November
Center for Process Analytical Chemistry, Seattle, WA. November.
Toyohashi University, Toyohashi, Japan. October.
Nippon Dionex, K.K. Osaka, Japan. October.
University of Delaware, Newark, DE. October.
University of New Hampshire, Durham, NH. October.
International Ion Chromatography Symposium, Osaka, Japan. Plenary Lecture. September.
University of Hiroshima, Higashi-Hiroshima, Japan. September
University of Hawaii, Manoa, HI. September.
University of Missouri, Rolla, MO. September.
Novus International, St. Louis, MO. September.
Air and Waste Management Association Annual Meeting, RTP, NC. September.
United States Environmental Protection Agency, AREAL, Research Triangle Park, NC. August.
14th Annual Waste Testing and Quality Assurance Symposium, Washington D. C., July.
Anatel Corp. Boulder, CO. May.
University of Denver, Denver, CO. May.
National Oceanic and Atmospheric Administration Aeronomy Laboratory, Boulder, CO. May.
Technology Vision 2020: National Science Foundation Workshop on Process Analytical Chemistry, New Orleans, LA. March.
International Conference on Arsenic, Dhaka, Bangladesh. February.

1997
Los Alamos National Laboratory, Los Alamos, NM. December.
Dionex Corporation, Sunnyvale, CA. October.
Pacific Conference on Chemistry and Spectroscopy, Los Angeles, CA. October.
New Mexico Institute of Mining and Technology, Soccoro, NM. October.
Transgenomic, Inc., Omaha, NB. October.
Dow Chemical Company, Freeport, TX. September.
International Ion Chromatography Symposium, Santa Clara, CA. September.
Univesity of Alberta, Edmonton, Canada, July.
Waste Testing and Quality Assurance Symposium (WTQA'97), Arlington, VA, July.
Symposium on Functional Structure and Analytical Chemistry, Tohoku University, Sendai, Japan. Plenary Lecture. May.
Kyushu University, Fukuoka, Japan. May.
Japan Society for Analytical Chemistry, Spring Annual Meeting, Fukuoka, Japan. Keynote Lecture, May.

Asianalysis IV, Fukuoka, Japan. Keynote Lecture. May.
Nineteenth International Symposium on Capillary Chromatography and Electrophoresis, Wintergreen, VA. May.
Center for Process Analytical Chemistry, University of Washington, Seattle, WA. May.
Pittsburgh Conference, Atlanta, GA. March.

1996
Rohm and Haas Corp., Spring House, PA. March
Delaware Valley Chromatography Forum, Philadelphia, PA. March.
International Symposium on Environmental Analytical Chemistry, Vienna, Austria, April.
Dow Chemical Company, Plaquemine, LA. April.
Colloquium on Particulate Air Pollution and Health, Park City, UT. May.
Dionex Corporation, Sunnyvale, CA. May.
Center for Process Analytical Chemistry, University of Washington, Seattle, WA. May.
Rocky Mountain Conference In Analytical Chemistry, Denver, CO. July.
United States Environmental Protection Agency, Research Triangle Park, NC. August.
International Ion Chromatography Symposium, Reading, UK. September.
Monsanto Co. St. Louis, MO. September.
Southern Illinois University, Carbondale, IL. September.
Center for Process Analytical Chemistry, University of Washington, Seattle, November.
Eastern Analytical Symposium, Somerset, NJ. November.

1995
University of Texas, Arlington, TX. December.
Dow Chemical Co., Freeport, TX. November.
Purdue University, West Lafayette, IN. November.
International Ion Chromatography Symposium. Dallas, TX. Plenary Lecture. October.
Federation of Analytical Chemistry and Spectroscopy Societies, Twenty-second Annual Meeting Cincinnati, OH. October.
National Center for Atmospheric Research, Boulder, CO. October.
Dionex Corporation, Sunnyvale, CA. May.
Seventeenth International Symposium on Capillary Chromatography and Electrophoresis, Wintergreen, VA. May.
'Water for Texas' Research Conference, Austin, TX. January

1994
Union Carbide Central Research and Development, Charleston, West Virginia. November.
Nippon Dionex Lecture Series: Automated Analysis of Trace Gas and Aerosol Composition. Tokyo, Osaka, Nagoya, Japan. October.
Sixth International Conference on Flow Analysis, Toledo Spain. Keynote Lecture. June.
Workshop on Marine Air Chemistry and Aerosol Physics, Monterrey, CA. May.
Canadian Society for Chemistry, Seventy-seventh Annual Conference. Winnipeg, Manitoba. Keynote Lecture. May.
Eastman Kodak Company. Rochester, NY. May
Northeast Regional Chromatography Conference. Rochester, NY. Keynote Lecture. May.
Dionex Corporation, Sunnyvale, CA. March.
University of Arkansas, Fayetville, AR. February.

1993
University of Umea, Umea, Sweden. November.
University of Lund, Lund, Sweden. November.
Technical University of Denmark, Lyngby, Denmark. October.
Dow Chemical Company, Midland, MI. October.
Federation of Analytical Chemistry and Spectroscopy Societies, Twentieth Annual Meeting. Detroit, MI. October.
Eastman Chemicals, Interplant Conference, Kingsport, TN. Keynote Lecture. September.
International Ion Chromatography Symposium, Baltimore, MD. September.
Gordon Research Conference in Analytical Chemistry, New Hampshire. August.
Council for Chemical Research, Niche Conference, Keystone, CO. May.
Dionex Corporation, Sunnyvale, CA. February.

1992
Westhollow Research Center, Shell Development Company, Houston, TX. November.
Technical University of Vienna, Vienna, Austria. September.
International Ion Chromatography Symposium, Linz, Austria. September.
Institute for Analytical Chemistry, National Academy of Sciences, Brno, Czechoslovakia. September.
Fourth International Conference on Chromatography and Environmental Analysis, Lublin, Poland. September.
Dow Chemical Company, Midland, MI. July.
Iowa State University, Ames, IA. Graduate Students Association Perspectives in Chemistry Lecture. April.
Symposium on Ion Chromatography, Osaka, Japan. Plenary lecture, March.
Symposium on Ion Chromatography, Tokyo, Japan. Plenary lecture, March.
KOEX Symposium on Ion Chromatography, Seoul, Korea. Plenary Lecture. March.
Korea Institute of Science and Technology, Seoul, Korea. March.
Brigham Young University, Provo, UT. February.
Winter Conference on Flow Injection Analysis, Phoenix, AZ. January.

1991
US Environmental Protection Agency, Research Triangle Park, NC. December.
International Ion Chromatography Symposium, Denver, Co. Plenary Lecture. October.
Dow Chemical Company, Midland, MI. August.
American Chemical Society National Meeting, Atlanta, GA. April.
University of California, Davis, CA. February.

1990
W. R. Grace Co., Columbia, MD. October.
International Ion Chromatography Symposium, San Diego, CA. October.
Department of Physics, Texas Tech University, Lubbock, TX. September.
National Environmental Research Institute. Copenhagen, Denmark. June.
Analysdagarna, Lund, Sweden. Plenary lecture. June.
American Chemical Society National Meeting, Boston, MA. April.
Dow Chemical Company, Freeport, TX. April.
National Institute of Standards and Technology, Gaithersburg, MD. April.
Texas Tech University (Earth Day Lecture). April.
Department of Chemical Engineering, Texas Tech University. March.
University of Michigan, Ann Arbor, MI. March.
Dow Chemical Company, Midland, MI. March.
International Process Analytical Chemistry Forum, Houston, TX. January.

1989
New Mexico State University, Las Cruces, NM. November.
EG & G Chandler Engineering Division. Tulsa, OK. October.
International Ion Chromatography Forum, Boston, MA September
University of Stockholm, Sweden. September.
Royal Institute of Technology, Sweden. September.
12th Nordic Atomic Spectroscopy and Trace Element Conference, Stenungsund, Sweden. Plenary Lecture. September.
Technical University of Denmark, Denmark. August.
Technical University of Vienna, Austria. August.
University of Bern, Physics Institute, Switzerland. August.
Netherlands Energy Research Foundation, Netherlands. August.
University of Twente, Netherlands. August.
University of Umeå, Sweden. September.
Ohio Valley Chromatography Symposium, Hueston Woods, OH. Keynote lecture. June.
Inhalation Toxicology Research Institute, Albuquerque, NM. May.
Michigan State University, E. Lansing, MI. May.
Dow Chemical Company, Midland, MI. April.

Phillips Petroleum Company, Bartlesville, OK. April.
Shell Development Company, Houston, TX. March.

1988
Texas A & M University, December.
Federation of Analytical Chemistry and Spectroscopy Societies, Fifteenth Annual Meeting, Boston, MA. November.
Oklahoma State University, Stillwater, OK. October.
First International Ion Chromatography Forum, Boston, MA September.
Dionex Corporation, Sunnyvale, CA. August.
National Center for Atmospheric Research, Boulder, CO. August.
Dow Chemical Company, Midland, MI. June.
University of Texas, San Antonio, TX. April.
Arizona Instruments, Phoenix, AZ. March.
Baylor University, Waco, TX. February.
Vishva-Bharati University, Santiniketan, India. January.
India Association for the Cultivation of Sciences, Calcutta, India. January.
Jadavpur University, Calcutta, India. January.

Kevin D. Dayaratna, Ph.D.

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214 Massachusetts Ave, NE, Washington DC 20002
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Work Address
The Heritage Foundation
Center for Data Analysis
214 Massachusetts Ave, NE
Washington DC 20002
202-608-1540
Email: kevin.dayaratna@heritage.org

Home Address
[redacted]
Email: [redacted]

Education:

University of Maryland, College Park
Ph.D. in Mathematical Statistics (2014)

- Dissertation title: "Contributions to Bayesian Statistical Modeling in Public Policy Research"
- Adviser: Professor Benjamin Kedem
- Specialty in Bayesian modeling, statistical computing, and economic modeling
- Passed doctoral qualifying exams in Mathematical Statistics, Applied Statistics, and Probability Theory

University of Maryland, College Park
M.A. in Mathematical Statistics (2011)

- Specialty in statistical modeling of real-world phenomena including economics, business, medical outcomes, and professional sports

University of Maryland, College Park
M.S. in Business and Management (2008)

- Specialty in statistical modeling in business and economics
- Winner, Dean's Summer Fellowship

University of California, Berkeley
B.A. in Applied Mathematics (2005)

- Specialty in mathematical physics
- Significant coursework in Political Science

Experience:

The Heritage Foundation, Washington D.C.

- Senior Statistician and Research Programmer, Center for Data Analysis (June 2014-Present)
- Research Programmer and Policy Analyst, Center for Data Analysis (January 2013-June 2014)
- Research Associate, Center for Data Analysis (September 2012-December 2012)

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- Graduate Fellow in Health Policy, Center for Health Policy Studies (May 2012-August 2012)
- Intern, Center for Health Policy Studies (January-May 2012)

The Heartland Institute, Arlington Heights, Illinois
- Policy Adviser (2017-present)

Charles Koch Institute, Arlington, VA
- Adjunct Faculty (2016-present)

The George Washington University, Washington D.C.
- Adjunct Professor of Mathematics and Data Science (2016-present)
- Adjunct Professor of Mathematics (2015-2016)

University of Maryland, College Park, MD
- Lecturer, Department of Economics (2011-2016)
- Teaching Assistant, Department of Mathematics (2009-2011)

Programming Skills:

Highly Proficient in Matlab, R, OpenBUGS, Python, Mathematica, Excel VBA, C++, and Intel Visual Fortran

Selected Publications:

"Addressing the Physician Shortage by Taking Advantage of an Untapped Medical Resource" (with John O'Shea) Heritage Foundation Backgrounder, May 31, 2017
http://www.heritage.org/public-health/report/addressing-the-physician-shortage-taking-advantage-untapped-medical-resource

"Empirically Constrained Climate Sensitivity and The Social Cost of Carbon" (with Ross McKitrick and David Kreutzer) *Climate Change Economics*, (2017) 8 (2), 1-12.

"Rolling the DICE on Environmental Regulations (with Nick Loris) Heritage Foundation Backgrounder, February 10, 2017
http://www.heritage.org/energy-economics/report/rolling-the-dice-environmental-regulations-close-look-the-social-cost

"Time to Unlock America's Vast Oil and Gas Resources" (with Nick Loris and David W. Kreutzer) Heritage Foundation Backgrounder, September 1, 2016
http://www.heritage.org/environment/report/time-unlock-americas-vast-oil-and-gas-resources

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"Bayesian Semiparametric Density Ratio Modelling with Applications to Medical Malpractice Reform." (with Benjamin Kedem) *Statistical Modelling* (2016) 16(4), 261-278.

"The State of Climate Science: No Justification for Extreme Policies" (with David W. Kreutzer, Nicolas Loris, Katie Tubb) Heritage Foundation Backgrounder, April 22, 2016 http://www.heritage.org/environment/report/the-state-climate-science-no-justification-extreme-policies

"Consequences of Paris Protocol: Devastating Economic Costs, Essentially Zero Environmental Benefits" (with Nicolas Loris and David W. Kreutzer) Heritage Foundation Backgrounder, April 13, 2016. http://www.heritage.org/environment/report/consequences-paris-protocol-devastating-economic-costs-essentially-zero

"How Government Unions Affect State and Local Finances: An Empirical 50-State Review." (with Geoffrey Lawrence, James Sherk, and Cameron Belt) Heritage Foundation Special Report, April 11, 2016. http://www.heritage.org/jobs-and-labor/report/how-government-unions-affect-state-and-local-finances-empirical-50-state

"Maine Food Stamp Work Requirement Cuts Non-Parent Caseload by 80 Percent" (with Robert Rector and Rachel Sheffield). Heritage Foundation Backgrounder, February 8, 2016, http://www.heritage.org/welfare/report/maine-food-stamp-work-requirement-cuts-non-parent-caseload-80-percent

"A Probabilistic Examination of the Efficacy of Tort Reform via Semiparametric Density Ratio Modelling" Proceedings of the 30th International Workshop on Statistical Modelling. (2015) Volume 2. 75-78

"Time to End the Federal Subsidy for High Tax States" (with Rachel Greszler) Heritage Foundation Backgrounder, March 26, 2015. http://www.heritage.org/taxes/report/time-end-the-federal-subsidy-high-tax-states

"The Obama Administration's Climate Agenda Will Hit Manufacturing Hard: A State-by-State Analysis" (with Nick Loris and David Kreutzer) Heritage Foundation Backgrounder, February 17, 2015. http://www.heritage.org/environment/report/the-obama-administrations-climate-agenda-will-hit-manufacturing-hard-state-state

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"Multiple Regression Analysis: Understanding the Impact of Offensive and Defensive Contributions to Team Performance." (with Steven J. Miller) *The Hockey Research Journal: A Publication of the Society of International Hockey Research.* 2014/15. 41-43

"The Obama Administration's Climate Agenda Will Hit Manufacturing Hard: A State-by-State Analysis" (with Nick Loris and David Kreutzer) Heritage Foundation Backgrounder, November 13, 2014. http://www.heritage.org/environment/report/the-obama-administrations-climate-agenda-underestimated-costs-and-exaggerated

"Social Cost of Carbon Statistical Modeling is Smoke and Mirrors" (with David Kreutzer) *Natural Gas and Electricity.* July 2014. 7-11.

"Unfounded Fund: Yet Another EPA Model Not Ready for the Big Game" (with David Kreutzer) Heritage Foundation Backgrounder, May 16, 2014. http://www.heritage.org/environment/report/unfounded-fund-yet-another-epa-model-not-ready-the-big-game

"Linear Predictors of NHL Team Performance." (with Max Mulitz) *The Hockey Research Journal: A Publication of the Society of International Hockey Research.* 2013/14. 95-101

"Compelling Evidence Makes the Case for a Market-Driven Health Care System" (with Jim Capretta) Heritage Foundation Backgrounder, December 20, 2013. http://www.heritage.org/health-care-reform/report/compelling-evidence-makes-the-case-market-driven-health-care-system

"EPA Power Plant Regulations: A Backdoor Energy Tax" (with Nick Loris and David Kreutzer). Heritage Foundation Backgrounder, December 5, 2013. http://www.heritage.org/environment/report/epa-power-plant-regulations-backdoor-energy-tax

"Loaded DICE: An EPA Model Not Ready for the Big Game" (with David Kreutzer) Heritage Foundation Backgrounder, November 21, 2013. http://www.heritage.org/environment/report/loaded-dice-epa-model-not-ready-the-big-game

"Competitive Markets in Health Care: The Next Revolution" Heritage Foundation Backgrounder, August 19, 2013. http://www.heritage.org/health-care-reform/report/competitive-markets-health-care-the-next-revolution

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"Cost of a Climate Policy: The Economic Impact of Obama's Climate Action Plan" (with David Kreutzer and Nick Loris) Heritage Foundation Backgrounder, June 27, 2013. http://www.heritage.org/environment/report/cost-climate-policy-the-economic-impact-obamas-climate-action-plan

"Boxer–Sanders Carbon Tax: Economic Impact." Heritage Foundation Issue Brief, (with David Kreutzer) April 11, 2013. http://www.heritage.org/taxes/report/boxer-sanders-carbon-tax-economic-impact

"Studies Show: Medicaid Patients Have Worse Access and Outcomes than the Privately Insured." Heritage Foundation Backgrounder, November 7, 2012 http://www.heritage.org/health-care-reform/report/studies-show-medicaid-patients-have-worse-access-and-outcomes-the

"The Pythagorean Won Loss Formula and Hockey." (with Steven J. Miller) T*he Hockey Research Journal: A Publication of the Society of International Hockey Research.* 2012/13. 193-209.

"A Mathematical Reformulation of the Reference Price." (with P.K. Kannan) *Marketing Letters*. (2012) 23(3), 839-849

"First Order Approximations of the Pythagorean Won-Loss Formula for Predicting MLB Teams Winning Percentages." (with Steven J. Miller) *By the Numbers* of the *Society for American Baseball Research Statistical Committee*. May 2012

"Closed Form Bayesian Inferences for the Logit Model Via Polynomial Expansions." (with Steven J. Miller and Eric Bradlow) *Quantitative Marketing and Economics* (2006) 4(2), 173-206

Selected Work Under Review/in Progress:

"Closed Form Bayesian Inferences for Binary Logistic Regression" under review at *Political Analysis*

"Bayesian Inferences of Welfare Reform" preparing for Submission to *Annals of Applied Statistics*

"Bayesian Inferences of Counterterrorism Policy" under review at *Journal of the Royal Statistical Society*

Selected Blogs/Commentaries

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"A conundrum — an impending shortage of care and a surplus of talent" (with John O'Shea) July 3, 2017. http://www.washingtontimes.com/news/2017/jul/3/impending-shortage-of-doctors-and-a-surplus-of-tal/

"Solving the Physician Shortage Crisis" (with Sarina Singh) May 31, 2017. http://dailysignal.com/2017/05/31/solving-the-crisis-of-physician-shortages/

"The Flimsy Statistical Models Obama Administration Used to Justify Environmental Agenda" March 29, 2017. http://dailysignal.com/2017/03/29/the-flimsy-statistical-models-obama-administration-used-to-justify-environmental-agenda/

"Unlocking Our Immense Oil and Gas Supply Can Make America Great Again" (with Richard Sigman) The Daily Signal. March 27, 2017. http://dailysignal.com/2017/03/27/unlocking-our-immense-oil-and-gas-supply-can-make-america-great-again/

"EPA's Top Priority Should Be to Eliminate Bogus Global Warming Models" (with Nick Loris) The Daily Signal. January 8, 2017. http://dailysignal.com/2017/01/18/epas-top-priority-should-be-to-eliminate-bogus-global-warming-models/

"Another Useless EPA Regulation That'll Cost Americans More Money" (with David Kreutzer) The Daily Signal, December 13, 2015. http://dailysignal.com/2015/12/03/another-useless-epa-regulation-thatll-cost-americans-more-money/

"Building on Quicksand: The Social Cost of Carbon" (with David Kreutzer) The Daily Signal, February 12, 2014. http://dailysignal.com/2014/02/12/building-quicksand-social-cost-carbon/

"Heritage Contributes to the Reopening of the White House's Social Cost of Carbon Discussion" (with David Kreutzer) The Daily Signal. November 6, 2013. http://blog.heritage.org/2013/11/06/white-house-reopens-the-scc/

"Scrutinizing the Social Cost of Carbon: Comment to the Energy Department" (with David Kreutzer) The Daily Signal, September 16, 2013. http://blog.heritage.org/2013/09/16/scrutinizing-the-social-cost-of-carbon-comment-to-the-energy-department/

"Obama Climate Change Plan: War on Coal Would Hike Natural Gas Prices 42 Percent""(with David Kreutzer and Nick Loris) The Daily Signal, June 25, 2013. http://blog.heritage.org/2013/06/25/obama-climate-change-plan-war-on-coal-would-hike-natural-gas-prices-42-percent/

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"Obama's 'War on Coal' Hits American Families Hard" (with David Kreutzer and Nick Loris) The Daily Signal, June 24, 2013. http://blog.heritage.org/2013/06/24/obamas-war-on-coal-hits-american-families-hard/

"Medicare Reform Debate: What Really Works in Health Care Competition." The Daily Signal. September 13, 2012. http://blog.heritage.org/2012/09/13/medicare-reform-debate-what-really-works-in-health-care-competition/

"Side Effects: Obamacare Encourages Employers to Drop Coverage for Sick Workers." The Daily Signal, February 8, 2012. (with Kathryn Nix) http://blog.heritage.org/2012/02/08/obamacare-encourages-employers-to-drop-coverage-for-sick-workers/

Talks and Conference Presentations:

"Addressing the Physician Shortage by Use of an Untapped Medical Resource"
44th Annual American Legislative Exchange Council Meeting, Denver, CO. July 19, 2017

"Cost Benefit Analysis and The Social Cost of Carbon"
Heartland Institute's 12th International Conference on Climate Change, Washington DC. March 22, 2017

"The Smoke and Mirrors Behind Climate Modeling: Advice to Policymakers"
The Heritage Foundation, Washington DC. February 16, 2017

"Guidance for Federal Statistical Agencies in the Trump Administration," Council of Professional Associations on Federal Statistics, Washington DC. December 6, 2017

"Potential Energy: Taking Advantage of America's Great Oil and Gas Resources," The Heritage Foundation, Washington DC. October 25, 2016.

"Closed Form Bayesian Inference for Binary Logistic Regression via Polynomial Expansions" 4th Institute of Mathematical Statistics, Asia Pacific Rim Conference, Hong Kong. June 30, 2016.

"The Impact of Removing State and Local Deductions from the Federal Tax Code" Tax Economist Forum, Washington DC. July 1, 2015

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"A Probabilistic Examination of the Efficacy of Tort Reform" 30th International Workshop on Statistical Modelling. Linz, Austria. July 8, 2015

"Social Cost of Carbon: A Controversial Tool for Misguided Policy," The Heritage Foundation, Washington DC. June 23, 2015.

"The Social Cost of Carbon" Senate EPW, ENR and HSGAC Regulatory Affairs and Federal Management Subcommittee," United States House of Representatives. June 6, 2015

"Measuring the Social Cost of Carbon: The Promise and Pitfalls of Using the SCC to Justify Regulation" Air Quality Committee of the D.C. Bar Environment, Energy and Natural Resources Section, Washington DC. March 31, 2015.

Congressional Testimony:

"At What Cost? Examining the Social Cost of Carbon" House Committee on Science, Space, and Technology, United States House of Representatives. February 28, 2017

"An Analysis of the Obama Administration's Social Cost of Carbon," House Committee on Natural Resources, United States House of Representatives. July 23, 2015

"The Economic Impact of the Clean Power Plan" House Committee on Science, Space, and Technology, United States House of Representatives. June 24, 2015

Teaching:

Course	University
Bayesian Methods for Data Science	The George Washington University (Spring 2017)
Introduction to Data Mining	The George Washington University (Fall 2016)
Calculus I	The George Washington University (Fall 2015, Fall 2016, Spring 2017)
Calculus II	The George Washington University (Spring 2015, Spring 2016, Summer 2016, Summer 2017)
Calculus for Management and Social Sciences	The George Washington University (Summer 2015)
Economic Statistics	University of Maryland (Fall 2011, Summer 2012, Fall 2012, Summer 2013, Fall 2013)
Computer Methods in Economics	University of Maryland (Fall 2014, Fall

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	2015, Spring 2016)

Interests, Activities, Hobbies:

Former Theta Chi Fraternity member, Avid Tennis Player/Enthusiast

Citizenship:

[redacted]

CURRICULUM VITAE

Personal Data

Name: Ana Victoria Diez Roux

Nationality: [redacted]

Work address: Dean's Office
Drexel University
School of Public Health
3215 Market Street, Nesbitt Hall
2nd Floor, Room 255
Philadelphia, PA 19104

Academic Training

1985 M.D. University of Buenos Aires, Argentina

1989 Licensed in Pediatrics, Argentine Society of Pediatrics, Buenos Aires, Argentina

1991 M.P.H. The Johns Hopkins University, School of Hygiene and Public Health

1995 Ph.D. The Johns Hopkins University, School of Hygiene and Public Health, Department of Health Policy and Management

Traineeships

1986 – 1989 Resident in Pediatrics, Ricardo Gutierrez Children's Hospital, Buenos Aires, Argentina

1989 – 1990 Chief Resident in Pediatrics, Ricardo Gutierrez Children's Hospital, Buenos Aires, Argentina

1995 – 1996 Postdoctoral Fellow, The Johns Hopkins University, School of Hygiene and Public Health, Department of Epidemiology

Academic Appointments

1996 – 2002 Assistant Professor of Medicine, Department of Medicine, Columbia College of Physicians and Surgeons

1996 – 2002	Assistant Professor of Epidemiology, Joseph L. Mailman School of Public Health, Columbia University
2002 – 2003	Faculty Fellow, Institute for Social and Economic Research and Policy, Columbia University
2003 – 2006	Associate Professor of Epidemiology (with tenure), University of Michigan School of Public Health
2003 – 2008	Faculty Associate, Institute for Social Research, University of Michigan
2003 – 2008	Associate Director, Center for Social Epidemiology and Population Health, University of Michigan
2006 – Present	Professor of Epidemiology (with tenure), University of Michigan School of Public Health
2008 – Present	Research Professor, Institute for Social Research, University of Michigan
2009 – Present	Director, Center for Social Epidemiology and Population Health, University of Michigan
2009 – Present	Director, Robert Wood Johnson Health and Society Scholars Program, University of Michigan
2010	Visiting Scholar, Department of Epidemiology and Public Health, University College London
2011	Benjamin Meaker Visiting Professor, Institute for Advanced Studies, University of Bristol
2012 – 2014	Chair, Department of Epidemiology, School of Public Health University of Michigan
2014 – Present	Dean and Distinguished Professor, Epidemiology, Drexel University School of Public Health

Honors

1990 – 1991	Columbus Foundation Stelson Fellow, School of Hygiene and Public Health. The Johns Hopkins University
1991	Delta Omega Honorary Public Health Society
1993	International Friends of Public Health Scholarship

1994	Delta Omega Research Scholarship for Dissertation Research
1996	Phi Beta Kappa Honorary Society
2003 – 2009	Member, MacArthur Network on Socioeconomic Status and Health
2008	Wade Hampton Frost Lecture Award for major contributions to public health, American Public Health Association
2010	Excellence in Research Award, University of Michigan School of Public Health
2010	Elected Member, Institute of Medicine, National Academy of Sciences
2011	Rankin Lectureship Award, Department of Population Health, University of Wisconsin
2012	Delta Omega Lecture, Arnold School of Public Health, University of South Carolina
2012	Elected Member, Academy of Behavioral Medicine Research
2013	Multi-Ethnic Study of Atherosclerosis (MESA) Investigator Award

Professional Organizations and Societies

1997 – Present	Member, Society for Epidemiologic Research
1997 – Present	Member, American Public Health Association. Representative to the Governing Council for the Epidemiology Section 1999-2000
2013	Member, American Epidemiological Society

Departmental and University Committees

1996 – 1998	Admissions Committee, Masters Program, Department of Epidemiology, Mailman School of Public Health
1998 – 2002	Curriculum Committee, Department of Epidemiology, Mailman School of Public Health
2000 – 2002	Diversity Committee, Department of Epidemiology, Mailman School of Public Health
2003 – 2004	Curriculum Committee. Department of Epidemiology. University of Michigan School of Public Health

2003 – 2004	Faculty Search Committee, Chronic Disease Epidemiology. Department of Epidemiology. University of Michigan School of Public Health
2004 – 2005	Admissions Committee, Department of Epidemiology. University of Michigan School of Public Health
2004 – 2005	Faculty Search Committee, Social Epidemiology. University of Michigan School of Public Health
2004-2005	Chair, Faculty Search Committee. Methods in Epidemiology. University of Michigan School of Public Health
2005 – 2006	Doctoral Committee, Department of Epidemiology, University of Michigan School of Public Health
2006 – 2007	Chair, Diversity Committee, University of Michigan School of Public Health
2006 – 2009	Chair, Doctoral Committee, Department of Epidemiology, University of Michigan School of Public Health
2009 – 2010	Chair, Social Epidemiology Search Committee, Department of Epidemiology, University of Michigan School of Public Health

Teaching Experience[1]

Courses

1992 – 1996	Instructor. Introduction to Epidemiology and Epidemiologic Methods (Intermediate Epidemiology). Department of Epidemiology, Johns Hopkins University School of Hygiene and Public Health
1994 – 1997	Instructor. Epidemiologic Methods. The Graduate Summer Program in Epidemiology. Department of Epidemiology. The Johns Hopkins University School of Hygiene and Public Health
1997 – 2002	Lecturer. Introduction to Epidemiology. Joseph L. Mailman School of Public Health, Columbia University
1997 – 2002	Cardiovascular Disease Epidemiology. Division of Epidemiology. Joseph L. Mailman School of Public Health, Columbia University
1998 – 2002	Lecturer. Epidemiologic Methods. Clinical Practice Course (Medical Students). Columbia College of Physicians and Surgeons

1Main faculty responsible for course unless otherwise noted.

1998 – 2002	Lecturer. Advanced Topics in Epidemiologic Methods: Multilevel Analysis. Joseph L. Mailman School of Public Health, Columbia University
2002	Co-Instructor. Social Epidemiology. The Graduate Summer Program in Epidemiology, Johns Hopkins University
2003	Co-Instructor. Critical Appraisal of Epidemiologic Studies. University of Michigan, Department of Epidemiology
2003 – 2006	Strategies and Uses of Epidemiology. University of Michigan, Department of Epidemiology
2003 – Present	Advanced Topics in Epidemiologic Analysis. University of Michigan, Department of Epidemiology
2007– Present	Multilevel Studies and Multilevel Analysis in Public Health. University of Michigan, Department of Epidemiology
2011	Social Epidemiology. University of Michigan, Department of Epidemiology
2012	Introduction to Epidemiology, University of Michigan, Department of Epidemiology

Short Courses and Workshops

1998 – Present	Basic and Intermediate Epidemiology. Masters of Public Health Program. National University of Lanús, Buenos Aires, Argentina
1999	Multilevel analysis: fundamentals and applications in public health. Instititute Universitari de Salut Publica de Catalunya/ Johns Hopkins University. Barcelona, Spain
2000	Co-Instructor Social Epidemiology. Summer Program in Epidemiology. Johns Hopkins University School of Public Health, June 2000.
2000	Multilevel analysis: fundamentals and applications in public health. Spanish Society for Epidemiologic Research. Madrid, Spain
2002	Multilevel analysis in public health. Agency for Primary Health Care Research, Bilbao, Spain
2003	Workshop "Multilevel Analysis: Concepts and Applications in Public Health". American College of Epidemiology, Albuquerque, NM.
2003	Multilevel analysis. University of Lanus, Buenos Aires, Argentina

2003	Fundamentals and applications of multilevel analysis in epidemiology. Mexican Public Health Institute, Cuernavaca Mexico
2003	Multilevel analysis in health research. Workshop on Geographic Information Systems in Health research. Academy Health, Nashville, Tennessee June 2003
2003	Multilevel analysis: applications in social epidemiology. Workshop.Centers for Disease Control. Atlanta, Georgia. June 10-11 2003
2004	Workshop. Introduction to multilevel analysis in public health.Columbia University. Robert Wood Johnson Health and Society Scholars. March 25-26 2004.
2005	Workshop. Introduction to multilevel analysis in public health. Columbia University. Robert Wood Johnson Health and Society Scholars. April 6-7 2006.
2009	Introduction to multilevel analysis in public health. Facultad Nacional de Salud Pública, Universidad de Antioquia. Medellín, Colombia January 2009
2010	Social Epidemiology. Summer Program in Epidemiology. Johns Hopkins University School of Public Health, June 2010.
2009 – 2013	An introduction to social epidemiology (one day course). New York City Health Department
2011	Instructor. 37th Ten day seminar on the epidemiology and prevention of cardiovascular disease, American Heart Association, Tahoe City, CA
2012	Fundamentals of multilevel analysis. University of Michigan Summer Program in Epidemiology

Training and Mentoring

Predoctoral Trainees

2001 – 2006	Sandra Echeverria (Ph.D., 2006 from Columbia University), Research Project: Contextual effects on health behaviors
2003 – 2007	Amy H. Auchincloss (B.S., 1997 from Columbia University; M.P.H., 2006 and Ph.D., 2008 from University of Michigan), Research Project: Neighborhoods and diabetes.

2003 – 2007	Mahasin S. Mujahid (B.S., 2000 from Xavier University, New Orleans, LA; M.S., 2003 and Ph.D., 2007 from University of Michigan), Research Project: Neighborhood Characteristics and Hypertension
2003 – 2007	Latetia V. Moore (B.S., 1998 from FI Southern College; M.P.H., 2002 from University of South Florida), Research Project: The Neighborhood Food Environment and Diet
2005 – 2008	Christina F. Mair (M.P.H., 2005 from University of Washington; Ph.D., 2008 from University of Michigan), Research Project: The Associations of Neighborhood Social and Physical Characteristics with Mental Health
2005 – 2008	Emily T. Lemelin (B.A., 2000 from University of Florida; M.S., 2002 from Michigan State University), Research Project: Neighborhood Poverty and CVD Outcomes over the Lifecourse
2005 – 2009	Zanetta C. Gant (M.P.H., 2005 and Ph.D., 2009 from University of Michigan), Research Project: Social Environment Factors and Their Effects on Risky Sexual Behaviors
2006 – 2010	Melissa J. Smiley (B.A., 1999 from Bryn Mawr College; M.P.H., 2006 from University of Michigan), Research Project: The built environment and health behaviors
2006 – 2010	Nancy L. Fleischer (M.P.H., 2006 from University of California; Ph.D., 2010 from University of Michigan), Research Project: Social patterning of chronic disease risk factors in Argentina
2007 – 2010	Kiarri N. Kershaw (B.S., 2001 from Carnegie Mellon University; M.S., 2004, M.P.H., 2007, and Ph.D., 2010 from University of Michigan), Research Project: Regional and lifecourse effects on hypertension among Blacks
2007 – 2012	Sandra S. Albrecht (M.P.H., 2004 from Columbia University), Research Project: Immigration, acculturation and cardiovascular risk
2009 – Present	Erin B. Ware (B.S., 2006 from Northern Michigan University; M.P.H., 2008 from University of Michigan), Research Project: Gene X Social Environment Interactions and Depressive Symptom Scores
2009 – Present	Felice Le (B.A., 2001 from Brown University; M.P.H., 2009 from University of California, Berkeley), Research Project: Bidirectional associations between health and education
2009 – Present	Yamini Kesavan (B.S., 2001 from University of Michigan; M.S., 2008 from Harvard University), Research Project: Longitudinal analyses of

neighborhood characteristics and cardiovascular risk

2009 – Present Dayna A. Johnson (B.A., 2004 from Purdue University; M.P.H., 2007 from University of Michigan), Research Project: The contribution of sleep to health disparities.

2010 Gabriela Zunino (MS, 2008 from National University of Lanus), Research Project: Multilevel determinants of violence in Argentina

2010 – Present Jana A. Hirsch (B.A., 2010 from University of Pennsylvania), Research Project: The Impact of the Built Environment on Walking in Middle Age and Older Adults

2011 – Present Paulina Kaiser (B.A., 2006 from Northwestern University; M.P.H., 2010 from University of Michigan), Research Project: Epidemiologic methods to understand contextual and spatial influences on health

2011 – Present Paul Christine (B.A., 2008 from Colorado State University; M.P.H., 2011 from University of Iowa), Research Project: TBD

2012 Delores Hofelmann (Visiting Scholar, M.S., 2006 from Federal University of Santa Catarina, Brazil), Research Project: Neighborhood environments and health in Florianopolis, Brazil: a multilevel study

2012 Ana Clara Duran (Visiting Scholar; B.S., M.S., 2009 from Faculdade de Saude Publica Universidade de Sao Paulo), Research Project: Assessment and investigation of the local food environment in Sao Paulo, Brazil.

2012 – Present Amanda J. Richardson (B.A., 2010 and M.P.H., 2012 from Tufts University), Research Project: TBD

2012 – Present Nicole L. Novak (B.A., 2008 from St. Olaf College; O.T.H., 2010 from Oxford University), Research Project: TBD

2012 – Present Kristen M. Brown (B.S., 2010 from Rutgers University), Research Project: TBD

Dissertation Committee Member for >20 additional PhD candidates throughout the University of Michigan.

Postdoctoral Trainees

2003-2005, Sarah A. Burgard; 2003-2005, Allison E. Aiello; 2004-2006, Marie O'Neill; 2005-2007, Sacoby Wilson; 2005-2007 Theresa L. Osypuk; 2005-2007, Craig A. Hadley; 2006-2008 Phoenix Do; 2006-2008, Magdalena Cerda; 2006-2008, Amy H. Auchincloss; 2007-2009, Aydin Nazmi; 2007 – 2009, Briana Mezuk; 2007 – 2009, Malo Hutson; 2007 – 2009, Shawn D.

Boykin; 2007 – 2010, Richard Pilsner; 2007 – 2012, Yong Yang; 2008, Christina F. Mair; 2008 – 2010, Christopher J. Wildeman; 2008 – 2010, Whitney R. Robinson; 2008 – 2010, Cleopatra M. Abdou; 2009 – 2011, Kristin E. Turney; 2009 – 2011, Neil K. Mehta; 2010 – 2012, Julianna L. Pacheco; 2009 –11,Malavika A. Subramanyam; 2009-11, Amy DeSantis; 2010, Monal R. Shroff; 2010 – 12, Aaron P. Mauck; 2010 – Present, Margaret T. Hicken; 2010 – 11, Anjum Hajat; 2011 – Present, Natalie D. Crawford; 2011 – Present, Corina Graif; 2012 – Present, Laura R. Wherry; 2012 – Present, Samson Gebreab; 2012 – Present, Audrey Dorelien; 2012 – Present, Allison Brenner

Junior faculty mentees: Allison Aiello, Marie O'Neill, Ana Baylin, Demarc Hickson, Mario Sims (K award), KT Tomey (K award), Martha Garza (K award), Shakira Suglia (K award), Belinda Needham.

Editorial Activities

1997-present	Associate Editor, American Journal of Epidemiology
2007 - 2010	Editorial Board, Health and Place
2008-present	Associate Editor, Journal of Epidemiology and Community Health
2008 – 2009	Editor, Encyclopedia of Environmental Health, Elsevier Ltd.
2009-present	Editorial Board, Revista de Saúde Pública, Universidade de Sao Paulo, Brazil
2010-present	Editorial Board, Annual Review of Public Health
2012-present	Editorial Board, Preventing Chronic Diseases

Reviewer NEJM, JAMA, Lancet, BMJ, Circulation, Epidemiology, Int J Epidemiol Am J Prev Med, Soc Sci Med, Epidemiology among others. Abstract reviewer Society for Epidemiologic Research and American Heart Association.

Scientific Committees and Review Panels

1999	Working Group on Early Life Influences on Health. National Heart, Lung and Blood Institute.National Institutes of Health. September, 1999
2000 – 2004	Working Group on Macrosocial Determinants of Morbidity and Mortality, Program on Social Variations in Health Expectancy in Europe, The EuropeanScience Foundation
2000 – 2003	Chair, Psychosocial Working Group, the Multiethnic Study of Atherosclerosis

2001	Ad-hoc grant review panels American Heart Association and National Heart, lung, and Blood Institute
2001 – 2003	Advisory Committee, Kellogg Minority Health Disparities Scholars program
2002	Ad-hoc member. Social Environment Working Group. National Children's Study. National Institute of Child Health and Human Development
2002	Community Measures Workshop, OBSSR, National Institute of Health
2003	Advisory Review panel to NHLBI for The Jackson Heart Study.
2003	National Institute on Aging (NIA) Whitehall in Washington Planning Committee
2003 – 2009	Ad-hoc Grant Reviewer Medical Research Council (UK), NICHD (National Institutes of Health), NIH/Fogarty Foundation, and KNOD Study Section
2005	Member Expert Panel on the Primary Prevention of Type II Diabetes, Centers for Disease Control and Prevention
2006	Member, Level 1 Working Group. Translation, Implementation, and Community Research, National Heart Lung and Blood Institute Strategic Planning Process
2006	Member, GAIN (Genetic Association Identification Network) Technical Advisory Group, Foundation for the National Institutes of Health
2006	Special Emphasis Panel ZRG1 HOP B 40 and Adhoc reviewer Kidney, Nutrition, Obesity and Diabetes Study Section
2007 – 2009	Chartered Member, Kidney, Nutrition, Obesity and Diabetes (KNOD) Study Section, National Institute of Health
2007	Blue Cross and Blue Shield Foundation of Minnesota National Advisory Panel on the Social Determinants of Health
2008 – 2012	Federal Advisory Panel, National Children's Study, National Institutes of Health
2009	Member, IOM Planning Committee for Food Deserts Workshop
2009	Member IOM Panel on Public Health Practices to Reduce and Control Hypertension

2009-2012	Scientific Directions Committee, Jackson heart Study, National heart Lung and Blood Institute
2009	Expert Panel, The Food Trust, Philadelphia, PA
2009 – 2010	Scientific Advisory Panel, Research Program on Genes, Environment and Health, Kaiser Permanente, Oakland, CA.
2009 – 2010	National Advisory Committee, Salud América, Robert Wood Johnson Foundation Research Network to Prevent Obesity Among Latino Children
2009 – 2011	Chair, Kidney, Nutrition, Obesity and Diabetes Study Section (KNOD), National Institutes of Health
2009 – 2010	Member, National Academy of Sciences Committee on Health Impact Assessment
2011	Steering Committee Member, National Academies Keck Futures Initiative on Ecosystem Services
2011 – 2012	Member, National Academy of Sciences and Institute of Medicine Committee on Understanding International Health Differences in High-Income Countries
2011-2013	Member, National Health and Aging Trends Study (NHATS) Data Monitoring Board
2011	Co-Chair. Workshop on reducing health disparities: the role of sleep deficiency and sleep disorders. National Heart Lung and Blood Institute
2011	Member. Population Health Consortium Working Group, Office of Behavioral and Social Science Research (OBSSR), National Institutes of Health
2010-present	Member, Network on Inequality, Complexity and Health (NICH), Office of Behavioral and Social Science Research (OBSSR), National Institutes of Health
2011-present	Chair, Coronary Artery Risk Development in Young Adults (CARDIA) Psychosocial Committee
2011-present	Chartered Member, Clean Air Scientific Advisory Committee (CASAC) Environmental Protection Agency
2012	Member, External Scientific Review Panel, Experienced Based Brain and Biological Development (EBBD) Program of the The Canadian Institute for

Advanced Research (CIFAR)

2012-present Member, Scientific Committee on Health and Wellbeing in the Changing Urban Environment: a Systems Analysis Approach, International Council for Science (ICSU)

2013 Board of Scientific Counselors, National Center for Health Statistics. Centers for Disease Control and Prevention

Invited Lectures and Keynotes

1. The use of multilevel models in epidemiology. Cancer Prevention and Control Colloquium. National Cancer Institute, National Institutes of Health. October, 1997

2. Multilevel Analysis in Epidemiology. Universitat Pompeu Fabra, Barcelona, Spain. April, 1998

3. Issues in multilevel analysis. Center for Society and Health. Department of Health and Social Behavior, Harvard School of Public Health. May, 1998

4. Socioeconomic factors and atherosclerosis in the Atherosclerosis Risk in Communities (ARIC) Study. Workshop on socioeconomic factors and cardiovascular disease. Bremen Institute for Prevention. Bremen, Germany. May, 1998

5. Beyond individuals: issues in multilevel analysis. Society for Epidemiologic Research 31st Annual Meeting. Chicago, IL. June, 1998

6. Emerging approaches in epidemiology. Department of Community and Preventive Medicine. Mt. Sinai School of Medicine. New York City. May, 1999

7. Social Causation in Epidemiology. Society for Epidemiologic Research, 32nd Annual Meeting, Baltimore, MD. June, 1999

8. Neighborhood environments and health. MacArthur Network on Socioeconomic Factors and Health. Berkeley, CA. November, 1999

9. Methodological issues in the examination of neighborhood effects. Neighborhoods and Health Symposium, Harvard School of Public Health, June, 2000

10. Marcelino Pascua Conference Speaker. Spanish Society for Epidemiologic Research, Madrid, Spain. October, 2000

11. Keynote speaker. New Mexico Public Health Association. Taos, NM. April, 2001.

12. Seminar on Epistemology and Methods of Multilevel Analysis in the Human Sciences. National Institute of Demography (INED), Paris France, March, 2001

13. Investigating multi-level determinants of health and development. Symposium: Social Epidemiology at the Cross-Roads. Society for Epidemiologic Research, Toronto, Canada. June, 2001.

14. Residential environments and cardiovascular risk. Conference on the Built Environment and Health. New York Academy of Medicine, March 22-25 , 2002

15. The social determinants of health. Population Health Symposium. Society for Epidemiologic Research, Atlanta, Georgia. June, 2003.

16. Neighborhoods and Health: evidence and challenges Invited Lecture. University College London, February, 2004.

17. People and places: methodological issues in the investigation of neighborhood effects. Health Disparities Symposium. University of Washington. April 2004.

18. Social factors in epidemiology: concepts and methods. Department of Epidemiology. Johns Hopkins University. July 2004.

19. Evidence and challenges in the investigation of neighborhood effects. Michigan State University. October 2004.

20. Neighborhood health effects: evidence and challenges. University of South Carolina, March 2005

21. Social factors in epidemiology: conceptualization and measurement. Institute of Medicine Committee on Assessing Interactions among social, behavioral, and genetic factors in health. June, 2005.

22. Social inequalities in health. VI National Congress on Health and Population. Faculty of Social Sciences. University of Buenos Aires, July 2005

23. Exposure to ambient particulate matter and subclinical atherosclerosis. EPA Research Meeting on Mechanisms and Health Risks of Exposure to Ambient Particulate matter, Research Triangle Park, NC April 18-19 2006.

24. Places and cardiovascular risk: evidence and challenges. Center for Environmental Health & Susceptibility (CEHS), University of North Carolina at Chapel Hill, April 20, 2006

25. Neighborhoods and health in the elderly. Invited Discussant. Annual Meeting of the Geriatric Society of America. November 22 2005

26. The built environment and health. Invited Discussant. Michigan Epidemiology Conference. Michigan Public Health Association. April 2006

27. Neighborhoods and cardiovascular risk: evidence and challenges. Key note speaker. Annual Meeting of the Associations of French-Speaking Epidemiologists. May 18-19 2006. Toulouse, France

28. Integrating social and biological factors in health research: a systems view. Symposium speaker. Annual meeting of the Society for Epidemiologic Research, Seattle, June 2006

29. Investigating neighborhoods and health: evidence and challenges. Key note speaker. Australasian Epidemiology Association Annual meeting. Melbourne, Australia. September 2006.

30. Neighborhoods and health: where are we and where do we go from here? Invited Speaker, RAND Corporation. Los Angeles, October 2006

31. Studying the multilevel predictors of health behaviors: theoretical and methodologic challenges. Invited Speaker. 6th Annual Scientific Meeting of the American Academy of Health Behavior. Savannah, GA March 2007

32. Reflecting on researchon neighborhood health effects. Columbia University Robert Wood Johnson Health and Society Scholar's Program, March 2007.

33. Neighborhoods and health: opportunities and challenges for epidemiology. Annual Lecture in Social Epidemiology. Johns Hopkins School of Hygiene and Public Health. April 2007

34. Social epidemiologic perspectives on depression. Invited speaker. Depression Center, University of Michigan, April 2007.

35. Neighborhoods and health in epidemiology. University of Chicago, May 2007

36. Symposium speaker: "Systems approaches in epidemiology: opportunities and challenges". 25th annual meeting American College of Epidemiology, Fort Lauderdale , FL Sept 16-18

37. Symposium on “Unnatural Causes”. Invited Speaker. National Association of Health Services Executives (NAHSE), Detroit Chapter. February 2008.

38. Health, Place and Equity. Symposium Speaker. Third National Summit on Equitable Development, Social Justice, and Smart Growth. New Orleans, Louisiana, March 2008.

39. Study Designs and Analytic Strategies for Environment and Policy Research on Obesity, Physical Activity, and Diet. Invited Discussant. Active Living Research Conference April 2008.

40. Places and health: evidence and challenges. Office of Population Research, Princeton

University, April 2008

41. Neighborhoods and health. Seoul National University, Seoul, South Korea, May 2008

42. Epidemiology and spatial inequalities in health. IVth Congress of the Spanish Societies of Epidemiology and Biostatistics, June 2008

43. Urban Health: the Role of Inequalities and Place. World Congress of Epidemiology. Porto Alegre, Brazil. September, 2008.

44. Health in cities: the role of place.Universidade Federal de Minas Gerais, Belo Horizonte, Brasil. September, 2008

45. Place-based inequalities: evidence and new directions. Invited speaker. Congres National des Observatoires Regionaux de la Santé. Marseille, France, October 2008

46. Symposium Speaker. Is biology destiny: the interaction of biological, behavioral, and social determinants of health. Institute of Medicine 38th Annual Meeting. Washington DC, October 2008

47. Division of Public Health Sciences Distinguished Speaker. Wake Forest University, Winston Salem, NC. December 2008

48. Symposium Speaker. IOM Workshop on Health Impact of Food Deserts. January, 2009

49. The contribution of neighborhood factors to health disparities. Prevention Colloquium. Washington University in St Louis University. March 2009.

50. Symposium Speaker. IOM Panel on Evidence for the Prevention of Obesity. Multi-level approaches to understanding and preventing obesity: analytical challenges and new directions, March 2009

51. Visiting Professor in Minority Health, Northwestern University, Systems thinking in population health/ The contribution of neighborhood environments to health disparities. April 2009

52. Invited Discussant. Capturing context: a conference on bridging spatial and social network analysis. Columbia University, June 2009.

53. Keynote Speaker: Beyond individuals: why neighborhoods matter for health. Blue Cross Blue Shield Foundation of Minnesota. 4th Annual Upstream Health Policy Recognition and Policy Program, October 2009

54. Keynote Speaker. Integrating social and biological factors in health research: pushing the frontier in the study of gene-environment interactions. Congress of the German Society of Behavioral Medicine and Behavior Modification. Leipzig, Germany. October 2009

55. Why neighborhoods matter for cardiovascular health and health disparities, Morehouse School of Medicine March 2010

56. Community-level factors and health. Robert Wood Johnson/Federal Reserve Healthy Communities Conference, Washington DC July 2010.

57. Place-based factors and health inequalities. IX Jornadas Andaluzas Salud Investiga. Cadiz, Spain, October 2010

58. Population health and complex systems approaches. Ohio State University Initiative in Population Research, November 2010

59. Investigating neighborhood health effects: can complex systems approaches help? Centre for Research in Epidemiology and Population Health, Hôpital Paul Brousse. Paris, February 2011

60. Neighborhoods as contributors to intra-urban health inequalities. WHO Centre for Health Development, Kobe, Japan, February 2011.

61. Area health effects: challenges and opportunities of complex systems methods. Department of Social Medicine, University of Bristol. April 2011

62. Systems approaches in health inequalities research. Symposium of Inequalities in Child Health. University of Bristol April 2011

63. Community –level factors and cardiovascular disease. Centro Nacional de Investigaciones Cardiológicas, Madrid May 2011

64. Environmental Determinants of Cardiovascular Risk, Centre for Research in Environmental Epidemiology (CREAL), Barcelona May 2011

65. Invited Speaker. Community-level influences on health: Annual Meeting of the Academy of Behavioral Medicine Research, Deer valley, Utah, June 2011

66. Key note: Challenges and opportunities in social epidemiology. The International Conference on Social Stratification and Health, Tokyo, August 2011

67. Keynote speaker; Neighborhood factors and health: challenges for health promotion. Health for All-A Challenge for Municipalities and Regional Authorities, Leipzig University, Germany. October 2011.

68. Guest lecture; Methodologic issues in the investigative of neighborhood health effects. ICUH 2011, Belo Horizonte, Brazil. November 2011

69. Keynote speaker; Neighborhoods and Health Disparities: old evidence and new

directions. UNC Minority Health Conference, UNC Gillings School of Global Health, February 2012.

70. Invited speaker; Advances and Pitfalls in social epidemiology lessons for population health research. Center for the Study of Social Inequalities and Health, Mailman School of Public Health Columbia University, April 2012.

71. Plenary Session Speaker; Neighborhoods and Health: Evidence and New Directions, Latina Researchers Conferences, John Jay College of Criminal Justice, Cuny New York, NY. April 2012

72. Key note: Systems approaches in Population Health. Instititute on Systems Science and Health. Office of Behavioral and Social Science Research (OBSSR), St. Lous MS June 2012

73. Invited Speaker. Plenary on Using the Principles of Complex Systems Thinking and Implementation Science to Enhance MCH Program Planning and Delivery. Maternal and Child Health Conference, San Antonio TX, December 2012

74. Panelist. Workshop on the Design of the National Children's Study. Factors, Issues, and Values to Balance and Consider Reaching Decisions about NCS Design. Committee on National Statistics, Board on Children, Youth, and Families. National Academy of Sciences. January 2013

75. Grand Rounds: Beyond individual-level risk factors: your patient's address as a cardiovascular risk factor. Mt. Sinai Hospital, New York City. February 2013

76. Grand Rounds: Understanding the Multi-Level Determinants of Health: Challenges and Opportunities for Epidemiology. Department of Epidemiology. University of Miami. February 2013

77. Invited speaker: Systems and health disparities. Prevention Research Center, University of New Mexico. March 2013

78. Invited speaker: Transcending Impasses in Health Disparities Research: Can systems thinking help? Urban Health Disparities Summit: Shaping Action to Reduce Disparities. Georgia State University. March 2013

79. Invited Speaker: Social determinants of health: old and new challenges. National Hispanic Network on Drug Abuse. Thirteenth Annual International Conference. Washington DC, October 9-11, 2013.

80. Invited speaker: Meeting to celebrate Professor Sally Macintyre's contributions to health inequalities research and policy. London, June 2013.

Consultative Activities

1993 – 1994	Research Consultant. Minority Health Project: Health Care Needs of Hispanic and African Americans—Policy Issues and Challenges, 1993-1994. Department of Health Policy and Management. The Johns Hopkins University School of Hygiene and Public Health
1996 – 1998	Research Consultant. Surveillance of risk factors for chronic diseases and injuries in Latin America.Pan American Health Organization (PAHO/WHO). Program for Non-communicable diseases
1996	Research Consultant. Use of multilevel methods in occupational health research. Universitat Pompeu Fabra, Barcelona, Spain. April 1998
1997	Research Consultant. Psychosocial and neighborhood measures in epidemiologic studies of cardiovascular disease. NHLBI-funded Jackson Heart Study. University of Mississippi Medical Center. Jackson, MS
2003 – 2011	Emerging Science and Psychosocial Committee, the Coronary Artery Risk Development in Young Adults Study, NHLBI
2004 – 2008	Robert Wood Johnson Foundation. Young Epidemiology Scholar (YES) Competition Regional and National Judge
2006	Consultant Forum on Access and Coverage for Children in MI and Children's Environmental Health in MI.Michigan Chapter - American Academy of Pediatrics and Motts Children's Hospital
2007	Consultant to Policy Link on Neighborhoods and Health
2011	Consultant on Urban Health Metrics, WHO Centre for Health Development, Kobe.

Fellowship and Grant Support

ACTIVE

PI (Center Director) $6,257,993 09/01/12 – 08/31/16
NIH\NIMHD (2P60MD002249)
Michigan Center for Integrative Approaches to Health Disparities

PI (Director) $6,944,209 09/01/07 – 08/31/13
NIMHHD/NIH(P60MD002249)
Michigan Center for Integrative Approaches to Health Disparities

PI $3,329,492 06/01/09 – 05/30/14

NIH (5R01 HL071759)
Neighborhoods and CVD risk in a multiethnic cohort

PI $4,216,884 07/01/10– 06/30/14
NIH (R01 HL 5R01HL101161)
Stress, gene-environmnet interactions, and cardiovascular disease

PI $427,625 09/30/11 – 07/31/13
NIH (R21HL106467-01A1)
A Spatial Agent-Based Model of Walking Behavior in Cities.

PI
P60MD002249-05S1 $556,144 09/01/11– 08/31/13
NIH\NIMHD
Environmental Supplement to the Center for Integrative Approaches to Health Disparities

Joint PI
D43 TW009315 $1,136,164 07/01/12 – 06/30/17
NIH-Fogarty
Multilevel &Lifecourse Approaches to NCD Prevention in Latin America

Co-Investigator $3,290,513 09/01/08 – 08/31/13
OBSSR HHSN276200800013C
Application of Systems Approaches to Health Disparities & Population Health

PI $113,114 09/01/08 – 08/31/13
NIH (R03 TW008105)
Social and Neighborhoods Predictors of Obesity in Belo Horizonte

PI – Subcontract $529,577 10/01/05 – 12/31/14
EPA (G3F10287)
Prospective Study of Atherosclerosis, Clinical Cardiovascular Disease, and Long-Term Exposure to Ambient Particulate Matter and Other Air Pollutants in a Multi-Ethnic Cohort

Director $1,122,000 09/01/12 – 08/31/14
RWJ 70278
Robert Wood Johnson Foundation Health & Society Scholars Program

Director $1,216,127 09/01/11 – 08/31/13
RWJ 69250
Robert Wood Johnson Foundation Health & Society Scholars Program

COMPLETED

PI $1,396,894 09/01/10-08/31/12
NIH/NCMHD (P60MD002249-04S1)
Michigan Center for Integrative Approaches to Health Disparities (CIAHD)
Comparative Effectiveness Research to Eliminate Disparities in Cardiovascular Disease (CERED-CVD)

PI $1,199,984 09/30/07 – 07/31/12
NIH (R21DA024273)
Tools for measuring and analyzing cortisol levels in population studies

PI $1,065,392 06/02/03 – 04/30/09
NIH (R01 HL071759)
Neighborhoods and CVD risk in a multiethnic cohort

PI $2,521,375 06/01/04 – 06/30/10
NIH (R01 HL076831)
Socioeconomic patterning of inflammation and hemostasis

PI $159,897 09/30/04 – 04/30/09
NIH (HL071759-S)
Neighborhoods and cardiovascular risk in a multiethnic cohort –Methods Supplement

Director $1,519,648 09/01/10– 08/31/12
67956
Robert Wood Johnson Foundation Health and Society Scholars Program

Director $5,476,781 09/01/06 – 08/31/12
053575
Robert Wood Johnson Foundation Health and Society Scholars Program

PI $768,990 04/01/03 – 03/31/08
EPA (R830543)
Long term exposure to ambient particulate matter and subclinical atherosclerosis

PI $106,790 08/15/04 – 07/31/08
NIH (RO3 TW007020-01)
Social Factors and Cardiovascular Health in Buenos Aires

PI $53,625 03/01/06 – 08/01/07
MacArthur Foundation
Telomeres in MESA

PI $596,750 12/01/97 – 11/30/02
NIH (NHLBI) R29 HL59386
Neighborhood environments and cardiovascular disease

Co-Investigator $569,091 01/01/06–12/31/08
EPA (R832752010)
Heat-related Hospital Admissions among the Elderly: Community, Socio-economic and Medical Determinants of Vulnerability and Economic Impacts

Subcontract PI:
CDC (2142009M31544) $11,737 08/11/09 – 02/01/11
Multi-Ethnic Study of Atherosclerosis (MESA) – Occupational Analysis

Co-Investigator $1,832,589 09/01/05 – 02/28/10
NIH/NICHD (R01 HD050467-01A1)
Urban Social Context, Health and Health Disparities

Subcontract PI $66,085 09/01/05 – 08/31/09
Columbia/NIH(R01 ES014229)
Obesity and the Environment

Co-Investigator $1,913,341 04/01/05–03/31/09
NIA (R01 AG18418)
Understanding Social Disparities in Health and Aging

Core Director (Spatial analysis) $5,020,558 09/27/04 – 08/31/10
NIH (R24 HD047861)
MI Interdisciplinary Center on Social Inequality, Mind & Body

Subcontract PI $564,103 02/01/04 – 01/31/08
NCMHD (MD00206 P60)
Accessing Healthy Communities (Columbia Center for the Health of Urban Minorities)

Subcontract PI $123,004 12/01/04 – 11/30/07
RWJ (5-47961)
Exploring Relationships Between Adult and Physical Activity and Perceived And Objective Measures of Community Environmental Characteristics

Co-Director $4,633,282 09/01/02 – 08/31/07
RWJ 045823
Robert Wood Johnson Foundation Health and Society Scholars Program

Subcontract PI $280,679 02/01/01–11/30/05
NHLBI/NIH (R01 HL64142)
Lifecourse SES, social context, and cardiovascular disease

Co-PI $4,711,859 01/15/99 – 01/15/03
NHLBI/NIH (N01-HC-95161)
Multiethnic Study of Atherosclerosis, Columbia Field Site

Bibliography

Peer Reviewed Articles (§ indicates supervising/senior author)

1. **Diez Roux AV**, Nieto FJ, Comstock GW, Howard G, Szklo M. The relationship between passive smoking and carotid atherosclerosis 12-14 years later. *Preventive Medicine* 1995; 24:48-55.

2. **Diez Roux AV**, Nieto FJ, Tyroler HA, Crum L, Szklo M. Social inequalities and atherosclerosis: the ARIC Study. *Am J Epidemiol* 1995; 141: 960-972.

3. Szklo M, Cerhan J, **Diez Roux AV**, Chambless L, Cooper L, Folsom A, Fried L, Knopman D, Nieto FJ. Estrogen replacement therapy and cognitive functioning in the Atherosclerosis Risk in Communities (ARIC) Study. *Am J Epidemiol* 1996; 144: 1048-1057.

4. **Diez Roux AV**, Nieto FJ, Muntaner C, Tyroler HA, Comstock GW, Shahar E, Cooper LS, Watson RL, Szklo M. Neighborhood environments and coronary heart disease: a multilevel analysis. *Am J Epidemiol.* 1997; 46:48-63.

5. Howard G, Wagenknecht LE, Burke GL, **Diez Roux AV**, Evans GW, McGovern P, Nieto FJ, Tell GS. Smoking and progression of atherosclerosis. *JAMA* 1998; 279:119-124.

6. **Diez Roux AV**. Bringing context back into epidemiology: variables and fallacies in multilevel analysis. *Am J Pub Health* 1998; 88:216-222.

7. **Diez Roux AV**, Nieto FJ, Caulfield L, Tyroler HA, Watson RL, Szklo M. Neighborhood differences in diet: the Atherosclerosis Risk in Communities (ARIC) Study. *J Epidemiol Comm Health* 1999; 53:55-63.

8. **Diez Roux AV**, Northridge M, Morabia A, Bassett M, Shea S. Prevalence and social correlates of cardiovascular disease risk factors in Harlem. *Am J Public Health* 1999; 89: 302-308.

9. Nieto FJ, **Diez Roux AV**, Szklo M, Comstock G, Richey Sharrett A. Short and long-term prediction of clinical and subclinical atherosclerosis by traditional risk factor. *J Clin Epidemiol* 1999; 52:559-567.

10. **Diez Roux AV**. On genes, individuals, society, and epidemiology. *Am J Epidemiol* 1999; 11:1027-1032.

11. **Diez Roux AV**, Link BG, Northridge ME. Income inequality and cardiovascular disease risk factors. *Soc Sci Med* 2000; 50:673-687.

12. Benavides FG, Benach J, **Diez Roux AV**, Roman C. How do types of employment relate to health indicators? Findings from the Second European Survey on Working Conditions. *J Epidemiol Comm Health* 2000; 54:494-501.

13. **Diez Roux AV**. Multilevel analysis in public health research. *Annu Rev Public Health*. 2000; 21:171-92.

14. Din-Dzietham R, Liao D, **Diez Roux AV**, Nieto FJ, Paton C, Howard G, Brown CA, Carnethon M, Tyroler HA. Association of education achievement with the pulsatile arterial diameter change of the common carotid artery: The ARIC Study, 1987-1992 *Am J Epidemiol*. 2000; 152(7):617-27.

15. **Diez Roux AV,**Kiefe CI, Jacobs DR, Haan M, Jackson SA, Nieto FJ, Paton CC, Schulz R. Area characteristics and individual-level socioeconomic position indicators in three population-based epidemiologic studies. *Annals Epidemiol* 2001;11(6):395-405.

16. Schwartz S, **Diez Roux AV**. Causes of Incidence and Causes of Cases: A Durkheimian Perspective on Rose. *Int J Epidemiol* 2001; 30(3):435-9.

17. **Diez Roux AV**,Stein Merkin S, Arnett D, Chambless L, Massing M, Nieto FJ, Sorlie P., Szklo M., Tyroler HA, Watson RL. Neighborhood of residence and incidence of coronary heart disease. *New England J Med* 2001; 345:99-106.

18. §Barr RG, **Diez Roux AV,** Knirsch CA, Pablos-Méndez A. Neighborhood Poverty and the Resurgence of Tuberculosis in New York City, 1984 to 1992. *Am J Public Health*. 2001; 91(9):1487-93.

19. **Diez Roux AV.** Investigating area and neighborhood effects on health. *Am J Public Health* 2001;91(11):1783-9.

20. Morland K, Wing S, **Diez Roux AV**, Poole C. Neighborhood characteristics associated with the location of food stores and food service places. *Am J Prev Med* 2002;22(1):23-9

21. Evenson KR, RosamondWD, Cai J, **Diez Roux AV**, Brancati FL. The Influence of Retirement on Leisure-time Physical Activity: The Atherosclerosis Risk in Communities Study *Am J Epidemiol* 2002;155:692-9.

22. **Diez Roux AV.** A glossary for multilevel analysis. *J Epidemiol Commm Health* 2002; 56:588-94.

23. **Diez Roux AV**, Chambless L, Stein Merkin S, Arnett D, Eigenbrodt M, Nieto FJ, Szklo M, Sorlie P. Socioeconomic disadvantage and change in blood pressure associated with aging. *Circulation* 2002; 106 (6):703-10.

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§Indicates supervising/senior author or papers in which the first author is a student, trainee, or junior researcher supervised by Dr. Diez Roux.

24. **Diez Roux AV**, Jacobs DR, Kiefe CI. Neighborhood characteristics and components of the insulin resistance syndrome in young adults: results from the Coronary Artery Risk Development in Young Adults (CARDIA) Study *Diabetes Care* 2002; 25(11):1976-82.

25. Bild DE, Bluemke DA, Burke G. DetranoR, **Diez Roux AV**, Folsom AR, Greenland P, Jacobs DR, Kronmal R, Liu L, Clark Nelson J, O'Leary D, Saad MF, Shea S, Szklo M, Tracy RP.The Multi-Ethnic Study of Atherosclerosis (MESA): objectives and design. *Am J Epidemiol*. 2002; 156(9):871-81.

26. Morland K, Wing S. **Diez Roux A**. The contextual effect of the local food environment on residents' diets: the atherosclerosis risk in communities (ARIC) study. *Am J Public Health* 2002;92(11):1761-7.

27. **Diez Roux AV**, Stein Merkin S, Hannan P, Jacobs DR, Kiefe CI. Area characteristics, individual-level socioeconomic indicators, and smoking in young adults: the CARDIA Study. Am *J Epidemiol.* 2002; 157(4):315-26.

28. Jingzhong DingJ, **Diez RouxAV**, NietoFJ, McNamaraR, HetmanskiJB, Taylor HA, Tyroler HA.The Racial Disparity of Long-term Mortality after Hospitalized Myocardial Infarction: The Atherosclerosis Risk in Communities Study. *Am Heart J* 2003;146:459-64.

29. **Diez Roux AV.** Residential environments and cardiovascular risk. *J Urban Health* 2003; 80:569-589.

30. Henderson C, Liu X, **Diez Roux A**, Link BG, Hasin D. The effects of US state income inequality and alcohol policies on symptoms of depression and alcohol dependence. *Soc Sci Med* 2004; 58:565-75.

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Work Experience

Office of the Wyoming State Planning Coordinator, Cheyenne, WY, 1976-1977: Policy Analyst on energy and environmental issues, including public lands, western states conventional and oil shale petroleum development.

Rocky Mountain Oil and Gas Association, Denver, CO, 1977-1979: Public Lands and Legal Director on energy, wilderness, land access, conventional and oil shale development, environmental protection, and oil and gas potential of western state and federal lands.

Office of U.S. Senator William Armstrong, Washington, DC, 1980-1982: Legislative Aide on energy, public land and environmental issues, including Colorado wilderness bill, energy development and economic issues. Drafted and analyzed legislation, prepared reports, testimony, speeches, articles and opinion pieces for senator.

U.S. Department of the Interior, 1982-1988: Legislative Aide and Policy Analyst, Office of Legislative Affairs and Minerals Management Service. Drafted and analyzed legislation, prepared testimony, articles and reports for department and agency officials on onshore and offshore energy development, water pollution, parks and artificial reefs.

Global-Comm Partners, 1989 to present: President of sole proprietorship LLC that does research, prepares reports and articles, and gives interviews and speeches on scientific ethics and integrity, corporate social responsibility, climate change, renewable and fossil fuel energy, land use, sustainability, malnutrition, biotechnology, pesticides, disease control, human rights, economic development and other topics. Wrote and produced documentary films on artificial reefs, immigration through Ellis Island, and the Vietnam Veterans Memorial.

Committee For A Constructive Tomorrow (CFACT) and **Congress of Racial Equality** (CORE), 2005 to present: Senior policy analyst and advisor on energy, climate, natural resource, environment, malaria, human rights and economic development issues.

Published Books

Eco-Imperialism: Green power - Black death, Bellevue, WA: Merril Press (2003). Published subsequently in Argentina (Spanish), India (English), Germany (German) and Italy (Italian).

Miracle Molecule: Carbon dioxide, gas of life (foreword by Dr. Roy Spencer), Washington, DC: CFACT Books (2014); in July 2017 ranked #20 on Amazon.com's bestseller ecology list and #99 on its environment list.

Climate Hype Exposed: How politics corrupted climate science, to transform the world economy, Washington, DC: CFACT Books (2015).

Cracking Big Green: Saving the world from the Save-the-Earth money machine (with Ron Arnold), Washington, DC: CFACT Books (2015).

Editor for *Energy Keepers - Energy Killers: The new civil rights battle*, by the late Congress of Racial Equality national chairman Roy Innis (2008); *Rules for Corporate Warriors: How to fight and survive attack group shakedowns*, by Nick Nichols (2001); and *Creatures, Corals and Colors in North American Seas*, by Ann Scarborough-Bull (1990).

Peer-Reviewed Articles and Papers

The Three Faces of Sustainability: Confusion over the meaning of sustainable development causes many people to choose political sustainability instead of truly sustainable increases in economic productivity and standards of living; report published by Heartland Institute (2014).

Two *amicus curiae* briefs to the United States Supreme Court in support of reversing EPA's carbon dioxide "endangerment decision," on the grounds that the decision was arbitrary, failed to consider extensive evidence that CO_2 is beneficial and not harmful, and ignored the many harmful effects of expanded energy and climate regulations on human health and welfare, wildlife and the environment; with Counsel of Record Paul D. Kamenar (2013).

Affordable Energy: The foundation of human rights and economic justice; report published by the American Legislative Exchange Council (2010).

"Lack of Access Makes Mining Law Reform Irrelevant: Updating 1974 landmark study of access to public lands for mineral exploration and development," with L. Courtland Lee, *American Mining Congress Journal* (1994).

Professional papers on artificial reefs: "Offshore Oil Rigs: Biology, mariculture drilling muds and rigs-to-reefs," *Proceedings of the Coastal Zone 87 Symposium on Coastal and Ocean Management* (1987); "Offshore Oil Platforms: An invaluable ecological resource," *Proceedings of Ocean 86 Marine Science and Engineering Conference* (1986); "Oil and Gas Platforms as Artificial Reefs: Oil and fish *can* mix," *Proceedings of the Coastal Zone 85 Symposium on Coastal and Ocean Management* (1985).

Interviews, Speeches and Articles

More than 100 radio and television interviews on energy, climate change, pollution, pesticides, malaria, sustainable development, corporate social responsibility and other topics.

More than 20 speeches at University of Minnesota, University of North Carolina, University of Wisconsin, Tulane University and other campuses, on climate change, sustainable development, malaria prevention, energy, malnutrition, biotechnology and eco-imperialism.

More than 80 articles in the *Wall Street Journal*, *Investor's Business Daily*, *Washington Times*, *New York Post*, *Houston Chronicle*, *Risk Management*, *World Commerce Review*, *Professional Geologist*, and other newspapers and magazines.

More than 400 articles on Townhall.com, EnergyCentral.com, WattsUpWithThat.com, IceCap.org, CanadaFreePress.com, CitizensJournal.US, NaturalGasNow.org, Watchdog.org, EPAabuse.com, FamilySecurityMatters.org, AntigreenBlogspot.com, Tech-Know-Group.com, PoliticalJunki.com, Allsides.com, and many other news and opinion websites.

"The crisis of integrity-deficient scientists: Falsifying or ignoring data that don't support conclusions or agendas on bees and neonicotinoids is fraud," news and opinion websites (2017).

"Exiting the Mad Hatter's climate tea party: President Trump was 100% right (not just 97%) to show real leadership and walk away from Paris," news and opinion websites (2017).

The phony social cost of carbon: The war on fossil fuels ignores CO_2 benefits and high costs of regulations, especially on poor and workers" (with Roger Bezdek), *Washington Times* (2017).

"Those 'devastating' EPA reductions: Proposed budget and personnel cuts reflect environmental progress and essential regulatory reforms," news and opinion websites (2017).

"Monumental, unsustainable environmental impacts: Replacing fossil fuels with renewable energy would severely damage lands, wildlife and resources," news and opinion websites (2017).

"Pipeline anarchy: Trump victory fuels rampant theft, destruction and trashing of the environment – and North Dakota citizens pay the price," news and opinion websites (2016).

"Coming 'profound' alterations in lifestyle: Climate change elites demand austerity – for others," *Washington Times*, (2016).

"Energy civil rights: The Obama Civil Rights Commission turns junk science into less affordable electricity for poor, minority and blue collar families," *Washington Times*, (2016).

"Divestment ethics and realities: Eliminating fossil fuels from investment portfolios hurts colleges, workers and poor families, *American Coal* (2015).

"Fossil fuel divestiture movement suffers from major fallacies: A divestment post mortem," (with Roger Bezdek), *Investor's Business Daily* (2015).

"Why horror movies mustn't guide policy: Computer models and movies created climate monsters," *Washington Times* (2015).

"Using RICO against climate skeptics: Climate alarmists want government to silence skeptics," *Washington Times* (2015).

"Trampling on Coal Country families: Obama administration actions are having serious negative impacts on working families and the coal industry," *American Coal* (2014).

"Four Species of Sustainability: Sustainable development and its permutations – distinguishing the 'real deal' from agenda-driven varieties is key to business success," *World Commerce Review* (2014).

"The myth of killer mercury: EPA uses doctored evidence to cause economic pain and impair human health and welfare" (with Dr. Willie Soon), *Wall Street Journal* (2011).

"The fight against fighting malaria: The World Health Organization saved 750,000 lives in the last decade, but millions still died needlessly," *Risk Management* (2010).

Major Energy and Environmental Projects

Coordinated global "Kill Malarial Mosquitoes *Now*!" campaign that restored DDT as powerful spatial mosquito repellant to WHO, USAID and African nations' arsenal of malaria-fighting technologies (2007).

Wrote and produced *Aquariums Without Walls*, a documentary film about the establishment, diversity and productivity of artificial reefs beneath offshore oil and gas platforms (1989).

Coordinated ten-state analysis of oil and gas potential of lands being considered for wilderness designation, to foster more informed decisions by federal agencies and lawmakers (1979).

Awards and Other Activities

Doctors for Disaster Preparedness, Edward Teller Award for Defense of Freedom, for malaria control work (2008).

PR News CSR Award for Human Rights Communication, for Health and Prosperity International project advancing global energy development and better living standards (2004).

American Film & Video Festival, Blue Ribbon Award, *All the Unsung Heroes*, about stories behind some of the names on the Vietnam Veterans Memorial (1992).

Public Relations Society of America, edited Washington, DC newsletter and served as co-chair of corporate social responsibility section (2003-2006).

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Education

2007 Cornell University Ph.D.
2004 Cornell University M.S.
2000 University of Massachusetts Amherst B.S.

Professional Experience

2016-present Associate Professor, Dept. Biological Systems Engineering, Virginia Tech
2011-2016 Assistant Professor, Dept. Biological Systems Engineering, Virginia Tech
2009-2011 Research Associate, Dept. Biological and Environmental Engineering, Cornell University
2007-2009 Postdoctoral Research Associate, Dept. Biological and Environmental Engineering, Cornell University
2000-2007 Graduate Research Assistant, Cornell University

Awards

2016 Scholar of the Week, Office of the Vice President for Research and Innovation, Virginia Tech
2014 Outstanding Assistant Professor, College of Engineering, Virginia Tech
2013 Outstanding Reviewer, ASCE
2008 USDA-CSREES Award for Mission Integration

Refereed Publications (*student or postdoc, chronological)

1) **Easton, Z.M.**, P.J. Kleinman, A.R. Buda, D. Goering, N. Emberston, S. Reed, P.J. Drohan, M.T. Walter, P. Guinan, J.A. Lory, A.R. Sommerlot*, and A. Sharpley. 2017. Short-term forecasting tools for agricultural nutrient management. J. Environ. Qual. doi:10.2134/jeq2016.09.0377.

2) Sharpley, A., P. Kleinman, C. Baffuat**, Z.M. Easton**, J. Lory, D. Osmond, and T. Veith. 2017. Verification of phosphorus site assessment tools: Lessons from the U.S. J. Environ. Qual. (In Press).

3) Alamdari, N., D. Sample, A. Ross, P Steinberg, and **Z.M. Easton.** 2017. Assessing the effects of climate change on water quantity and quality in an urban watershed using a hydrologic model and assisted calibration. Water. Water 2017, 9, 464; doi:10.3390/w9070464

4) Rees, G.*, E.M. Bock*, K. Stephenson, and **Z.M. Easton.** 2017. Nutrient biofilters in the Virginia Coastal Plain: Nitrogen removal, cost, and potential adoption pathways. J Soil and Water Conserv. 2017 72(2):139-149; doi:10.2489/jswc.72.2.139

5) Wagena, M.B.*, A.R. Sommerlot*, E.M. Bock*, D.R. Fuka*, and **Z.M. Easton**. 2017**.** Development of a nitrous oxide routine for the SWAT model to assess greenhouse gas emissions from agroecosystems. Environ. Model. Software. http://dx.doi.org/10.1016/j.envsoft.2016.11.013.

6) Sommerlot. A.R.*, M.B. Wagena*, D.R. Fuka*, and **Z.M. Easton.** 2016. Coupling the short-term Global Forecast System weather data with a variable source area hydrologic model. Environ. Model. Software. http://dx.doi.org/10.1016/j.envsoft.2016.09.0081364-8152.

7) Wagena, M,B.*, A. Sommerlot*, A. Abiy, D.R. Fuka*, A.S. Collick*, S. Langan, and **Z.M. Easton**. 2016. Regional climate change In the Blue Nile Basin: Implications for water resource availability and sediment transport. Climatic Change. doi: 10.1007/s10584-016-1785-z.

8) Fuka, D.R.*, A.S. Collick*, P. Kleinman, D. Auerbach*, D, Harmel, and **Z.M. Easton**. 2016. Improving the spatial representation of soil properties and hydrology using topographically derived initialization processes in the SWAT model. Hydrol. Proc. doi: 10.1002/hyp.10899.

9) Auerbach, D.*, **Z.M. Easton**, M.T. Walter, A.S. Flecker, and D.R. Fuka*. 2016. Evaluation of alternative weather forcing for hydrologic modeling in tropical basins of Puerto Rico. Hydrol. Proc. doi:10.1002/hyp.10860.

10) Collick, A.S.*, T.L. Veith, D.R. Fuka*, P.J.A. Kleinman, A.R. Buda, J.L. Weld, R.B. Bryant, P.A. Vadas, M.J. White, D. Harmel, and **Z.M. Easton**. 2016. Improved simulation of edaphic and manure phosphorus loss in SWAT. J. Environ. Qual. doi:10.2134/jeq2015.03.0135

11) Bock, E.M.*, B. Coleman*, and **Z.M. Easton**. 2016. Effect of biochar on nitrate removal in a field-scale denitrifying bioreactor. J. Environ. Qual. doi: 10.2134/jeq2015.04.0179.

12) **Easton, Z.M.,** M.E. Rogers*, J.M. Davis*, M. Eick and E.M. Bock*. 2015. Mitigation of sulfate reduction and nitrous oxide emission in denitrifying environments with amorphous iron oxide and biochar. Ecological Engineering. http://dx.DOI.org/10/1016/j.ecoleng20115.05.008.

13) Kleinman, P.J.A., D.R. Smith, C.H. Bolster, and **Z.M. Easton.** 2015. Phosphorus fate, management and modeling in artificially drained systems. J. Environ. Qual. 44:460–466. doi:10.2134/jeq2015. 02.0090.

14) Radcliffe, D.E., D.K. Reid, K. Blombäck, C.H. Bolster, A.S. Collick*, **Z.M. Easton,** W. Francesconi, D.R. Fuka*, H. Johnsson, K. King, M. Larsbo, M.A. Youssef, A.S. Mulkey, N.O. Nelson, K. Persson, J.J. Ramirez-Avila, F. Schmieder, and D.R. Smith. 2015. Applicability of models to predict phosphorus losses in drained fields: A review. J. Environ. Qual. 44:614–628. doi:10.2134/jeq2014.05. 0220.

15) Rittenburg, R.A., A.L. Squires, J. Boll, E. Brooks**, Z.M. Easton**, and T.S. Steenhuis. 2015. Agricultural BMP Effectiveness and dominant hydrological flow paths: Concepts and a review. J. Am Wat. Res. Assoc. DOI:10.1111/1752-1688.12293.

16) Brooks, E.S., S.M. Saia, J. Boll, L. Wetzel, and **Z.M. Easton.** 2015. Assessing BMP effectiveness and guiding BMP planning using process-based modeling. J. Am Wat. Res. Assoc. DOI:10.1111/1752-1688.12296.

17) Boll, J**.**, T.S. Steenhuis, E.S. Brooks, L. Kurkalova, R.A. Rittenburg, A.L. Squires, G. Vellidis, **Z.M. Easton**, and J.D. Wulfhorst. 2015. Featured collection introduction: Synthesis and analysis of Conservation Effects Assessment Projects for improved water quality. *J. Am Wat. Res. Assoc.* DOI:10.1111/1752-1688.12297.

18) Bock, E.*, N. Smith*, M. Rogers*, B. Coleman*, M. Reiter, B. Benham, and **Z.M. Easton**. 2015. Nitrate and phosphate removal and nitrous oxide production in lab-scale denitrifying bioreactors. J. Environ. Qual. 44:605–613. doi:10.2134/jeq2014.03.0111.

19) Collick, A.S.*, D.R. Fuka*, P.J.A. Kleinman, A.R. Buda, J.L. Weld*, M.J. White, T.L. Veith, R.B. Bryant, C.H. Bolster, and **Z.M. Easton**. 2015. Predicting phosphorus dynamics in complex terrains using a variable source area hydrology model. Hydrol. Proc. DOI: 10.1002/hyp.10178.

20) Hoskins, T.C., J.S. Owen, J.S. Fields, J.E. Altland, **Z.M. Easton** and A.X. Niemiera. 2014. Solute transport through a pine-bark based substrate under saturated and unsaturated conditions. JAHS. 139(6):634–641. 2014.

21) Fuka, D.R.*, M.T. Walter, C.A. MacAllister, and **Z.M. Easton**. 2014. SWATmodel: A Multi-OS, Multi-Platform SWAT Model Package in R. J. Am Water Res. Assoc. 1-5. DOI: 10.1111/jawr.12170.

22) Woodbury, J.*, C.A. Shoemaker, D. Cowan, and **Z.M. Easton**. 2014. A comparison of SWAT models for the Cannonsville Watershed with and without variable source area hydrology. J. Am Water Res. Assoc. 1-15. DOI: 10.1111/jawr.12116.

23) Fuka, D.R.*, C.A. MacAllister, A.T. Degaetano, and **Z.M. Easton.** 2013. Using the Climate Forecast System Reanalysis dataset to improve weather input data for watershed models. Hydrol. Proc. DOI: 10.1002/hyp.10073.

24) **Easton, Z.M.** 2013. Defining spatial variability of hillslope infiltration characteristics using geostatistics, error modeling and autocorrelation analysis. J. Irrig. Drain. Eng. ASCE. 139(9) 718-727, DOI:10.1061/(ASCE)IR.1943-4774.0000602

25) Dahlke, H.E., **Z.M. Easton,** D.R, Fuka*, M.T, Walter, and T.S. Steenhuis. 2013. Real-time forecast of hydrologically sensitive areas in the Salmon Creek Watershed, New York State, using an online prediction tool. Water. 5, 917-944; doi:10.3390/w5030917.

26) Flores-López, F., **Z.M. Easton**, L.D. Geohring, P.J. Vermeulen, V.R. Haden, and T.S. Steenhuis. 2013. Factors affecting phosphorous in ground water in an alluvial valley aquifer: Implications for best management practices. Water. *5*. 2013. 540-559; doi:10.3390/w5020540.

27) Pradhanang, S., R. Mukundan, E.M. Schneiderman, M. Zion, A. Anandhi, D.C. Pierson, A. Frei, **Z.M. Easton,** D.R. Fuka*, and T.S. Steenhuis. 2013. Streamflow responses to projected climate change in New York City water supply watershed. J. Am Water Res. Assoc. 1-19. DOI: 10.1111/jawr.12086.

28) Buchanon, B.P., **Z.M. Easton**, R. Schneider and M.T. Walter. 2013. Modeling the hydrologic effects of roadside ditch networks on receiving waters. J. Hydrol. doi: http://dx.doi.org/10.1016/j.jhydrol. 2013.01.040.

29) Buchanan, B.P., J.A. Archibald, **Z.M. Easton,** S.B. Shaw, R.L. Schneider, and M.T. Walter. 2013. A Phosphorus Index that combines critical source areas and transport pathways using a travel time approach. J. Hydrol. http://dx.doi.org/10.1016/j.jhydrol.2013.01.018.

30) Caballero, L.A., **Z.M. Easton,** B.K. Richards, and T.S. Steenhuis. 2013. Evaluating the hydrological impact of a cloud forest in Central America using a semi-distributed water balance model. J. Hydrol. and Hydromech. 61, 2013, 1, 9 – 20 DOI: 10.2478/jhh - 2013-0003.

31) Saia, S., E.S. Brooks, **Z.M. Easton**, C. Baffaut, J. Boll, and T.S. Steenhuis. 2013. Incorporating pesticide transport into the WEPP-UI model for mulch tillage and no-tillage soil with an underlying claypan. Trans ASCE Applied Engineering in Agriculture. 29(3):363-372.

32) Tilahun, S.A., R. Mukundan, B.A. Demisse, T.A. Engda, C.D. Guzman, B.C. Tarakegn, **Z.M. Easton**, A.S. Collick, A.D. Zegeye, E.M. Schneiderman, J.Y. Parlange, and T.S. Steenhuis. 2013. A saturation excess erosion model. Trans. ASABE 56(2): 681-695.

33) Buchanon, B.P., K. Falbo, R. Schneider, **Z.M. Easton**, and M.T. Walter. 2013. Hydrologic impact of roadside ditches in an agricultural watershed: Implications for non-point source pollutant transport. Hydrol. Proc. 10.1002/hyp.9305.

34) Caballero, L., A. RImmer, **Z.M. Easton**, and T.S. Steenhuis. 2012. Rainfall runoff relationships for a cloud forest watershed in Central America: Implications for water resource engineering. J. Am Water Res. Assoc. 20 JUN 2012 | DOI: 10.1111/j.1752-1688.2012.00668.x

35) Buchanon, B.P., **Z.M. Easton**, R. Schneider, and M.T. Walter. 2012. Incorporating variable source area hydrology into a spatially distributed direct runoff model. J. Am. Water Res. Assoc. 48(1): 43–60. DOI: 10.1111/j.1752-1688.2011.00594.x

36) Fuka, D.R.*, **Z.M. Easton**, E.S. Brook, J. Boll, T.S. Steenhuis, and M.T. Walter. 2012. Process-based snowmelt modeling: Integration into the SWAT model. J. Am. Water Res. Assoc. DOI: 10.1111/j.1752-1688.2012.00680.x

37) Dahlke, H.E., **Z.M Easton**, S. Lyon, L.D. Brown, M.T. Walter, and T.S. Steenhuis. 2012. Dissecting the variable source area concept - Subsurface flow pathways and water mixing processes in a hillslope. J Hydrol. doi:10.1016/j.jhydrol.2011.11.052.

38) Rao, N.S., **Z.M. Easton**, D.R. Lee, and T.S. Steenhuis. 2012. Economic analysis of best management practices to reduce watershed phosphorus losses. J. Environ. Qual. doi:10.2134/jeq2011.0165.

39) Dahlke, H.E., **Z.M. Easton,** M.T. Walter, and T.S. Steenhuis. 2012. A field test of the variable source area interpretation of the Curve Number rainfall-runoff equation. J. Irrig. Drain. Eng. ASCE. Vol. 138, No. 3, ISSN 0733-9437/2012/3-235–244.

40) **Easton, Z.M.**, M.T. Walter, D.R. Fuka, E.D. White, and T.S. Steenhuis. 2011. A simple concept for calibrating runoff thresholds in quasi-distributed variable source area watershed models. Hydrol. Proc. doi:10.1002/hyp.8032, 2011.

41) White, E.D., **Z.M. Easton**, D.R. Fuka, A.S. Collick, E. Adgo, M. McCartney, S.B. Awulachew, Y.G. Selassie, and T.S. Steenhuis. 2011. Development and application of a physically based landscape water balance in the SWAT model. Hydrol. Proc. 25:915-925. doi:10.1002/hyp.7876, 2011.

42) Marjerison, R.D., **Z.M. Easton**, H.E. Dahlke, and M.T. Walter. 2011. A P-Index transport factor based on variable source area hydrology for New York State. J. Soil Water Conserv. 66(3):149-157; doi:10.2489/jswc.66.3.149.

43) Flores-López, F., **Z.M. Easton**, L.D. Geohring, and T.S. Steenhuis. 2011. Factors affecting dissolved phosphorus and nitrate concentrations in ground and surface water for a valley dairy farm in the Northeastern United States. Water Environ. Res. 8392:116-127.

44) **Easton, Z.M**., D.R. Fuka, E.D White, A.S. Collick, B.B Ashagre, M. McCartney, S.B. Awulachew, A.A. Ahmed, and T.S Steenhuis. 2010. A multi basin SWAT model analysis of runoff and sedimentation in the Blue Nile, Ethiopia. Hydrol. Earth Syst. Sci. 14(10):1827-1841. doi:10.5194/hess-14-1827-2010, 2010.

45) Tebebu, T.Y., A.Z. Abiy, A.D. Zegeye, H.E. Dahlke, **Z.M. Easton,** S.A. Tilahun, A.S. Collick, S. Kidnau, S. Moges, F. Dadgari, and T.S. Steenhuis. 2010. Surface and subsurface flow effects on permanent gully formation and upland erosion near Lake Tana in the northern Highlands of Ethiopia. Hydrol. Earth Syst. Sci. 14:2207–2217. doi:10.5194/hess-14-2207-2010.

46) Flores-López, F., **Z.M. Easton**, and T.S. Steenhuis. 2010. A multivariate analysis of covariance to determine the effects of near stream best management practices on nitrogen and phosphorus concentrations on a dairy farm in the New York City CEAP watershed. J. Soil Water Conserv. 65(6): 438-449. doi: 10.2489/jswc.65.6.438.

47) **Easton, Z.M.,** P.J. Sullivan, M.T. Walter, D.R. Fuka, A.M. Petrovic, and T.S. Steenhuis. 2010. A simple metric to predict stream water quality from storm runoff in an urban watershed. J. Environ. Qual. 39:1338-1348. doi:10.2134/jeq2010.0013.

48) Faulkner, J.W., **Z.M. Easton,** W. Zhang**,** L.D. Geohring, and T.S. Steenhuis. 2010. Design and risk assessment tool for vegetative treatment areas receiving agricultural wastewater: Preliminary results. J. Environ Manag. 91:1794-1801. DOI: 10.1016/j.jenvman.2010.03.019.

49) Dahlke, H.E., **Z.M. Easton**, D.R. Fuka, S. Lyon, and T.S. Steenhuis. 2009. Modeling variable source area dynamics in a CEAP watershed. Ecohydrology. 2(3): 337-349.

50) Steenhuis, T.S., A.S. Collick, **Z.M. Easton**, E.S. Leggesse, H.K. Bayabil, E.D. White, S.B. Awulachew, E. Adgo, and A.A. Ahmed. 2009. Predicting discharge and erosion for the Abay (Blue Nile) with a simple model. Hydrol. Proc. doi: 10.1.1002/hyp.7513.

51) **Easton, Z.M.**, M.T. Walter, M. Zion, E.M. Schneiderman, and T.S. Steenhuis. 2009. Integrating source specific chemistry in basin scale models to predict phosphorus export from agricultural watersheds. J. Environ. Eng. ASCE. 135(1): 25-35.

52) Rao, N.S., **Z.M. Easton**, E.M. Schneiderman, M.S. Zion, D.R. Lee, and T.S. Steenhuis. 2009. Distributed modeling of agricultural best management practices to reduce phosphorus loading. J. Environ. Mang. 90: 1385-1395.

53) Collick, A.S., **Z.M. Easton**, E. Adgo, S.B. Awulachew, Z. Gete, and T.S. Steenhuis. 2009. Application of a physically-based water balance model on four watersheds throughout the upper Nile basin in Ethiopia. Hydrol. Proc. 23, 3718–372. doi: 10.1002/hyp.7517.

54) Walter, M.T, J.A. Archibald, B. Buchanan, H. Dahlke, **Z.M. Easton**, R.D. Marjerison, A.N. Sharma, and S.B. Shaw. 2009. A new paradigm for sizing riparian buffers to reduce risks of polluted storm water: A practical synthesis. J. Irrig. Drain. Eng. ASCE. 135(2): 200-209.

55) **Easton, Z.M.**, M.T. Walter and T.S. Steenhuis. 2008. Combined monitoring and modeling indicate the most effective agricultural best management practices. J. Environ. Qual. 37:1798–1809.

56) Lui, B.M., A.S. Collick, G. Zeleke, E. Adgo, **Z.M. Easton**, and T.S. Steenhuis. 2008. Rainfall-discharge relationships for a monsoonal climate in the Ethiopian Highlands. Hydrol. Proc. 22:1059-1067.

57) **Easton, Z.M.**, D.R. Fuka, M.T. Walter, D.M. Cowan, E.M. Schneiderman, and T.S. Steenhuis. 2008. Re-Conceptualizing the Soil and Water Assessment Tool (SWAT) model to predict runoff from variable source areas. J. Hydrol. 348: 279-291.

58) de Alwis, D.A., **Z.M. Easton**, H.E. Dahlke, W.D. Philpot, and T.S. Steenhuis. 2007. Unsupervised classification of saturated areas using a time series of remotely sensed images. Hydrol and Earth Sys Sci. 11: 1609-1620.

59) **Easton, Z.M.**, P. Gerard-Marchant, M.T. Walter, A.M. Petrovic, and T.S. Steenhuis. 2007. Identifying dissolved phosphorus source areas and predicting transport from an urban watershed using distributed hydrologic modeling. Water Resour. Res. 43. W11414. doi:10.1029/2006WR005697.

60) Schneiderman, E.M., T.S. Steenhuis, D.J. Thongs, **Z.M. Easton**, M.S. Zion, G.F. Mendoza, M.T. Walter, and A.L. Neal. 2007. Incorporating variable source area hydrology into the curve number based Generalized Watershed Loading Function model. Hydrol. Proc. 21:3420-3430. doi: 10.1002/hyp6556.

61) **Easton, Z.M.**, P. Gérard-Marchant, M.T. Walter, A.M. Petrovic, and T. S. Steenhuis. 2007. Hydrologic assessment of an urban variable source watershed in the Northeast United States. Water Resour. Res. 43. W03413. doi:10.1029/2006WR005076.

62) Collick, A.S., **Z.M. Easton**, F.A. Montalto, B. Gao, Y.J. Kim, L. Day, and T.S. Steenhuis. 2006. Hydrological evaluation of septic disposal field performance in sloping terrains. J. Environ. Eng. ASCE. 132(10) 1289-1297.

63) **Easton, Z.M.** and A.M. Petrovic. 2004. Fertilizer source effect on ground and surface water quality in drainage from turfgrass. J. Environ. Qual. 33 645-655.

Articles Submitted for Publication

1) Sommerlot. A.R.* and **Z.M. Easton.** 2017. Deep learning for high resolution, rapid update soil moisture predictions at large-scales: applying and interpreting artificial intelligence in water resources. Environ. Model. Software. (In Review).

2) Fuka, D.R.*, D. Auerbach, A.S. Collick, and **Z.M. Easton**. 2017. The TopoSWAT toolbox: Enhanced basin characterization in SWAT initializations. Environ. Model. Software. (In Review).

3) Sommerlot. A.R.*, M. Berbero*, D.R. Fuka*, and **Z.M. Easton.** 2017. Development of a free and open source web based interface for distributed short-term hydrologic forecasts. Water. (In Review)

4) Davis M.*, Emily Bock*, B.D. Badgley, and Z.M. Easton. 2017. Biochar and pH as drivers of greenhouse gas production in denitrifying bioreactors. J. Environ. Qual. (In Review).

5) Wagena, M.B.*, A.S. Collick, A. Ross, B. Rau, A. Sommerlot*, R. Najjar, and **Z.M. Easton.** 2017. Quantifying the impact of climate change and climate extremes on hydrologic and biogeochemical processes in the Chesapeake Bay Watershed. Water Resources Research. (In Review).

6) Bosch, D.J., M. Wagena*, A.C. Ross, A.S. Collick, **Z.M. Easton**. 2017. Meeting Water Quality Goals under Climate Change in Chesapeake Bay Watershed, USA. J. Environ Manage. (In Review).

Book Chapters

1) Scott, D.T., M. Rogers*, and **Z.M. Easton**. 2016. Global models of river biogeochemical functioning. *In* J. Jones and E. Stanley, eds. Streams in changing environment. Elsevier. 21 Jul 2016. Pages 417–439. ISBN: 978-0-12-405890-3

2) **Easton, Z.M.,** S.B. Awulachew, T.S. Steenhuis, A. Habte, B. Zemedam, Y. Seleshi, and K. Bashar. 2012. Hydrological processes in the Blue Nile River Basin. *In* S.B. Awulachew, V. Smakhtin, D. Molden and D. Peden, eds. The Nile River Basin: Water, Agriculture, Governance and Livelihoods. Earthscan Publishing. Nov 5. 344 pgs.

3) Steenhuis, T.S., **Z.M. Easton,** S.B. Awulachew, A. Ahmed, K. Bashar, Y. Selassie, E. Adgo, and S. Tiluhan. 2012. Erosion, sediment loss and land degradation with emphasis on the Blue Nile River Basin. *In* S.B. Awulachew, V. Smakhtin, D. Molden and D. Peden, eds. The Nile River Basin: Water, Agriculture, Governance and Livelihoods. Earthscan Publishing. Nov 5. 344 pgs.

4) McCartney, M., T. Alemayehu, Y. Seleshi, Shiferaw, Y.A. Ibrahim, **Z.M. Easton,** and S.B. Awulachew, 2012. Simulating current and future water resource development in the Blue Nile River Basin. *In* S.B. Awulachew, V. Smakhtin, D. Molden and D. Peden, eds. The Nile River Basin: Water, Agriculture, Governance and Livelihoods. Earthscan Publishing. Nov 5. 344 pgs.

5) Engda, T.A., H.K. Bayabil, E.S. Legesse, E. K. Ayana, S.A. Tilahun, A.S. Collick, **Z.M. Easton**, A. Rimmer, S.B. Awulachew, and T.S. Steenhuis. 2011. Watershed hydrology of the (semi) humid Ethiopian Highlands. In Nile River: Hydrology, Climate and Land Use. 145-162. A. Melesse, ed. New York, NY: Springer Science Publisher.

6) Steenhuis, T.S., J. Taylor, A.S. Collick, N. van de Giesen, J Liebe, M. Andreini, and **Z.M. Easton**. 2010. Rainfall-discharge relationships for monsoonal climates. *In* Andreini, Schuetz, and Harrington. Small Reservoirs Toolkit. (pgs 1-10)

7) Steenhuis, T.S., A.S. Collick, **Z.M. Easton**, E.S. Leggesse , H.K. Bayabil, E.D. White, S.B. Awulachew, E. Adgo, and A. Abdalla-Ahmed. 2009. Predicting discharge and erosion for the Abay (Blue Nile) with a simple model. *In* Abtew and Melesse, eds Hydrology and ecology of the Nile River Basin under extreme conditions. National Science Foundation Office of International Science and Engineering. (pgs 200-212).

8) Collick, A.S., **Z.M. Easton**, E. Adgo, S.B. Awulachew, Z. Gete, and T.S. Steenhuis. 2009. Application of a physically-based water balance model on four watersheds throughout the upper Nile basin in Ethiopia. *In* Abtew and Melesse, eds. Hydrology and ecology of the Nile River Basin under extreme conditions. National Science Foundation Office of International Science and Engineering. (pgs 93-113).

9) Awulachew, S.B., M. Tenaw, T.S. Steenhuis, **Z.M. Easton**, A. Ahmed, K.E. Bashar, and A. Hailesellassie. 2009. Impact of watershed interventions on runoff and sedimentation in Gumera watershed, Ethiopia. National Science Foundation Office of International Science and Engineering.

10) Steenhuis, T.S., A.S. Collick, S.B. Awulachew, A. Enyew Adgo, A. Abdassalam, and **Z.M. Easton**. 2009. Modeling Erosion and Sedimentation in the Upper Blue Nile *In: Eds.* W. Abtew and A. M. Melesse. Hydrology and ecology of the Nile River Basin under extreme conditions. National Science Foundation Office of International Science and Engineering. (pgs 93-113).

11) **Easton, Z.M.** and A.M. Petrovic. 2008. Determining nitrogen loading rates based on landuse in an urban watershed. *In* Nett, Carroll, Petrovic, and Horgan, eds. The fate of nutrients and pesticides in the urban environment. American Chemical Society. (pgs 19-42).

12) **Easton, Z.M.** and A.M. Petrovic. 2008. Determining phosphorus loading rates based on landuse in an urban watershed. *In* Nett, Carroll, Petrovic, and Horgan, eds. The fate of nutrients pesticides in the urban environment. American Chemical Society. (pgs 43-62).

13) **Easton, Z.M.** 2004. Data restructuring: I Changing raster values by selected area: II Changing raster values by geographic feature. *In* A. J. Lembo, ed. How do I do that in ArcGIS/Manifold: Illustrating Classic GIS Tasks. Cornell University DSpace. http://hdl.handle.net/1813/165.

14) **Easton, Z.M.** 2004. Vector overlay operations: Line in polygon. *In* A. J. Lembo, ed. How do I do that in ArcGIS/Manifold: Illustrating Classic GIS Tasks. Cornell University DSpace. http://hdl.handle.net/1813/165.

Extension Publications (Peer reviewed)

1) **Easton, Z.M.,** A.S. Collick and E.M. Bock*. 2017. What to consider when considering an agricultural drainage system. BSE-208.

2) **Easton, Z.M.** and J.W. Faulkner. 2016. Communicating climate change to agricultural audiences. BSE-203P.

3) **Easton, Z.M.** and E.M. Bock*. 2016. Soil and soil water relationships. BSE-194P.

4) **Easton, Z.M.** and E.M. Bock*. 2015. Hydrology basics and the hydrologic cycle. BSE-191P

5) **Easton, Z.M.** and J.W. Faulkner. 2014. Climate change adaptation: Mitigating short and long term impacts of climate on agriculture. BSE-109P.

6) Faulkner, J.W. and **Z.M. Easton.** 2014. Agricultural adaptation to climate change: improving resilience in row crop production. University of Vermont Extension.

7) Rogers, M.*, E. Lassiter*, and **Z.M. Easton.** 2014. Greenhouse gas emissions in agriculture: How producers can help to mitigate climate change. BSE-105P.

8) Lassiter, E.* and **Z.M. Easton.** 2013. Denitrifying bioreactors: An emerging best management practice to improve water quality. BSE-55P. http://pubs.ext.vt.edu/BSE/BSE-55/BSE-55-PDF.pdf.

9) **Easton, Z.M**. and E. Lassiter*. 2013. Denitrification management. BSE-54P.

10) **Easton, Z.M.** 2012 How do stream buffers reduce the offsite impact of pollution? VT/0712/web/BSE-38NP.

Proceedings

1) Steenhuis, T.S. J. Taylor, **Z.M. Easton,** A. Collick, N. van de Giesen, J. Liebe, A.A. Ahmed, M. Andreini. 2013. Rainfall-discharge relationships for monsoonal climates. CGIAR Challenge Program on Water and Food. February 10-15, 2013.

2) Fuka, D.R.*, C. MacAlister, S. Seyoum, A. Jones, R. Srinivasan, and **Z.M. Easton**. 2012. Re-dimensioned CFSR data for easy SWAT Initialization. *In.* Proceedings of the 13th Annual SWAT Conference, Delhi, India.

3) Fuka, D.R.*, C. MacAlister, S. Seyoum, M.T. Walter, and **Z.M Easton**. 2012. Simple tooolbox for worldwide topography based soils reclassification for initialization of SWAT. Proceedings of the 13th Annual SWAT Conference, Delhi, India.

4) MacAlister, C., S. Seyoum, Fuka, D.R.*, and **Z.M. Easton,** T.S. Steenhuis. 2012. Applying Climate Reanalysis Data (CFSR) to force watershed models in the Ethiopian Highlands. Proceedings of the 13th Annual SWAT Conference, Delhi, India.

5) Saia, S., E.S. Brooks, **Z.M. Easton**, C. Baffaut, J. Boll, T.S. Steenhuis. 2012. Incorporating pesticide transport into the WEPP-UI model for mulch tillage and no-tillage soil with an underlying claypan. Proceedings of International Symposium on Erosion and Landscape Evolution, Anchorage, Alaska, September 18-21, 2011.

6) Boll J., **Z.M. Easton,** E.S. Brooks, and T.S. Steenhuis. 2011. Comparison of WEPP and SWAT For Watershed Hydrology and Erosion Prediction. International Symposium on Erosion and Landscape Evolution, Anchorage, Alaska, September 18-21, 2011.

7) Tilahun, S.A., R. Mukundan, B.A. Demisse, C. Guzman, B.C. Tarakegn, T.A. Engda, **Z.M. Easton**, A.S Collick, A.D. Zegeye, E.M. Schneiderman, J.Y. Parlange, and T.S. Steenhuis. 2011. A Saturation

Excess Erosion Model. Proceedings of International Symposium on Erosion and Landscape Evolution, Anchorage, Alaska, September 18-21, 2011.

8) Pierson D., H. Markensten, E. Owens, E. Schneiderman, M. Zion, A. Anandhi, S. Pradhanang, A. Matonse, D. Kent, D.R. Fuka, **Z.M. Easton**, and T. Walter. 2010. Investigation of the impact of climate change on the timing and magnitude of streamflow for the Catskill Mountain region Eastern Snow Conference. Hancock, MA June 8-10, 2010.

9) Woodbury, J., C.A. Shoemaker, D.M. Cowan, and **Z.M. Easton**, 2009. A comparison of a SWAT model for the Cannonsville watershed with and without variable source area hydrology. *In* Proceedings of ASCE- Environment and Water Resources Institute Conference.

10) Fuka, D.R., **Z.M. Easton,** T.S. Steenhuis, M.T. Walter. 2009. Integration of a simple process based snowmelt model into SWAT. *In.* Proceedings of the 4th Annual SWAT Conference, Boulder, CO.

11) **Easton, Z.M.,** E.D. White, D.R. Fuka, T.S. Steenhuis. 2009. SWAT Water Balance: Development and Application of a Physically Based Landscape Water Balance in the SWAT Model. *In.* Proceedings of the 4th Annual SWAT Conference, Boulder, CO.

12) Steenhuis, T.S., A.S. Collick, **Z.M. Easton** N. van de Giesen, J. Liebe, A.A. Ahmed, and M. Andreini. 2009. Rainfall discharge relationships for monsoonal climates. *In* Proceedings of the 2009 Nile Basin Initiative Up-Stream Down-Stream Project.

13) White, E.D., **Z.M. Easton**, D.R. Fuka, A.S. Collick, M. McCartney, S.B. Awulachew, and T.S. Steenhuis. 2009. A water balance based Soil & Water Assessment Tool (SWAT) Model for improved performance in the Ethiopian Highlands. *In* Proceedings of the 2009 Nile Basin Initiative Up Stream Down Stream Project.

14) Dahlke, H.E., **Z.M. Easton, D.R.** Fuka, N.S. Rao, E.D. White, T. Veith, E.M. Schneiderman, and T.S. Steenhuis. 2008. An interactive web tool model for siting Best Management Practices in humid areas. 50th Anniversary Conference, NSL, Oxford, MS, September 3-5, 2008.

15) Steenhuis, T.S., A.S. Collick, S.B. Awulachew, A.E. Adgo, A. Abdassalam, and **Z.M. Easton**. 2008. Modelling erosion and sedimentation in the upper Blue Nile. In *Proceedings of the Workshop on the Hydrology and Ecology of the Nile River Basin under Extreme Conditions*. 2008.

16) Awulachew, S.B., M. Tenaw, T. Steenhuis, **Z.M. Easton,** A. Ahmed, K.E. Bashar. 2008. Blue Nile flow, sediment and impact of watershed interventions: case of Gumera Watershed. Second International Forum on Water and Food, Addis Ababa, Ethiopia, 10-13 November 2008.

Technical Reports

1) **Easton, Z.M.,** D. Scavia, R. Alexander, K. Boomer, P. Kleinman, A. Miller, J. Pizzuto, D. Smith, and C. Welty. 2016. Scientific and Technical Advisory Committee review of the Chesapeake Bay Program Phase 6 Watershed Model**.** Nov 2016.

2) **Easton, Z.M.,** M. Berbero*, A. Abiy, A.S. Collick*, S. Langan, R. Ritzema and D.R. Fuka*. 2013. Regional climate change in the Blue Nile Basin, Ethiopia: Implications for water resource availability and sediment transport. Technical Report. Department of Biological Systems Engineering, Virginia Tech and International Water Management Institute, Nile Basin and East Africa Office.

3) Sharpley A.N., C. Bolster, J. Davis, **Z.M. Easton,** P. Kleinman, A. Mallinaro, D. Osmond, P. Vadas, and M. White. 2013. Technical guidance for assessing phosphorus indices. Southern Cooperative

Series Bulletin No. 417 January, 2013. URL: http://saaesd.ncsu.edu/docs/Assessing%20P%20Indices%20SERA17.pdf

4) **Easton, Z.M.**, D.R. Fuka, T.S. Steenhuis, B. Rupp, P. Murawski. 2009. A Modified Soil and Water Assessment Tool (SWAT) Model for flow and sediment transport in the Genesee River Basin. Technical Report. Department of Biological and Environmental Engineering, Cornell University and US Army Corps of Engineers.

5) Awulachew, S.B., M. Tenaw, T.S. Steenhuis, **Z.M. Easton**, A. Ahmed, K.E. Bashar, and A. Hailesellassie. 2009. Impact of watershed interventions on runoff and sedimentation in Gumera watershed. IN: CPWF. Fighting poverty through sustainable water use: Proceedings of the CPWF 2nd International Forum on Water and Food, Addis Ababa, Ethiopia, November 10—14, 2008: Volume I. Colombo: CGIAR Challenge Program on Water and Food

Grant Proposals Currently Funded

2017 NSF- NSF Water Sustainability and Climate Cat-1
Easton, Z.M. and D. Sample. Supplement to: WSC-Category 1 Collaborative Proposal: Coupled Multi-scale Economic, Hydrologic, and Estuarine Modeling to Assess Impacts of Climate Change on Water Quality Management. $76,341. June 2017-May 2018.

2017 NSF Earth Cube
Stamps, D. **Z.M. Easton**, D.R. Fuka*, D. Fuller, S. Peckahm. Collaborative Proposal: EarthCube Integration: Brokered Alignment of Long-Tail Observations (BALTO). $1,695,122. Aug 2017-July 2021.

2017 Pratt Endowment
Hannigan, M., **Z.M. Easton,** R. White. Integration of livestock feeding strategies into a nutrient loading, watershed model. $286,600. Jan 2017-Dec 2020.

2017 Delmarva Land Grant Institution Collaborative Research Seed Funding Program
Bosch, D. **Z.M. Easton,** R. White, A.S. Collick. An Agro-ecosystem Model to Achieve Agricultural Sustainability for the Delmarva. $26,000. Aug 2017-July 2019.

2016 USDA-NRCS Conservation Innovation Grant
Easton Z.M. Revising and Implementing Phosphorus Indices to Protect Water Quality in the Northeast US. $96,000. Oct 2016-Sept 2019.

2015 USDA-NRCS Conservation Innovation Grant
Emberston, N. **Z.M. Easton,** M.T. Walter, P. Kleinman. Demonstration and Implementation of a Nutrient Management Risk Advisory System for Protection of Water Quality in Runoff Prone Climates. $529,376. Sept 2015-Sept 2018.

2014 NSF Water Sustainability and Climate Cat-3
Ball, W., **Z.M. Easton,** C. Harman, L. Waigner, W. Kemp, D. Brady. WSC-Category 3 Collaborative Proposal: Impacts of Climate Change on the Phenology of Linked Agriculture-Water Systems. $1,432,854. June 2014-May 2018

2014 NSF Water Sustainability and Climate Cat-1
Easton, Z.M., R. Najjar, M. Li, D. Sample, D. Bosch. WSC-Category 1 Collaborative Proposal: Coupled Multi-scale Economic, Hydrologic, and Estuarine Modeling to Assess Impacts of Climate Change on Water Quality Management. $600,000. June 2014-May 2017.

2014 Delmarva Land Grant Institution Collaborative Research Seed Funding Program
Shober, A. **Z.M. Easton,** A. Allen, A Buda, R. Bryant. Combining electrical resistivity imaging and conservative tracer tests to characterize and model subsurface phosphorus losses in ditch-drained Delmarva soils. $26,000. January 2015-Dec 2017.

2013 USDA-NRCS Conservation Innovation Grant
Easton, Z.M., A. Allen, J. Shortle, P.J.A. Kleinman, R. Bryant, J. Adkins, E. May. Decreasing nitrogen and phosphorus in drainage waters using a comprehensive drainage management approach $748,648. Dec 2013-Nov 2017.

2013 EPA Center for Nutrient Solutions
Shortle, J., R. Brooks, B. Bills, B. Boyer, A. Kremanian, R. Ready, M. Royer, T. Richard, D Beegle, A. Allen P. Kleinman, C. Duffy, **Z. Easton,** A.S. Collick, A. Buda, T. Veith. Center for integrated Multi-scale Nutrient Solutions. $4,550,740. Aug 2103- July 2017.

Past Grant Proposals

2014 Virginia Dept. Environmental Quality Implementation Grant
Easton Z.M. Bioreactors and biofilters as edge of field treatment practices to reduce nitrogen and phosphorus transfer to receiving waters. $120,000. Feb 2014-July 2015.

2014 USDA-ARS
Easton. Z.M. P Index Modeling Support and Outreach. $70,000. Oct 2014-Sept 2016.

2014 Virginia Tech College of Engineering Graduate Research Fellowship
Easton, Z.M., and D. Sample. $19,700. Aug 2015-May 2016.

2013 NSF Earth Cube
Jhoda, S., J. Pearlamn, **Z.M. Easton,** D.R. Fuka, O. Schofield, R. Duerr, G. Bowker. Brokering Building Block, (Bcube) building the next generation of data sharing protocols for the geosciences. $1,592,233. Oct 2013-Sept 2016.

2012 USDA-NRCS Conservation Innovation Grant
Kleinman, P.J.A., **Z.M. Easton,** D. Beegle, F. Coale, Q. Ketterings, J. McGrath, and A.N. Sharpley. Refining and Harmonizing Phosphorus Indices in the Chesapeake Bay Region to Improve Critical Source Area Identification and to Address Nutrient Management Priorities. $801,532. Oct 2012-Sept 2016

2012 USDA-NRCS Conservation Innovation Grant
Sharpley, A.N., P.J.A. Kleinman, **Z.M. Easton,** D. Beegle, F. Coale, Q. Ketterings, and J. McGrath. Identify Methods to Refine Phosphorus Indices and Synthesize and Extend Lessons and Outcomes from Three Regional Indexing Efforts. $57,000. Oct 2012-Sept 2016.

2012 USDA –AFRI
Walter, M.T., **Z.M. Easton**, R. Stedman, J. Faulkner, E. Ling, B. Benham. Twenty-first century development of 21st century precision agriculture for water quality protection. $499,387. Mar 2012-Dec 2015.

2013 Virginia Water Resources Research Council Grant
Bock, E.* and **Z.M. Easton.** Optimization of denitrification and mitigation of greenhouse gas emission in a denitrifying bioreactor. $5,000. Aug 2013-Aug 2014.

2012 Virginia Tech ICTAS Junior Faculty Collaborative Proposal
Easton, Z.M., and B. Benham. Coupled Biochemical/Biophysical Systems to Remove Contaminants from Shallow Groundwater. $120,000. ($112,000). June 2013-May 2014.

2012 USDA-ARS
Easton, Z.M. Refining P Indices to comply with NRCS 590 standards. $16,743. ($16,743). Aug 2012-July 2013.

2012 Virginia Tech College of Agriculture and Life Sciences Graduate Student Recruitment Grant
Easton, Z.M. $4000.

2010 EPA- Great Lakes Restoration Initiative

Easton, **Z.M.,** R. Entringer, T.S. Steenhuis**,** C.A. Shoemaker, and L. Gregory. A method to determine in stream total maximum daily loads for phosphorus in the Upper Black Creek, New York. $305,000. Jan 2010-Aug 2013.

2009 US Army Corps of Engineers.
Easton, Z.M. Soil and Water Assessment Tool (SWAT) model for flow and sediment transport in the Genesee River Basin. $44,000.

2009 Nile Basin Initiative
Steenhuis, T.S., **Z.M. Easton**, B. Damtie, S. Tilahun, E. Kaba, A.S Collick, S. Bekele, and M. McCartney. A GIS based model for design of effective best management practices for erosion and water control in the Abay Blue Nile Basin. $120,000.

2009 USDA International Science and Education (ISE) Competitive Grants Program
Steenhuis, T.S., M.F. Walter, A. Pell, B. Damtie, E. Kaba, S. Tilahun, A.S. Collick, W. Poland, F. Montalto, **Z.M. Easton**, and A. Rimmer. Enhancing water sustainability in a water scarce region in Africa: Strengthening the global competence of students and faculty in agricultural water management. $148,712.

2009 USAID Higher Education Development
Steenhuis, T.S., A. Pell, A. Collick, **Z.M. Easton**, E. Kaba, B. Damtie, and S. Bekele. Improved drinking water resource utilization through integrated university research, planning, and training initiatives in the Lake Tana region, Ethiopia. $300,000.

2008 NYS Department of Environmental Conservation
Steenhuis, T.S., A. Simon, E. Langendoen, and **Z.M. Easton**. Erosion/Sedimentation analysis of the Ashokan Reservor/Esopus Creek system. $250,000.

2007 New York State Water Resources Institute
M.T. Walter, **Z.M. Easton**, T.S. Steenhuis, J.-Y. Parlange, and G.N. Nagle. Evaluation of sediment sources in the Hudson River watershed. $20,000.

2007 New York State Water Resources Institute
T.S. Steenhuis, **Z.M. Easton**, L.D. Geohring, and B.K. Richards. Best management practices for managing stormwater runoff from developing areas in the Hudson River Valley. $19,500

2006 New York State Farm Viability Act
D.R. Lee, T.S. Steenhuis, Q.M. Ketterings, L.D. Geohring, N.S. Rao, and **Z.M. Easton**. Best management practice selection and placement for cost-effective control of phosphorus loading in New York State. $145,443

2006 USDA Natural Resource Concerns – Water Resources Objectives
Walter, M.T, T.S. Steenhuis, L.D. Geohring, **Z.M. Easton**, K. Czymmek, Q. Ketterings, B.K. Richards, M.F. Walter, and P.E. Wright. Improving the transport component of the P Index for nutrient management plans in the northeast. $444,415.

Non Refereed Publications

Abstracts

1) Bosch D.J., M. Wagena*, **Z.M. Easton.** 2017. Meeting water quality goals under climate change in Mahantango Watershed. STAC Optimization Workshop, Annapolis MD. Feb 17 Feb 2017.

2) **Easton, Z.M.** 2017. Model optimization: techniques and cautionary tales. STAC Optimization Workshop, Annapolis MD. Feb 17 Feb 2017.

3) Archibald J, **Z.M. Easton**, D. Fuka*, M.T. Walter. 2016. Assessing the effectiveness of manure application timing options to minimize P loss from fields. AGU Annual Meeting. San Francisco CA. Dec 2016.

4) Fuka D.R.* and **Z.M**. Easton. 2016. Expanding the performance curve of different weather data sources for hydrologic modeling in central Texas: a comparison of ground observations and the Climate Forecast System Reanalysis as watershed model inputs. AGU Annual Meeting. San Francisco CA. Dec 2016.

5) **Easton Z.M.,** D,R, Fuka*, A., Collick, M. Wagena*, A. Sommerlot*. 2016. Improving the spatial representation of soil properties and hydrology using topographically derived watershed model initialization processes. AGU Annual Meeting. San Francisco CA. Dec 2016.

6) Bryant R, Bock E, Kleinman P, **Easton Z.M**. 2016. Reducing Nutrient Losses Employing Edge-of-Field and in-Ditch Strategies and Monitoring Approaches on the Delmarva Peninsula. ASA, CSSA, SSSA Annual Meeting, Phoenix AZ. Nov 2016

7) **Easton Z.M.** 2016. Can hydrologic complexity simplify field scale modeling? SERA-17 Annual Meeting. Phoenix AZ. Nov 2016.

8) Collick A., **ZM. Easton**, and P. Kleinman. 2016. Understanding the unique hydrology of Maryland's Eastern Shore to better inform nutrient management planning. ASABE Annual Conference, Orlando FL. Jul 2016.

9) Christianson L, A. Colick, **ZM. Easton**, E. Bock*, P. Kleinman, R. Bryant. 2016. In-ditch, stepped denitrifying bioreactor for treatment of agricultural ditch drainage. ASABE Annual Confernce, Orlando FL. Jul 2016.

10) **Easton Z.M.,** D. Fuka*, A. Collick. 2016. Improving the Spatial Representation of Soil Properties and Hydrology Using Topographically Derived Initialization Processes in the SWAT Model. ASABE Annual Conference, Orlando FL. Jul 2016

11) Collick A, **Z.M. Easton**, D. Fuka*, P. Kleinman, T. Veith. 2016. Impacts of normalizing the SWAT topographic index based on watershed size. ASABE Annual Conference, Orlando FL. Jul 2016

12) Bosch, D.J. M. Wagena*, and **Z.M. Easton.** 2016 Meeting Water Quality Goals for Agriculture under Climate Change. Batsheva de Rothschild Workshop on Climate Changes and their Effect on Agriculture, Economics and the Environment. June 20-21, 2016. Rehovot, Israel.

13) **Easton Z.M.,** M. Wagena*. 2016 Development of a mechanistic nitrous oxide routine for the SWAT model to assess greenhouse gas emissions from agroecosystems. Chesapeake Modeling Symposium (ChesMS16) Williamsburg VA. Jun 2016

14) Sommerlot A, **Easton Z.M**. 2016. Coupling the Short-Term Global Forecast System weather data with distributed watershed models: implication for real-time landscape management. Chesapeake Modeling Symposium (ChesMS16) Williamsburg VA. Jun 2016.

15) **Easton Z.M.** Do water quality BMPs work? combined monitoring and modeling hold the answer. Chesapeake Modeling Symposium (ChesMS16) Williamsburg VA.

16) **Easton, Z.M**., R. Najjar, M. Li, D. Sample, D. Bosch, M. Berbero, N. Alamdari, J. Giuffria, A. Ross, W. Ni. 2016 WSC-Cat 1: Coupled multi-scale economic, hydrologic and estuarine modeling to assess the impacts of climate change on water quality. NSF WSC PI Meeting.

17) **Easton Z.M.** 2016. Needs assessment results from the climate and hydrological domains: What data does science need? NSF EarthCube All Hands Meeting, Arlington, VA. Mar 2016

18) **Easton, Z.M**., A. Collick*, M. Wagena*, A. Sommerlot* and D. Fuka*. 2016. Improving the spatial representation of soil properties and hydrology using topographically derived watershed model initialization processes. AGU Annual Meeting. San Francisco CA.

19) Bock, E.* and **Z.M. Easton.** 2015. Greenhouse Gas Analysis by GC/MS. AGU Annual Meeting. San Francisco CA.

20) Archibald, J.A., D. Fuka*, **Z.M. Easton**, M.T. Walter and R. Schneider. 2015. Assessing the effectiveness of manure application timing options to minimize P loss from fields. AGU Annual Meeting. San Francisco CA.

21) Fuka, D.* and **Z.M. Easton.** 2015. Expanding the performance curve of different weather data sources for hydrologic modeling in central Texas: a comparison of ground observations and the Climate Forecast System Reanalysis as watershed model inputs. AGU Annual Meeting. San Francisco CA.

22) Sommerlot, A*, D.R. Fuka*, M. Wagena*, and **Z.M. Easton.** 2015. Coupling the short-term Global Forecast System weather data with disturbed watershed models: implication for landscape management. *In* ASABE 1st Climate Change Symposium: Adaptation and Mitigation. Chicago Illinois.

23) **Easton, Z.M**., R. Najjar, A. Sommerlot*, M. Wagena*, A. Ross, and D. Sample. 2015. Climate change and biogeochemical cycling, building models to predict field and watershed scale changes in biogeochemical cycling. *In* ASABE 1st Climate Change Symposium: Adaptation and Mitigation. Chicago Illinois.

24) **Easton, Z.M.** 2015. Can hydrologic complexity simplify field scale modeling? SERA-17 Annual Meeting, Minneapolis MN.

25) **Easton, Z.M.,** A. Collick* P. Kleinman, D. Harmel, A. Sommerlot*, M. Berbero*, and D.R. Fuka*. 2015. TopoSWAT: a ArcPy toolbox to improve the spatial representation of soil properties and hydrology using topographically derived initialization processes. SWAT Conference. Oct. 2015. Purdue University.

26) Collick, A*. P. Kleinman, T. Veith, D. Harmel, M. White, P. Vadas, D. Beagle, J. Weld*, D. Fuka*, and **Z.M. Easton.** 2015. Improved simulation of soil and manure phosphorus loss in SWAT. SWAT Conference. Oct. 2015. Purdue University.

27) Fuka, D.*, D. Auerbach*, B. Bucahnnon*, A. Collick*, P. Kleinman, M. Berbero*, A. Sommerlot*, and **Z.M. Easton.** 2015. TauRkSWAT: An operating system independent SWAT model watershed initialization interface. SWAT Conference. Oct. 2015. Purdue University.

28) Falinski, K.*, D. Auerbach*, K. Olsen, D.R. Fuka*, and **Z.M. Easton.** 2015. Evaluating weather observations and the Climate Forecast System Reanalysis as inputs for hydrologic modeling in the Hawaiian Islands 2015 SWAT Conference. Oct. 2015. Purdue University.

29) Berbero, M.*, A. Sommerlot*, D.R. Fuka*, M. Davis*, E. Bock*, and **Z.M. Easton.** 2015. SWAT-GHG: A mechanistic greenhouse gas sub-model for SWAT. SWAT Conference. Oct. 2015. Purdue University.

30) Sommerlot, A.*, M. Berbero*, D.R. Fuka*, and **Z.M. Easton.** 2015. Coupling the Short-Term Global Forecast System weather data with distributed watershed models: Implication for real-time landscape management. SWAT Conference. Oct. 2015. Purdue University.

31) **Easton, Z.M**., J.M. Davis*, B. Coleman*, and E. Bock*. 2015. Biochar Enhanced Nitrate and Phosphate Removal in Denitrifying Bioreactors. ASABE Special Session on Bioreactors. ASABE Annual Meeting, New Orleans, LA. July 29th 2015. (Invited).

32) **Easton, Z.M.,** A. Collick*, P. Kleinman, A. Sommerlot*, S.J. Kahlsa, and D.R. Fuka*. 2015. Improving Representation of Soil Characteristics and Hydrology Using Topographically Derived Initialization Processes and Data Brokering. SWAT Conference. June 2015. Sardinia Italy.

33) Fuka, D.R.*, A. Collick*, D. Wright, S.J. Kahlsa, and **Z.M. Easton.** 2015. Simplifying SWAT Model Initialization. SWAT Conference. June 2015. Sardinia Italy.

34) Sommerlot, A.*, M. Berbero*, D.R. Fuka*, and **Z.M. Easton.** 2015. Coupling the Short-Term Global Forecast System weather data with distributed watershed models: Implication for real-time landscape management. SWAT Conference. June 2015. Sardinia Italy.

35) **Boldrini, E.,** Z.M. Easton, D.R. Fuka*, J. Pearlman, and S. Nativi. 2015. Brokering technologies to realize the hydrology scenario in NSF BCube. Geophysical Research Abstracts. Vol. 17, EGU2015-12630-3, 2015. EGU General Assembly 2015.

36) **Easton, Z.M.**, A. Collick*, P. Kleinman, A. Sommerlot, S.J. Kalsa, C. McAlister, and D. Fuka*. 2015. Using the BCube Brokering System to add topographic features for field scale processes into basin scale hydrological models. Geophysical Research Abstracts. Vol. 17, EGU2015-7752, 2015. EGU General Assembly 2015.

37) Fuka, D.R.*, A. Collick*, P. Kleinman, A. Sommerlot*, S.J. Kalsa, C. McAlister, and **Z.M. Easton.** 2015. Using the BCube Brokering as a framework for hydrological model repeatability. Geophysical Research Abstracts. Vol. 17, EGU2015-7897-1, 2015. EGU General Assembly 2015.

38) Coleman, B.*, E. Bock*, and **Z.M. Easton**. 2015. Managing nitrogen in agroecosystems: Practical approaches to reducing edge of field nitrogen loss. Geological Society of America Annual Meeting, Chattanooga TN.

39) Fuka, D.R.*, A. Sommerlot*, M. Wagena* and Zachary Easton. 2015. Funded Project Showcase, NSF EarthCube 2015 AllHands Meeting. May, 2015. Arlington, VA.

40) **Easton, Z.M**., D. Sample, D. Bosch, R. Najjar, M. Li. 2015. Coupled multi-scale modeling to assess impacts of climate change on water quality and management in the Chesapeake Bay. NSF Water Sustainability and Climate PI Meeting, Arlington VA.

41) Alamdari, N.*, D. Sample, and **Z.M. Easton.** 2015. Climate change and BMP performance. NSF Water Sustainability and Climate PI Meeting, Arlington VA.

42) Fuka, D.R.*, A. Sommerlot*, **Z.M. Easton.** 2014. A simple method for assessing available weather data quality for site specific nutrient management. *Eos Trans. AGU, 89*(53), Fall Meet. Suppl., Abstract B51D-0053A.

43) **Easton, Z.M.**, D.R. Fuka*, 2014. Hydrological Modeling and Repeatability with Brokering. *Eos Trans. AGU, 89*(53), Fall Meet. Suppl., Abstract IN31D-3740.

44) **Easton, Z.M.** C. MacAlister, D.R. Fuka*. 2013. Methods for interfacing IPCC climate change scenarios with higher resolution watershed management models in the Ethiopian Blue Nile Basin. *Eos Trans. AGU, 89*(53), Fall Meet. Suppl., Abstract A33E-0295.

45) Bock, E.M.*, D.R. Fuka*, and **Z.M. Easton**. 2013. Nitrogen fate across topographic gradients, from headwaters to riparian zones. *Eos Trans. AGU, 89*(53), Fall Meet. Suppl., Abstract B43E-0567.

46) Fuka, D.R.* C. MacAlister; S.J.S. Khalsa; M.T. Walter; M.Z. Fuka; S.A. Pierce, and **Z.M. Easton.** 2013. Data de- and redimensioning for optimized brokering access. *Eos Trans. AGU, 89*(53), Fall Meet. Suppl., Abstract N51A-1531.

47) **Easton, Z.M.,** A.S. Collick, and D.R. Fuka*. 2013. Modeling Phosphorus Transfer From Fields To Artificial Drainage Networks. *In* Annual Meetings Abstracts [CD-ROM]. ASA, CSSA, and SSSA, Madison, WI**.**

48) Bock, E.M.*, and **Z.M. Easton.** 2013. Quantification of denitrification in a denitrifying bioreactor with biochar amendment. *In* Annual Meetings Abstracts [CD-ROM]. ASA, CSSA, and SSSA, Madison, WI.

49) **Easton, Z.M.,** M.T. Walter, T. S. Steenhuis, S. D. Solomon, C. MacAlister, and D.R. Fuka*. 2013. Using small watershed streamflow gaging stations coupled with watershed modeling systems as spatial precipitation networks. *American Meteorological Society. 27(515): 2013.*

50) Fuka. D.R.* M.T. Walter, T. S. Steenhuis, S. D. Solomon, C. MacAlister, and **Z.M. Easton.** 2013. Spatial area and distance convergences in different parts of the world using CFSR to force watershed-modeling systems. *American Meteorological Society. 27(55): 2013.*

51) Lassiter E.M.* and **Z.M. Easton.** 2012. Rate of denitrification and the accumulation of intermediates in a denitrifying bioreactor. *Eos Trans. AGU, 89*(53), Fall Meet. Suppl., Abstract B43F-0464.

52) Buchanan, B.P., M.T. Walter, S.B. Shaw, **Z.M. Easton.** 2012. A Phosphorus Index that combines critical source areas and transport pathways using a travel time approach. *Eos Trans. AGU, 89*(53), Fall Meet. Suppl., Abstract H53J-1661.

53) Archibald, J.A., M.T. Walter and **Z.M. Easton**. 2011. Applying the Variable Source Loading Function (VSLF) Hydrologic Model in R to predict phosphorus loads. *Eos Trans. AGU, 89*(53), Fall Meet. Suppl., Abstract H11B-1055.

54) Archibald, J.A., **Z.M. Easton,** and M.T. Walter. 2011. Digital Soil Mapping and Hydroecological Modeling. *Eos Trans. AGU, 89*(53), Fall Meet. Suppl., Abstract H11B-1055.

55) Pradhanang S.M., R. Mukundan, E.M. Schneiderman, M.S. Zion, A. Anandhi, D.C. Pierson, A. Frei, **Z.M. Easton**, D.R. Fuka, and T.S. Steenhuis. 2011. Streamflow Responses and Potential Ecological Implications of Climate Change in New York City Water Supply Watershed. *Eos Trans. AGU, 89*(53), Fall Meet. Suppl., Abstract H43B-1204.

56) **Easton, Z.M.**, M.T. Walter, T.S. Steenhuis. 2010. Reconciling Plot- to Watershed-Scale Hydrologic and Biogeochemical Responses. *Eos Trans. AGU, 89*(53), Fall Meet. Suppl., Abstract H14B-04.

57) Dahlke, H. E., **Z. M. Easton**, S. W. Lyon, L. D. Brown, M. T. Walter, T. Steenhuis. 2010. Dissecting the variable source area concept – Flow paths and water mixing processes. *Eos Trans. AGU, 90*(53), Fall Meet. Suppl., Abstract H11C-0822.

58) Dahlke, H.E., **Z.M. Easton,** L. Brown, T.S. Steenhuis. 2010. The role of fragipan soils properties for hillslope subsurface flow dynamics. EGU General Assembly 2010 2-7 May, 2010 in Vienna, Austria, p.1008

59) **Easton, Z.M.**, M. T. Walter, T. S. Steenhuis. 2010. Investigating Plot and Watershed Scale Hydrologic and Biogeochemical Responses. *Eos Trans. AGU, 89*(53), Fall Meet. Suppl., Abstract H14B-04.

60) Saia, S. M., T. S. Steenhuis, **Z. M. Easton**, J. Boll, E. S. Brooks. 2010. Modeling the Impact of Landscape Variability on Nutrient and Pesticide Dynamics in CEAP Watersheds *Eos Trans. AGU, 89*(53), Fall Meet. Suppl., Abstract H33A-1118.

61) Fuka, D. R., **Z. M. Easton**, A. Wale, S. Pacenka, A. Collick, L. A. Caballero, V. Pereira, M. T. Walter, T. S. Steenhuis. 2010. Applications using the global GEONETCast satellite data feed to drive real-time watershed planning and forecasting models. *Eos Trans. AGU, 89*(53), Fall Meet. Suppl., Abstract H43B-1229.

62) Pradhanang, S. M., **Z. M. Easton**, E. Schneiderman, M. S. Zion, T. S. Steenhuis. 2010. Intercomparison of SWAT models in simulating hydrology of Cannonsville Reservoir Watershed. *Eos Trans. AGU, 89*(53), Fall Meet. Suppl., Abstract H53F-1103.

63) Steenhuis, T., **Z. Easton,** J. Boll, L. A. Caballero, H. E. Dahlke, E. S. Brooks, S. A. Tilahun, D. R. Fuka. 2010. Distributed Watershed Models: Back to the Basics (Invited). *Eos Trans. AGU, 89*(53), Fall Meet. Suppl., Abstract H53K-06.

64) Faulkner, J.W., **Z.M. Easton**, W. Zhang, L.D. Geohring, T.S. Steenhuis. 2010. Hydrological Evaluation and Design of Vegetative Treatment Areas. American Water Resources Association 2010 Annual Water Resources Conference, November 1-4, Philadelphia, PA.

65) Dahlke, H.E., **Z.M. Easton**, L.D. Brown, and T.S. Steenhuis. 2010. The role of fragipan soils properties for hillslope subsurface flow dynamics. General Assembly, European Geosciences Union, Vienna, Austria, May 2-7, 2010.

66) Singh, A., Shoemaker, C., Woodbury, J., and **Z.M. Easton**. 2010. New calibration methods for incorporating variable source area hydrology in an application of SWAT to phosphorous transport in a large watershed in Northeastern U. S. In *Proceedings from the 2010 AGU Western Pacific Geophysics Meeting*. American Geophysical Union, 2000 Florida Ave., N. W. Washington DC 20009 USA.

67) **Easton, Z.M.,** T.S. Steenhuis, M.T. Walter, 2009. Up-scaling plot measures in a distributed watershed model. *Eos Trans. AGU, 89*(53), Fall Meet. Suppl., Abstract H32D-07.

68) Woodbury, J., C. A. Shoemaker, D. Cowan, **Z. M. Easton,** 2009. Effects of modeling variable source area hydrology on flow and phosphorous transport predicted by a SWAT model for the Cannonsville Watershed *Eos Trans. AGU, 89*(53), Fall Meet. Suppl., Abstract H51I-0873.

69) **Easton, Z.M.**, P. Bishop, T.S. Steenhuis, and M.T. Walter. 2008. Do water quality BMPs work? Combined monitoring and modeling hold the answer. *Eos Trans. AGU, 89*(53), Fall Meet. Suppl., Abstract H13C-0949.

70) Fuka, D.R., **Z.M. Easton**, H.E. Dahlke, E.D. White, M.T. Walter, D. Cowan, and T.S. Steenhuis. 2008. Integrating "poor-man's" ensemble weather risk forecasts to calibrate and force spatial hydrologic modeling systems. Eos Trans. AGU, 89(53), Fall Meet. Suppl., Abstract H53H-08.

71) White, E.D., **Z.M. Easton**, D.R. Fuka, and T.S. Steenhuis. 2008. Improved Soil and Water Assessment Tool (SWAT) performance by removal of the Curve Number method. Eos Trans. AGU, 89(53), Fall Meet. Suppl., Abstract H43D-1035.

72) **Easton, Z.M**., M.T. Walter, P. Bishop. 2008. Do water quality BMPs work? Combined monitoring and modeling hold the answer. Eos Trans. AGU, 89(53), Fall Meet. Suppl., Abstract H13C-0949.

73) Dahlke, H.E., **Z.M. Easton**, D.R. Fuka, N.S. Rao, and T.S. Steenhuis. 2008. Forecast of spatially distributed runoff dynamics in the Finger Lakes region using an interactive web tool and Python. Eos Trans. AGU, 89(53), Fall Meet. Suppl., Abstract H41G-0965.

74) Dahlke, H., N. Rao, E. White, T. L. Veith, **Z.M. Easton**, E. Schneiderman, and T. Steenhuis. 2008 Testing models for predicting BMP effectiveness in Town Brook, a CEAP watershed. *National Sedimentation Laboratory (NSL)-50 Years of Soil & Water Research in a Changing Agricultural Environment* (2008).

75) Flores-López, F, **Z.M. Easton**, and T.S. Steenhuis. 2007. Ground water, surface water and land interactions for soluble reactive phosphorus and nitrate at a dairy farm in a Catskill Mountains' valley. Eos Trans. AGU, 89(53), Fall Meet. Suppl., Abstract H51B-0462.

76) Rao, N.S., **Z.M. Easton**, D.R. Lee, and T.S. Steenhuis. 2007. Combining water quality and cost-benefit analysis to examine the implications of agricultural best management practices. Eos Trans. AGU, 89(53), Fall Meet. Suppl., Abstract H31F-0724.

77) Fuka, D., T.S. Steenhuis, **Z.M. Easton**, S. Lyon, and M.T. Walter. 2006. Incorporating VSA hydrology into SWAT model: an application to a watershed in the Catskill mountain range. *In* Variable Source Area Hydrology and Targeting Water Quality Conservation Practices. Soil and Water Conservation Society. Ankeny, Iowa.

78) **Easton, Z.M.**, M.T. Walter, and T.S. Steenhuis. 2006. Incorporating variable source area hydrology into curve number based watershed models. *In* Variable Source Area Hydrology and Targeting Water Quality Conservation Practices. Soil and Water Conservation Society. Ankeny, Iowa.

79) **Easton, Z.M.**, P. Gérard-Marchant, and T.S. Steenhuis. 2006. Hydrologic assessment of an urban variable source watershed in the Northeast US. *In* Variable Source Area Hydrology and Targeting Water Quality Conservation Practices. Soil and Water Conservation Society. Ankeny, Iowa.

80) **Easton, Z.M.**, P. Gérard-Marchant, and T.S. Steenhuis. 2006. Predicting dissolved phosphorus transport from an urban watershed using distributed hydrologic modeling. *In* Variable Source Area Hydrology and Targeting Water Quality Conservation Practices. Soil and Water Conservation Society. Ankeny, Iowa.

81) T.S. Steenhuis, C.A. Shoemaker, **Z.M. Easton**, J.R. Stedinger, S. Lyon, N.S. Rao, D. Cowan, D. Fuka, F. Flores-Lopez, and B.A. Tolson. 2006. Integrating data and models in the Catskills to assess effectiveness of Phosphorus BMP's. *In* USDA-CSREES Water Quality Program abstracts. San Antonio, TX.

82) **Easton, Z.M.** and A.M. Petrovic. 2005. Landscape impact on urban runoff: Comparing dissolved and total phosphorus loading rates based on landuse. *In* Annual Meetings Abstracts [CD-ROM]. ASA, CSSA, and SSSA, Madison, WI.

83) **Easton, Z.M.**, P. Gerard-Marchant, T.S. Steenhuis, and A.M. Petrovic. 2005. Dissolved phosphorus transport from an urban watershed using distributed hydrologic modeling. *In* Annual Meetings Abstracts [CD-ROM]. ASA, CSSA, and SSSA, Madison, WI.

84) **Easton, Z.M.** and A.M. Petrovic. 2005. Landscape impact on urban runoff: determining nutrient loading rates based on land use. ACS symposium. The fate of nutrients and plant protection chemical in the urban environment.

85) **Easton, Z.M.** and A.M. Petrovic. 2004. Landscape impact on urban runoff: Determining phosphorus loading rates based on land use. *In* Annual Meetings Abstracts [CD-ROM]. ASA, CSSA, and SSSA, Madison, WI.

86) **Easton, Z.M.**, T.S. Steenhuis, and A.M. Petrovic. 2004. Urban watershed modeling: Using soil moisture distribution and routing to assess the impact of urban development. *In* Annual Meetings Abstracts [CD-ROM]. ASA, CSSA, and SSSA, Madison, WI.

Scientific Presentations

2015 **SWAT Conference. Oct. 2015. Purdue University.**
TopoSWAT: a ArcPy Toolbox to Improve the Spatial Representation of Soil Properties and Hydrology Using Topographically Derived Initialization Processes.

2015 **SWAT Conference. Oct. 2015. Purdue University.**
Improved Simulation of Soil and Manure Phosphorus Loss in SWAT. SWAT Conference. Oct. 2015. Purdue University.

2015 **SWAT Conference. Oct. 2015. Purdue University.**
TauRkSWAT: An Operating System Independent SWAT Model Watershed Initialization Interface.

2015 **SWAT Conference. Oct. 2015. Purdue University.**
Evaluating weather observations and the Climate Forecast System Reanalysis as inputs for hydrologic modeling in the Hawaiian Islands

2015 **SWAT Conference. Oct. 2015. Purdue University.**
SWAT-GHG: A Mechanistic Greenhouse Gas Sub-model for SWAT.

2015 **SWAT Conference. Oct. 2015. Purdue University.**
Coupling the Short-Term Global Forecast System Weather Data with Distributed Watershed Models: Implication for Real-time Landscape Management.

2015 **SWAT Conference. June 2015. Sardinia Italy.**
Improving Representation of Soil Characteristics and Hydrology Using Topographically Derived Initialization Processes and Data Brokering

2015 **SWAT Conference. June 2015. Sardinia Italy.**
Simplifying SWAT Model Initialization.

2015 **SWAT Conference. June 2015. Sardinia Italy.**
Coupling the Short-Term Global Forecast System Weather Data With Distributed Watershed Models: Implication for Real-time Landscape Management.

2015 **P-Index Meeting. July 2015. Chicago Il.**
Modeling and management to improve water quality in upland fields.

2015 **European Geophysical Union General Assembly, Vienna Austria**
Brokering technologies to realize the hydrology scenario in NSF BCube.

2015 **European Geophysical Union General Assembly, Vienna Austria**

Using the BCube Brokering System to add topographic features for field scale processes into basin scale hydrological models.

2015 **European Geophysical Union General Assembly, Vienna Austria**
Using the BCube Brokering as a framework for hydrological model repeatability.

2015 **Geological Society of America Annual Meeting, Chattooga TN.**
Managing nitrogen in agroecosystems: Practical approaches to reducing edge of field nitrogen loss.

2015 **ASABE Annual Meeting, New Orleans, LA. (Invited).**
Biochar Enhanced Nitrate and Phosphate Removal in Denitrifying Bioreactors. ASABE Special Session on Bioreactors

2015 **ASABE Climate Change Meeting, Chicago IL.**
Coupling the short-term Global Forecast System weather data with disturbed watershed models: implication for landscape management
Climate change and biogeochemical cycling, building models to predict field and watershed scale changes in biogeochemical cycling

2015 **NSF Water Sustainability and Climate PI Meeting, Arlington VA**
Coupled multi-scale modeling to assess impacts of climate change on water quality and management in the Chesapeake Bay.

2015 **NSF Water Sustainability and Climate PI Meeting, Arlington VA**
Climate change and BMP performance.

2014 **American Geophysical Union Annual Meeting, San Francisco, CA**
A simple method for assessing available weather data quality for site-specific nutrient management

2014 **American Geophysical Union Annual Meeting, San Francisco, CA**
Hydrological Modeling and Repeatability with Brokering

2014 **ASA-CSSA-SSSA Annual Meeting, Long Beach, CA**
Modeling P Dynamics in Complex Terrains

2014 **VT ICTAS Grant Review, Blacksburg, VA**
Coupled Biophysical Biochemical System to Remediate Nitrate in Groundwater

2014 **Interagency Steering Committee on Multimedia Environmental Models-NSF/USACE, Baltimore, MD**
Can Hydrologic Complexity Simplify Watershed Modeling?

2014 **Chesapeake Bay Science and Technical Advisory Committee, Re-Plumbing the Chesapeake, Easton, MD**
Lessons Agricultural Drainage- Modeling and Management of Ag Drainage

2014 **Virginia Tech GIS and Remote Sensing Symposium, Blacksburg, VA.** A Simple Routine to Model Snow Depth and Snowmelt in Complex Terrains.

2013 **American Geophysical Union Annual Meeting, San Francisco, CA**
Methods for interfacing IPCC climate change scenarios with higher resolution watershed management models in the Ethiopian Blue Nile Basin.

2013 **ASA-CSSA-SSSA Annual Meeting, Tampa, FL**
Modeling Phosphorus Transfer From Fields To Artificial Drainage Networks.

2013 **University of Rhode Island Geoscience Seminar Series, Kingston, RI**
Regional climate change in the Blue Nile Basin: Implication for water availability and sediment transport.

2013 **Cornell University Biological and Environmental Engineering Seminar Series, Ithaca, NY**
Nitrogen Speciation and Nutrient Mass Reductions in Field Scale Bioreactors

2013 **Penn State Water Colloquium, University Park, PA**
Can hydrologic complexity simplify watershed modeling?

2013 **American Meteorological Society, Austin, TX**
Using small watershed streamflow gaging stations coupled with watershed modeling systems as spatial precipitation networks

2013 **American Meteorological Society, Austin, TX**
Spatial area and distance convergences in different parts of the world using CFSR to force watershed-modeling systems

2012 **American Geophysical Union Annual Meeting, San Francisco, CA**
Rate of denitrification and the accumulation of intermediates in a denitrifying bioreactor

2012 **American Geophysical Union Annual Meeting, San Francisco, CA**
A Phosphorus Index that combines critical source areas and transport pathways using a travel time approach

2011 **American Geophysical Union Annual Meeting, San Francisco, CA**
Digital Soil Mapping and Hydroecological Modeling

2010 **American Geophysical Union Annual Meeting, San Francisco, CA**
Reconciling plot- to watershed-scale hydrologic and biogeochemical responses

2010 **USDA National Water Conference, Hilton Head, SC**
Development and application of a physically based landscape water balance in the SWAT model

2009 **American Geophysical Union Annual Meeting, San Francisco, CA**
Up-scaling plot measures in a distributed watershed-modeling framework

2009 **North American Lake Management Society Annual Meeting, Hartford, CT**
Combined monitoring and modeling indicate most effective BMPs.

2009 **SWAT Conference, Boulder, CO**
SWAT Water Balance: Development and application of a physically based landscape water balance in the SWAT model

2009 **International Water Management Institute Upstream Downstream/Nile Basin Initiative Stakeholders Meeting. Addis Ababa, Ethiopia**
Rainfall-runoff and sediment modeling in the Blue Nile Basin

2008 **American Geophysical Union Annual Meeting, San Francisco, CA**
Do water quality BMPs work? Combined monitoring and modeling hold the answer.

2008 **International Water Management Institute Upstream Downstream Meeting. Addis Ababa, Ethiopia**
SWAT modeling in the Blue Nile, Ethiopia: Applications to water allocation management

2008 **International Water Management Institute Upstream Downstream Meeting. Addis Ababa, Ethiopia**
SWAT modeling in the Blue Nile, Ethiopia: Applications to watershed modeling.

2007 **Dept. of Biological and Environmental Engineering: Soil and Water Engineering Seminar Series**
Landscape engineering with limited data

2007 **Dept. of Biological and Environmental Engineering: Soil and Water Engineering Seminar Series**
Identifying hydrologically sensitive areas with a time series of remotely sensed images

2006 **Dept. of Biological and Environmental Engineering: Soil and Water Engineering Seminar Series**

Re-conceptualizing the Soil and Water Assessment Tool (SWAT) model for variable source area hydrology

2005 **Dept. of Biological and Environmental Engineering: Soil and Water Engineering Seminar Series**
Determining and modeling phosphorus loading rates based on land use in an urban watershed

2005 **ASA-CSSA-SSSA Annual Meeting, Salt Lake City, UT**
I. Landscape impact on suburban runoff: Comparing dissolved and total phosphorus loading rates based on landuse
II. Dissolved phosphorus transport from an urban watershed using distributed hydrologic modeling

2004 **ASA-CSSA-SSSA Annual Meeting, Seattle, WA**
I. Landscape impact on urban runoff: Determining phosphorus loading rates based on land use
II. Urban watershed modeling: Using soil moisture distribution and routing to assess the impact of suburban development

2004 **Baltimore Ecosystem Conference, Baltimore, MD**
I. Landscape impact on nutrient loading to surface waters in urban ecosystems.
II. Urban watershed modeling: Using soil moisture distribution and routing to assess the impact of urban development

Invited Presentations

2016 **STAC Optimization Workshop, Annapolis MD**
Model optimization: Best practices and cautionary tales.

2015 **SERA-17 Annual Meeting, Minneapolis MN.**
Can hydrologic complexity simplify field scale modeling?

2015 **ASABE Annual Meeting, New Orleans, LA.**
Biochar enhanced nitrate and phosphate removal in denitrifying bioreactors. ASABE Special Session on Bioreactors.

2014 **Interagency Steering Committee on Multimedia Environmental Models-NSF/USACE, Baltimore MD**
Can hydrologic complexity simplify watershed modeling?

2014 **Chesapeake Bay Science and Technical Advisory Committee, Re-Plumbing the Chesapeake, Easton MD**
Lessons from agricultural drainage- modeling and management

2014 **Chesapeake Bay Science and Technical Advisory Committee, Annapolis MD**
Phosphorus modeling with variable source hydrology.

2014 **North Central Drainage Management Task Force Meeting, Findlay OH**
Enhance nitrogen and phosphorus removal and mitigation of greenhouse gases in denitrifying bioreactors amended with biochar.

2014 **Virginia Tech Office of GIS, Blacksburg VA**
A simple routine to predict spatially distributed snow accumulation and melt in complex terrains.

2013 **University of Rhode Island Geoscience Seminar Series, Kingston RI**
Regional climate change in the Blue Nile Basin: Implication for water availability and sediment transport.

2013 **Cornell University Biological and Environmental Engineering Seminar Series, Ithaca NY**
Nitrogen speciation and nutrient mass reductions in field scale bioreactors, an update

2013 **Penn State Water Colloquium, University Park, PA:**
Can hydrologic complexity simplify watershed modeling?

2012 **Rand Corporation: Security Implications of Sub-Saharan Africa's Increasingly Stressed International Rivers, Washington DC**
Water allocation and water resource development: the trans-boundary basin paradigm.

2012 **Virginia Tech Biological System Engineering Seminar Series, Blacksburg VA**
Redefining phosphorus index transport: integrating critical source areas and transport pathways

2012 **Cornell University Biological and Environmental Engineering Seminar Series, Ithaca NY**
Nitrogen speciation and nutrient mass reductions in field scale bioreactors

2012 **Virginia Crop Production School**
Eliminating non-point from non-point source pollution

2011 **Mid-Atlantic Certified Crop Advisor School**
New tools to protect environmental quality

2009 **American Farmland Trust-Planning for Farms, Food, and Energy**
Protecting water quality in agriculture

2009 **USDA-CSREES National Water Conference**
CEAP Synthesis Symposium (Hosted) I. Quality of long term data; II. Use of hydrology and water quality models; III. Framework for CEAP watershed results.

2007 **International Water Management Institute-Upstream/Downstream Initiative Ethiopia**
Assessing hydrology and sediment loss in the Blue Nile Basin: Options and opportunities

2007 **New York City Watershed Science Support Group**
Identifying hydrologically sensitive areas with a time series of remotely sensed images

2007 **New York City Watershed Science Support Group**
Re-conceptualizing the Soil and Water Assessment Tool (SWAT) model for variable source area hydrology

2006 **Soil and Water Conservation Society Annual Conference**

I. Hydrologic assessment of an urban variable source watershed in the Northeast US

II. Predicting dissolved phosphorus transport from an urban watershed using distributed hydrologic modeling

2006 **SERA-17 Annual Meeting**
Phosphorus risk assessment using the Soil Moisture Distribution and Routing Model

Software (*indicates post doc or advisee)

1) **Sommerlot, A.R.***, and Z.M. Easton. 2015. **HydroMet**. Description: The HydroMet package provides sourcing and formatting of meteorological and climate data for hydrologic modeling applications in R. Availability: http://r-forge.r-project.org/projects/hydromet/

2) **Fuka, D.R*.** and Z.M. Easton. 2015. **VT BCube EcoHydro-Broker**. Description: The VT BCube EcoHydro-Broker is a NSF funded EarthCube data brokering interface that provides data sources in common formats used for watershed modeling and spatial analysis. The BCube Broker searches data stores in a user defined search space (e.g., bounding box, watershed extent, etc), displays data available for the search domain, and performs common geoprocessing tasks, such as re-projecting, clipping and mosaicing. Availability: http://gradlab4.bse.vt.edu:8080/gi-cat-10.0.2/gi-portal/index.jsp

3) **Easton, Z.M.** and D.R. Fuka*. 2014. **TopoSoil**. Description: An ArcToolbox script that creates FAO based SWAT model topographic GIS layers and database files. The toolbox creates input that

allows users to model VSA hydrology, energy budget processes, and alternative runoff generation sub-models in the SWAT model. Availability: https://drive.google.com/drive/folders/0Bzd8SMcIFw9dM1MwTnByLVJxLVU/0Bzd8SMcIFw9dY29MTUtVMUFVTzA

4) **Sommerlot, A.R.*** and Z.M. Easton. 2011-2014. **Hydrologically Sensitive Area Decision Support Tool (HSA-DSS**). Description: Development and application of a web/mobile phone based system to prioritize areas of the landscape where hydrologically sensitive areas are located. The tool predicts HSAs based on past rainfall and expected rainfall seven days in the future, employing ensemble forecasts of weather conditions. This tool utilizes the ArcIMS GIS platform, which has been implemented using web server, Java virtual machine and servlet engine technology to support data access and a dynamic display of geospatial information. In order to display the location of the HSA, the ArcIMS application server was coupled with a hydrologic assessment tool. The updated HSA maps display both current and 48-hr forecasted locations in the DSS using a management interface programmed in Python. Availability: http://zachary.bse.vt.edu/beta

5) **Sommerlot, A.R**.*, D.R. Fuka*, and Z.M. Easton. 2014. **Real-time and Short Term Climate Forecast System Reanalysis (CFSR) Data Access.** Description: We are in the beta testing stages of a data access tool that provides redimensioned GRIB2 CFSR data for real-time and short term forecast (16 days) applications. This access tool is built in the R computing language to allow open source access to the multi-petabyte CFSR dataset. Availability: Contact zeaston@vt.edu

6) **Fuka D.R.*** and Z.M. Easton. 2014 **SWATmodel**. Description: A multi-OS implementation of the popular USDA-ARS developed SWAT model in R, which allows SWAT to be widely distributed and run as a linear-model-like function on multiple operating systems (OS) and processor platforms. In addition to simplifying the use of SWAT across computational platforms, the SWATmodel package allows SWAT modelers to utilize the analytical capabilities, statistical libraries, modeling tools, and programming flexibility inherent to R. The SWATmodel package we developed provides a linear-model-like R interface to the SWAT modeling system, transforming weather data through a multi-parameter modeling space into a hydrological output response. A valuable feature of R analysis packages is their ability to work on most OS and system architectures. SWATmodel contains the public domain SWAT FORTRAN code, slightly modified to be GNU (GNU's Not Unix), multi-architecture, FORTRAN compiler compliant. This way the Comprehensive R Archive Network (CRAN) can confirm compliance, compile binaries, and distribute the SWAT model for most OS. SWATmodel supports SWAT2005 and SWAT2012. Availability: http://cran.r-project.org/web/packages/SWATmodel/index.html

7) **Fuka, D.R*.** and Z.M. Easton. 2013-2014. **IPCC AR4 Climate Change Scenario Builder**. Description: This R based tool allows users to easily select, process and download the closest grid point from the Intergovernmental Panel on Climate Change (IPCC) 2007 AR4 Special Report on Emission Scenarios (SRES). Specifically, we have built a parser to process the A1B, B1, A2, and non-SRES COMMIT climate change scenarios for all three future time periods included in the SRES AR4 scenarios (2011-2030, 2046-2065, and 2080-2099). Availability: Contact drfuka@vt.edu or zeaston@vt.edu

8) **Fuka, D.R.*** and Z.M. Easton. 2013-2014. **Climate Forecast System Reanalysis (CFSR) Data Access**. Description: The CFSR dataset consists of hourly weather forecasts generated by the National Weather Service's NCEP Global Forecast System. Forecast models are reinitialized every 6 h (analysis hours = 0000, 0600, 1200 and 1800 UTC) using information from the global weather

station network and satellite-derived products. At each analysis hour, the CFSR includes both the forecast data, predicted from the previous analysis hour, and the data from the analysis utilized to reinitialize the forecast models. The horizontal resolution of the CFSR is 38 km. This dataset contains historic expected precipitation and temperatures for each hour for any land location in the world. Moreover, as the precipitation is updated in near-real time every 6 h, these data can provide real-time estimates of precipitation and temperature for hydrologic forecasting. This data access portal has had over 70,000 data queries and downloads. Availability: http://cfsr.bse.vt.edu/swat-cfsr-v02.pl

9) **Fuka, D.R*.** and Z.M. Easton. 2011-2014. **EcoHydRology.** Description: The EcoHydRology package is a collection of useful functions related to hydrology and earth systems implemented in R. Functions include: radiation approximations based on temperature that allow us to approximate terrestrial radiation based on more easily-accessible data such as daily temperature, latitude, day of the year (Jday) and geographical parameters such as aspect and forest cover; solar radiation, including potential solar radiation at the edge of the atmosphere; atmospheric transmissivity; atmospheric and terrestrial longwave radiation. The software models important hydrologic processes that are a function of the radiation budget including snowmelt and snow accumulation and potential evapotranspiration. Legacy Hydrology Packages including TOPMODEL and SWAT. Availability: http://cran.rproject.org/web/packages/EcoHydRology/index.html

Teaching Experience

2012-present	**WATERS**[3] Water As a Teaching and Educational Resource for Students, Scientists, Stakeholders
2011-present	BSE 4125-4126 Comprehensive Senior Design Project, Faculty Advisor, Virginia Tech
2010	BEE 6740 Ecohydrology, Instructor, Cornell University
2007-09	BEE 4730 Introduction to Watershed Modeling, Instructor, Cornell University
2007-10	Introduction to Watershed Modeling, Instructor, Cornell University-Bahir Dar University (Ethiopia) Masters Program
2007-08	Masters level GIS Course, Instructor, Bahir Dar University (Ethiopia)
2007-08	BEE 4960 Geographic Information Systems for Hydrology, Instructor, Cornell University
2006-10	New York State Department of Environmental Conservation Pesticide Instructor

Extension/Outreach Presentations

2017 Easton, Z.M., E.M. Bock. NRCS Ag Water Management and Drainage Mid Atlantic Tour. April 2017.

2016 Easton, Z.M., E.M. Bock. NRCS Ag Water Management and Drainage Mid Atlantic Tour. June 2016.

2016 Bock, E., J. Faulkner, and Z.M. Easton. Climate change adaptation for agriculture: Mitigating short- and long-term impacts of climate on crop production. 2016. Resilient Virginia Conference. Richmond, VA, 22-23 Mar. (invited).

2015 Easton, Z.M. and E. Bock. 2015. Hydrology basics and the water cycle. Mid Atlantic Crop School, Ocean City, MD. Nov 2015. (invited).

2015 Bock, E. and Z.M. Easton. 2015. Drainage basics and drainage water management. Mid Atlantic Crop School, Ocean City, MD. Nov 2015. (invited).

2015 Bock, E. and Z.M. Easton. 2015. Ag water management and water quality. AgriDrain Field Day, Shirley Plantation, Charles City, VA. October 2015

2015 Easton, Z.M. and E. Bock. 2015. Biofilter performance and GHG emissions. NRCS Biofilter Demonstration Day, Corbin Hall Farm, Waterview, VA. August 2015.

2015 Bock, E., and Z.M. Easton. Drainage basics and drainage water management. 2015. Soil and Water Conservation Society Annual Meeting, Richmond, VA, 28 Oct. (invited)

2014 Drainage Demonstration Day, Shirley Plantation, Charles City, VA**.** Drainage Basics and New Technologies to Control Nutrient Loss

2014 The Water We Drink, VT Presidential Installment, Blacksburg, VA

2013 Can Incorporating Terrain Metrics into Watershed Models Improve Conservation Planning? Virginia Ag Conference, Belle Haven, VA

2013 Bioreactors as Edge-of-Field Practice to Reduce Nitrogen Export. Virginia Ag Conference, Belle Haven, VA

2012 Agricultural water quality update. Virginia Ag Conference, Belle Haven, VA

2012 What will the TMDL mean for the Eastern Shore. Virginia Ag Conference, Belle Haven, VA

2012 Emerging technologies to identify hydrologically sensitive areas of the landscape. Virginia Crop Production Association Annual Meeting, Richmond, VA

2011 Eliminating non-point from non-point source pollution. Mid Atlantic Crop School, Ocean City, MD

Popular Press

1) NPR Interview: Researcher Develops Models to Help Urban Areas Plan for Increased Pollution of Chesapeake Bay. http://ideastations.org/radio/news/researcher-develops-models-help-urban-areas-plan-increased-pollution-chesapeake-bay

2) Virginia Tech researchers: As rain and temperatures increase, so will costs to mitigate pollution. April 2017. https://vtnews.vt.edu/articles/2017/04/cals-bay.html

3) Virginia Tech researchers: Climate change may benefit Ethiopia, increase the country's access to water. Oct. 2016. https://vtnews.vt.edu/articles/2016/10/cals-ehtiopiawater.html

4) For Virginia Tech scientists, saving the Chesapeake Bay is all in a day's work. May 2015. http://www.vtnews.vt.edu/articles/2015/05/050115-cals-chesapeake.html

5) NSF and NIFA award $25 million in grants for study of water sustainability and climate. Aug 2014 http://www.nsf.gov/news/news_summ.jsp?cntn_id=132501&org=NSF&from=news

6) Virginia Tech, collaborating universities to study effects of climate change on the Chesapeake Bay. July 23, 2014. http://www.vtnews.vt.edu/articles/2014/07/072214-cals-nsfwater.html

7) College of Agriculture and Life Sciences awarded conservation innovation grants. Dec. 2013. http://www.vtnews.vt.edu/articles/2013/11/111113-cals-usdafunds.html

8) Denitrifying Bioreactors: An Emerging Technology to Improve Water Quality. Virginia Tech Innovations. Oct 20 2012. http://news.cals.vt.edu/innovations/2012/10/curbing-pollution-saving-agriculture/

9) Researchers Studying Impact of Bioreactor on Groundwater Nitrate Remediation. Delmarva Farmer. Oct. 4 2011. Vol 31 No 31. http://americanfarm.com/publications/the-delmarva-farmer/829-researchers-studying-data-of-bioreactor-with-runoff.

10) Cornell Researchers Examine Sources of Pollution. Ithaca Times. Wed Sept 2 2009. http://www.ithaca.com/news/local_news/article_10d186f6-cf8f-506d-9ad0-00c5789add97.html

Professional Societies and Affiliations

2005-present	American Geophysical Union
2012-2013	American Meteorological Society
2010-2012, 2015-present	American Society of Agricultural and Biological Engineers
2009-2011, 2015	European Geophysical Union
2005-2010	Soil and Water Conservation Society
2005-2009, 2013-present	ASA-CSSA-SSSA

University Service

2016-present	Data Analytics and Decision Science Destination Area Stakeholder Team
2016-present	BSE Dept Head Advisory Committee
2016-present	BSE Honorifics Committee
2012-present	BSE International Committee chair
2011-present	BSE Graduate Program Committee member
2011-present	BSE Fee-Based Continuing Education Task Group member

Professional Service

2013-present Associate Editor Journal of Environmental Quality
Reviewer Journal of Environmental Quality
Reviewer Journal of Hydrology
Reviewer Hydrology and Earth System Sciences
Reviewer Journal of the America Water Resources Association
Reviewer Journal of Soil and Water Conservation
Reviewer Plant and Soil
Reviewer ASCE Journal of Environmental Engineering
Reviewer Journal of Environmental Management
Reviewer American Chemical Society
Reviewer Science of the Total Environment
Proposal reviewer for USDA-NSF Water Sustainability and Climate
Proposal reviewer for University of Wisconsin Water Resources Institute
Technical Committee Reviewer for North Carolina Water Resources Research Institute

SWCS Judge for Environthon: annual competition for high school students, students compete in the knowledge areas of Water, Soil, Forest, and Wildlife

Meaningful Watershed Learning Experience-Mentor: Program run by SWCDs to facilitate hands-on environmentally based education for rural/underserved students.

Boards/Advisory/Review/Oversight Committees

2016	**STAC** Chesapeake Bay Phase 6.0 Watershed Model Review Panel Chair
2014-present	**STAC member**
2014	**STAC Expert Panel Member:** Enhancing Approaches to Explain Management Effects on Water Quality Trends

2014-2016 **Chair SERA-43** Southern Region Water Program

2011-2015 **USDA NRCS-SERA 17:** Advisory committee to assess and provide recommendations on the update NRCS 590 Standard, specifically refinements to the P Index

2011-2013 **Virginia Department of Conservation and Recreation Watersheds Network Advisory Panel:** assist DCR with developing and implementing watershed conservation plans and advise on environmental outcomes

Workshops and Short Courses

2016 **Bioreactors and Biochar**
James River Association, Richmond VA Nov 2016

2016 **Mid Atlantic Drainage Tour**
VA, MD and DE. June 2016

2015 **SWAT Boot Camp**
USDA-ARS, University Park, PA. Nov 2015

2013 **Ensemble Modeling of IPCC AR4 Climate Change Scenarios for Water Resource and Sediment Transport in the Blue Nile Basin**
Abay Basin Authority, Bahir Dar Ethiopia Feb 10-19

2013 **SWAT Boot Camp Revisited**
Penn State, PA. Jan 23-25

2012 **Refining P Indices to Comply with Nutrient Management Standards**
USDA-ARS, Temple TX. Oct 1-3

2012 **Integrated Modeling Workshop: Coupling the SWAT model with agent based and flow routing models**
Utah Water Research Laboratory, USU, Logan UT. Aug 7-10

2012 **SWAT Boot Camp**
Penn State, PA. July 10-14

2011 **AGU 2011 Annual Meeting Session Chair**
R's Emerging Environmental Modeling Community

July 25, 2017

SUMMARY CURRICULUM VITAE

Aspects of my resume relevant to air pollution epidemiology and my interactions with US EPA, CARB, and SCAQMD are presented below. Personal references are listed at the end. Complete resume details are on my Scientific Integrity Institute website: http://scientificintegrityinstitute.org/biography.html .

James Eugene Enstrom, Ph.D., M.P.H.

UCLA and Scientific Integrity Institute
907 Westwood Boulevard #200, Los Angeles, CA 90024
http://www.scientificintegrityinstitute.org/
jenstrom@ucla.edu
(310) 472-4274

PROFESSIONAL EXPERIENCE:

2005- PRESIDENT, Scientific Integrity Institute, Los Angeles, CA 90024

2012- RESEARCH PROFESSOR/RESEARCHER (retired, but scientifically active)
2000-2012 RESEARCH PROFESSOR/RESEARCHER
1981-2000 ASSOCIATE RESEARCH PROFESSOR/ASSOCIATE RESEARCHER
1976-1981 ASSISTANT RESEARCH PROFESSOR/ASSISTANT RESEARCHER
School of Public Health, University of California Los Angeles, California 90095

1978-2012 RESEARCH EPIDEMIOLOGIST/RESEARCH PROFESSOR
Jonsson Comprehensive Cancer Center, University of California, Los Angeles, CA 90095

1975-1976 NATIONAL CANCER INSTITUTE POSTDOCTORAL TRAINEE, UCLA School of Public Health
1973-1975 CELESTE DURAND ROGERS FELLOW IN CANCER RESEARCH, UCLA School of Public Health
1971-1975 RESEARCH PHYSICIST AND CONSULTANT, Lawrence Berkeley Laboratory, UC Berkeley, CA 94720
1970-1971 RESEARCH ASSOCIATE, Stanford Linear Accelerator Center, Stanford University, Stanford, CA 94305
1971-1975 CONSULTING PHYSICIST, R & D Associates, Formerly 4640 Admiralty Way, Marina Del Ray, CA 90291
1969-1973 CONSULTING PHYSICIST, The Rand Corporation, 1776 Main Street, Santa Monica, CA 90406

EDUCATION:

1961-1965 Harvey Mudd College, Claremont, California — Bachelor of Science, Physics (1965)
1965-1970 Stanford University, Stanford, California — Master of Science, Physics (1967)
Ph.D., Physics (1970)
{Dissertation Advisor: Melvin Schwartz, Ph.D., Nobel Laureate in Physics,1988}
1974-1976 University of California, Los Angeles, California — Certificate of Postdoctoral Study, Cancer Epidemiology (1975)
Master of Public Health, Epidemiology (1976)
{Epidemiology Mentor: Lester Breslow, M.D., M.P.H.}

ACADEMIC HONORS AND SOCIETIES:
Co-winner of 1964 Harvey Mudd College Borden Science Prize for highest academic standing in my class.
Winner for 1965 Harvey Mudd College Brown Memorial Award for best senior research project in physics.
Covaledictorian of Harvey Mudd College Class of 1965, graduation with distinction.
National Science Foundation Trainee, 1965-1966.
Preventive Oncology Academic Award, National Cancer Institute, 1981-1987.
Founding Fellow, American College of Epidemiology (ACE), 1981-.
Member, Ethics Committee, ACE, 2007-
Chair, Ethics Committee, ACE, 2009-2011
Member: American Association for the Advancement of Science (Nominated for Fellowship);
American Physical Society (life member);
Society for Epidemiologic Research;
American Public Health Association;
American Society of Preventive Oncology;
New York Academy of Sciences.

Biographee, Who's Who in America, 46th Edition, 1990-;
Who's Who in the World, 9th Edition, 1990-;
American Men and Women of Science, l4th Edition, 1979-.

Member, Board of Scientific Advisors, American Council on Science and Health, New York, 1984-.
Board of Trustees, American Council on Science and Health, New York, 2006-.

Scientific Expert, Heartland Institute, Chicago, 2015-.

American Freedom Alliance Heroes of Conscience Award, May 17, 2015.

MAJOR BACKGROUND AREAS:

1. Original epidemiologic research, including funded grant proposals, scientific presentations and publications on the following populations at relatively low risk to cancer: California and Utah Mormons, California physicians, California PREVENTION Magazine subscribers and selected vitamin supplement users, and ACS Cancer Prevention Study I subjects; publication of the first scientific papers on overall mortality rates among Mormons and vitamin supplement users; major publication on the relationship between vitamin C intake and mortality; determination of mortality trends among smokers and nonsmokers; important findings on the long-term impact of smoking cessation on mortality in three major cohorts of smokers; major findings on the relationship between environmental tobacco smoke and tobacco-related disease mortality; first detailed examination of relationship between fine particulate air pollution and mortality in California; first truly independent examination of national relationship between fine particulate air pollution and mortality in 1982 ACS Cancer Prevention Study (CPS II).

2. Extensive epidemiologic research using major data bases: 1950- California death files; 1950- U.S. death files; l970-2010 U.S. Census files; 1966-1968, 1986, and 1993 National Mortality Surveys; 1971-1974 Health and Nutrition Examination Survey (NHANES I); l976-80 NHANES II; l988-1991 NHANES III; 1971-1992 NHANES I Epidemiologic Followup Study; 1976-1992 NHANES II Mortality Followup Study; 1960-2004 American Cancer Society Cancer Prevention Study

(CPS I); 1982-1988 American Cancer Society Cancer Prevention Study (CPS II); 1954-1980 U.S. Veterans Study; 1979-National Health Interview Surveys; 1985- Current Population Surveys; 1995-2011 NIH-AARP Diet and Health Study.

3. Substantial expertise in cancer epidemiology especially as it relates to lifestyle factors and cancer prevention; including attendance at several national conferences on low-risk populations and contribution to the l982 National Academy of Sciences examination of diet, nutrition, and cancer and the 1983 Surgeon General's Report on the health consequences of smoking.

4. Extensive background on epidemiologic aspects of active smoking, passive smoking, smoking cessation, and vitamin C; expertise on radiation carcinogenesis, including familiarity with the basic biological and physical effects of ionizing radiation;

5. Extensive background in several areas of basic and applied physics: doctoral thesis research on experimental K-zero meson interactions and decays; phenomenological studies in high energy elementary particle physics and atomic structure theory; numerical calculations of physical problems in shock hydrodynamics and gas dynamics.

6. Extensive background in data processing and analysis: collection, storage, processing, and publication of data on previous experimental results in elementary particle physics, including design work on a comprehensive data and reference retrieval system for all scientific publications in this field; development of complex computer programs for merging, editing, reformatting data; survival and life table analysis involving large epidemiologic data bases described above.

PHYSICS PUBLICATIONS:

J.E. Enstrom, "Convergence of the Series Expansion for the Thomas Fermi Function," J. Chem. Phys. 46, 1213-l2l4 (1967).

D. Dorfan, J. Enstrom, D. Raymond, M. Schwartz, S. Wojcicki, D.H. Miller, and M. Paciotti, "Charge Asymmetry in the Muonic Decay of the K^{o} L ," Phys. Rev. Letters 19, 987-993 (1967).

J.E. Enstrom, "Convergence of the Series Expansion Solution to the Thomas Fermi Dirac Equation," J. Chem. Phys. 54, 820-822 (1971).

J.E. Enstrom, "Solution of the ThomasFermi Model with Quantum Corrections," Phys. Rev. A4, 460-464 (1971).

J.E. Enstrom, G. Akavia, R. Coombes, D. Dorfan, D. Fryberger, R. Piccioni, D. Porat, D. Raymond, K. Riley, A. Rothenberg, H. Saal, M. Schwartz, and S. Wojcicki, "Measurement of the Two Photon Decay of the K^{o} Meson," Phys. Rev. D4, 2629-2637 (1971).

P. Soding, J. Bartels, A. BarbaroGaltieri, J.E. Enstrom, T.A. Lasinski, A. Rittenberg, A.H. Rosenfeld, T.G. Trippe, N. Barash Schmidt, C. Bricman, V. Chaloupka, and M. Roos, "Review of Particle Properties," Lawrence Berkeley Laboratory, LBL100, April 1972, 145 pages, Phys. Letters 39B, 1145 (1972).

H.L. Brode and J.E. Enstrom, "Analysis of Gas Expansion in a Rarefied Atmosphere," Phys. Fluids 15, 1913-l9l7 (1972).

J.E. Enstrom, "XRay Scattering by Atoms According to the Thomas Fermi Model with Quantum Corrections," Phys. Rev. A7, 979-983 (1973).

EPIDEMIOLOGIC PUBLICATIONS:

N.E. Breslow and J.E. Enstrom, "Geographical correlations between cancer mortality rates and alcohol-tobacco consumption in the United States," J. Nat. Cancer Inst. 53, 631-639 (1974).

J.E. Enstrom, "Cancer mortality among Mormons," presented at American Cancer Society Science Writers' Seminar, San Diego, California, March 24, 1975, and published in Cancer 36, 825-84l (1975).

J.E. Enstrom, "Colorectal cancer and consumption of beef and fat," Br. J. Cancer 32, 432-439 (1975).

J.E. Enstrom and D.F. Austin, "Interpreting cancer survival rates," Science l95, 847-85l (l977); reprinted in HEALTH_CARE: Regulation, Economics, Ethics, Practice, AAAS Science Compendia Series (1978), in Cancer: Pathophysiology, Etiology, and Management; Selected References, edited by L.C. Kruse, J.L. Reese, and L.K. Hart, C.V. Mosby, St. Louis, l979, and in Principles of Medicinal Chemistry, 2nd Edition, edited by W.O. Foye, Lea and Febiger, Philadelphia, 1979.

J.E. Enstrom, "Colorectal cancer and beer drinking," Br. J. Cancer 35, 674-683 (1977).

J.E. Enstrom and E. A. Operskalski, "Multiple sclerosis among Spanish-surnamed Californians," Neurology 28, 434-438 (1978).

J.E. Enstrom, "Cancer and total mortality among active Mormons," Cancer 42, l943-l95l (l978); abstract published in Am. J. Epidem. 106, 239 (1977).

J.E. Enstrom, "Some observations on the epidemiology of colorectal cancer," presented at Geochemical Environment in Relation to Health and Disease Workshop, Captiva Island, Florida, October 8, 1974, and published in Geochemistry and the Environment, Volume III: Distribution of Trace Elements Related to the Occurrence of Certain Cancers, Cardiovascular Diseases, and Urolithiasis, pp. 93-99, National Academy of Sciences, Washington, D.C., 1978.

J.E. Enstrom, "Rising lung cancer mortality among nonsmokers," J. Nat. Cancer Inst. 62, 755-760 (1979).

J.E. Enstrom, "Leukemia from atomic fallout" (Letter to the Editor), N. Engl. J. Med. 300, 149l (1979).

J.E. Enstrom, "Cancer mortality among low-risk populations," Ca - A Cancer Journal for Clinicians 29, 352-361 (1979).

L. Breslow and J.E. Enstrom, "Persistence of health habits and their relationship to mortality," Preventive Medicine 9, 469-483 (l980).

J.E. Enstrom, "Health and dietary practices and cancer mortality among California Mormons," Banbury Report 4: Cancer Incidence in Defined Populations, edited by J. Cairns, J.L. Lyon, and M. Skolnick, Cold Spring Harbor Laboratory, Cold Spring Harbor, New York, 1980, pp. 69-90.

J.E. Enstrom, "The nonassociation of fallout radiation with childhood leukemia in Utah," Banbury Report 4: Cancer Incidence in Defined Populations, edited by J. Cairns, J.L. Lyon, and M. Skolnick, Cold Spring Harbor Laboratory, Cold Spring Harbor, New York, 1980, pp. 163-177.

J.E. Enstrom, "Cancer mortality among Mormons in California during 1968-75," J. Nat. Cancer Inst. 65, 1073-1082 (1980).

EPIDEMIOLOGIC PUBLICATIONS, continued:

J.E. Enstrom and F.H. Godley, "Cancer mortality among a representative sample of nonsmokers in the United States during 1966-68," J. Nat. Cancer Inst. 65, 1175-1183 (1980).

J.E. Enstrom, "A reassessment of the role of dietary fat in cancer etiology," Cancer Res. 41, 3722-3723 (1981).

J.E. Enstrom, "Assessing human epidemiologic data on diet as an etiologic factor in cancer development," Bull. N.Y. Acad. Med. 58, 3l3-322 (l982); reprinted in Cancer, Diet, and Nutrition: A Comprehensive Sourcebook. First Edition, Marquis Who's Who, Inc., Chicago, IL, 1985, pp. 83-90.

J.E. Enstrom and L. Pauling, "Mortality among health conscious elderly Californians," Proc. Nat. Acad. Sci. USA 79, 6023-6027 (1982).

J.E. Enstrom, "Cancer mortality patterns around the San Onofre nuclear power plant, 1960-78," Am. J. Public Health 73, 83-92 (1983).

J.E. Enstrom, "Trends in mortality among California physicians after giving up smoking: 1950-79," Br. Med. J. 286, 1101-1105 (1983).

J.E. Enstrom and L.E. Kanim, "Populations at low risk," in Cancer Prevention in Clinical Medicine, edited by Guy R. Newell, Raven Press, New York, 1983, pp. 49-78.

J.E. Enstrom, "The effect of cigarette smoking cessation on coronary heart disease," in The Health Consequences of Smoking: Cardiovascular Disease. A Report of the Surgeon General, l983, U.S. Department of Health and Human Services, Public Health Service, Rockville, MD, November 1983, pp. 293-328.

J.E. Enstrom, "Cancer and infant mortality around a nuclear power plant," (Letter to the Editor), Am. J. Public Health 73, 1218-1219 (1983).

J.E. Enstrom and L.E. Kanim, "Smoking cessation among California physicians: an example of cancer control," in Advances in Cancer Control: Epidemiology and Research, edited by P.F. Engstrom, P.N. Anderson, L.E. Mortenson, Prog Clinical Biological Res 156, 255-264 (1984).

J.E. Enstrom, "Smoking and mortality," (Letter to the Editor), Science 225, 878 (1984).

J.E. Enstrom, "Cancer near a California nuclear power plant," (Letter to the Editor), Lancet 2, 1249 (1985).

J.E. Enstrom, "AIDS among homosexual men in California," (Letter to the Editor), Lancet 1, 975-976 (1986).

J.E. Enstrom, L.E. Kanim, and L. Breslow, "The relationship between vitamin C intake, general health practices, and mortality in Alameda County, California, Am J Public Health 76, 1124-1130 (1986).

L. Breslow, H.G. Brown, N. Herman, L. Kanim, J. Enstrom, A. Marcus, and W. Price, "Cancer in Los Angeles," Jonsson Comprehensive Cancer Center, Los Angeles, 1988, 100 pages.

R.G. Parker and J.E. Enstrom, "Second primary cancers following initial treatment of patients with head and neck cancers," Int J Radiation Oncology, Biology and Physics 14, 561-564 (1988).

EPIDEMIOLOGIC PUBLICATIONS, continued:

P.D. Grimm, R.G. Parker, and J.E. Enstrom, "Contralateral breast cancer following treatment for initial breast cancer," Am J Clin Oncol 12, 213-216 (1989).

J.E. Enstrom, "Health practices and cancer mortality among active California Mormons," J Nat Cancer Inst 91, 1807-1814 (1989).

J.E. Enstrom, L.E. Kanim, M.A. Klein, "Vitamin C intake and mortality among a sample of the United States population," Epidemiology 3, 194-202 (1992).

J.E. Enstrom, "Counterviewpoint: Vitamin C and mortality," Nutrition Today 28, 39-42 (May/June 1993).

J.E. Enstrom, "Vitamin C intake and mortality among a sample of the United States population: New results," Biological Oxidants and Antioxidants, Editors L. Packer and E. Cadenas, Hippokrates Verlag, Stuttgart, Germany, 1994, pp. 229-241.

J.E. Enstrom, "Vitamin supplement use and mortality," (Letters to the Editor), Am. J. Public Health 84, 1034-1035, 1037-1038 (1994).

J.E. Enstrom, "Vitamin C in Prospective Epidemiologic Studies," In Vitamin C in Health and Disease, Editors L. Packer and J. Fuchs, Marcel Dekker, New York, NY, 1997, pp. 181-200.

J.E. Enstrom, "Health practices and mortality among active California Mormons, 1980-93," In Latter-Day Saint Social Life, Editor James T. Duke, Brigham Young University Press, Provo, UT, 1998, pp. 461-472.

J.E. Enstrom, "Antioxidants and Mortality in a National Sample," Technology 6, 131-139, 1999.

J.E. Enstrom, "Smoking cessation and mortality trends among two U.S. populations," J Clin Epidemiol 52, 813-825, 1999.

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- *Social Scientist*, Pacific Northwest Research Station, USDA Forest Service, Portland, OR 2002.
- *Adjunct Faculty,* Department of Political Science and International Affairs (Geography), Kennesaw State University, Kennesaw, GA 1996-1998.
- *Instructor,* Dept of Continuing Ed, Geography, Univ. of Colorado, Boulder, CO 1993-1995.

CURRENT AND RECENT PROFESSIONAL SERVICES

- *Associate Editor (Appointed)*, *Society and Natural Resources*, March 2012 – 2018
- *Treasurer (Elected), International Association for Society and Natural Resources*, 2018-2021
- *Advisory Board (Appointed),* Afromontane Research Unit, University of the Free State, QwaQwa Campus, South Africa, March 2016-2019.
- *Faculty Senator (Elected)*, Utah State University, 2015-2018.
- *Member (Appointed)*, US Environmental Protection Agency Board of Scientific Counselors,. Executive Committee and Vice-Chair of Sustainable and Healthy Communities Subcommittee, 2014-2017.

AWARDS & HONORS

- 2017 USU College of Humanities and Social Sciences Faculty Researcher of the Year
- 2016 Rural Sociological Society, William R. Freudenberg Natural Resources Research Interest Group Award of Merit
- 2011 North American Colleges and Teachers of Agriculture National Teaching Fellow
- 2008,2009 List of Excellent Teachers Awarded by Students

CURRENT RESEARCH & GRADUATE TRAINING PROJECTS

- *USDA NIFA Funded Research: Documenting Human Health Impacts of Exposure to Microbial and Chemical Hazards in Reclaimed Wastewater Used in Urban Agriculture, Cache Valley.* Co-PI 2017-2019.
- *NSF-NRT Utah State University Graduate Training Program on Climate Adaptation Science in Threatened Landscapes*. Co-PI 2016-2021.
- *iUTAH: innovative Urban Transitions and Aridregion Hydro-sustainability.* Funded by NSF-EPSCoR. Senior Collaborator 2013-2016, Co-PI 2016-2017.
- *Advisor to the Afromontane Research Unit, University of the Free State, South Africa.* 2016-2019.
- *Integrating Water Knowledge to Assess Vulnerability in the Intermountain West*. Utah Agricultural Experiment Station. PI. 2013-2018.
- *Human Dimensions of Mountain Landscapes and Wellbeing* 2012-present.
- *Human-Nature Relationships and Landscape Governance.* Collaboration with European scholars and students. Co-PI. 2009-present.

PEER-REVIEWED JOURNAL ARTICLES (* graduate student, ** undergraduate student)

56. Flint CG, AS Jones, J Horsburgh. Forthcoming 2017. Data management considerations for social water science. *Journal of American Water Resources Association*

55. Braito* M, M Penker, A Muhar, C Flint, S Vogel. Forthcoming. Individual and collective socio-psychological patterns of photovoltaic investment under divergent policy regimes of Austria and Italy. *Energy Policy*.

54. Hand BK, CG Flint, JA Stanford, CA Frissell, CC Mulhfeld, SP Devlin, BP Kennedy, RL Crabtree, A McKee, G Luikart. Forthcoming. The importance of a social-ecological perspective for riverscape management in the Columbia River Basin. *Frontiers in Ecology and the Environment*.

53. Muhar A, CM Raymond, R van den Born, N Bauer, K Böck*, M Braito*, A Buijs, CG Flint, WT de Groot, CD Ives, T Mitrofanenko, T Plieninger, C van Riper, C Tucker. 2017. A model integrating social-cultural concepts of nature into frameworks of interaction between social and natural systems. *Environmental Planning and Management* http://dx.doi.org/10.1080/09640568.2017.1327424.

52. Yoshida* Y, CG Flint. M Dolan. 2017. Farming between love and money: US Midwestern farmers' human-nature relationships and impacts on watershed conservation. *Journal of Environmental Planning and Management*. http://dx.doi.org/10.1080/09640568.2017.1327423

51. Qin H, CG Flint. 2017. Changing community variations in perceptions and activeness related to the spruce bark beetle outbreak on Alaska's Kenai Peninsula. *Sustainability*. 9(67) doi:10.3390/su9010067.

50. Cutcher-Gershenfeld J, KS Baker, N Berente, C Flint, G Gershenfeld, B. Grant, M Haberman*, JL King, C Kirkpatrick, B Lawrence, S Lewis, WC Lenhardt, M Mayernik, C Mcelroy, B Mittleman, N Shin, S Stall, S Winter, I Zaslavsky. 2017. Five Ways Consortia Can Catalyze Open Science. *Nature*. 543(7647). http://www.nature.com/news/five-ways-consortia-can-catalyse-open-science-1.21706

49. Flint CG, X Dai, D Jackson-Smith, J Endter-Wada, SK Yeo, R Hale, MK Dolan*. 2017. Social and geographic contexts of water concerns in Utah. *Society & Natural Resources* 8:885-902. http://dx.doi.org/10.1080/08941920.2016.1264653.

48. Rubin L, CG Flint M Pearson, V Johnson, CJ Rowland Hogue. Forthcoming 2017. Community engagement to break the cycle of children's environmental health vulnerability. *International Journal of Child and Adolescent Health* In Press.

47. Holyoak** G, M Holyoak**, CG Flint. Forthcoming 2017. Health vulnerabilities of Utah's immigrant children: Breaking the cycle. *International Journal of Child and Adolescent Health* In Press.

46. Braito* M, K Böck*, CG Flint, A Muhar, S Muhar, M Penker. Forthcoming 2017. Human-nature relationships and linkages to environmental behaviour. *Environmental Values*. 26:365-389.

45. Jackson-Smith D, CG Flint, M Dolan*, C Trentelman, G Holyoak**, B Thomas*. 2016. Effectiveness of the drop-off/pick-up survey methodology in different neighborhood types. *Journal of Rural Social Science.* 31(3):35-66.

44. Flint CG, C Mascher**, Z Oldroyd**, PA Valle**, E Wynn**, Q Cannon**, A Brown**, B Unger**. 2016. Public intercept interviews and surveys for gathering place-based perceptions: Observations from community water research in Utah. *Journal of Rural Social Science*. 31(3):104-124.

43. Gleeson, E, S Wymann von Dach, CG Flint, G Greenwood, MF Price, J Balsiger, A Nolin, V Vanacker. 2016. Mountains of our future Earth: Defining priorities for mountain research. *Mountain Research and Development*. 36(4):537-548.

42. Flint CG. 2016. Framing the human dimensions of mountain systems: Integrating social science paradigms for a global network of mountain observatories. *Mountain Research and Development* 36(4):528-536.

41. Jones AS, J Horsburgh, D Jackson-Smith, M Ramírez**, CG Flint, J Caraballo**. 2016. A web-based, interactive visualization tool for social environmental survey data. *Environmental Modeling & Software.* 84:412-426.

40. Cutcher-Gershenfeld J, K Baker, DR Carter, LA DeChurch, C Flint, G Gershenfeld, M Haberman*, JL King, C Kirkpatrick, E Knight, B Lawrence, S Lewis, C Lenhardt, P Lopez, MS Mayernik, C McElroy, B Mittleman, V Nichol, M Nolan*, N Shin, C Thompson, S Winter, I Zaslavsky. 2016. Build it, but will they come? A geoscience cyberinfrastructure baseline analysis. *Data Science Journal.* 15(8):1-14. doi:http://dx.doi.org/10.5334/dsj-2016-008.

39. Hale RL, A Armstrong*, MA Baker, S Bedingfield**, D Betts*, C Buahin*, M Buchert, T Crowl, RR Dupont, JR Ehleringer, J Endter-Wada, C Flint, J Grant, S Hinners, JS Horsburgh, D Jackson-Smith, AS Jones, C Licon, SE Null, A Odame*, DE Pataki, D Rosenberg, M Runburg, P Stoker*, C Strong. 2015. iSAW: Integrating structure, actors, and water to study socio-hydro-ecological systems. *Earth's Future.* 3(3): 110-132.

38. Qin H*, CG Flint, AE Luloff. 2015. Tracing temporal changes in the human dimensions of forest insect disturbance on the Kenai Peninsula, Alaska. *Human Ecology.* 43(1): 43-59.

37. David MB, CG Flint, LE Gentry, MK Dolan*, GF Czapar, RA Cooke, T Lavaire*. 2015. Navigating the socio-bio-geo-chemistry and engineering of nitrogen management in two Illinois tile-drained watersheds. *Journal of Environmental Quality.* 44(2): 368-381.

36. DeDecker* J, J Masiunas, AS Davis, CG Flint. 2014. Weed management practice selection among Midwest U.S. Organic Growers. *Weed Science* 62: 520-531.

35. Celio* E, CG Flint, P Schoch*, A Grêt-Regamey. 2014. Farmers' perception of their decision-making in relation to policy schemes: A comparison of case studies from Switzerland and the United States. *Land Use Policy* 41: 163-171.

34. Hendee* J, CG Flint. 2014. Incorporating cultural ecosystem services into forest management strategies for private landowners: An Illinois Case Study. *Forest Science* 60(6): 1172-1179.

33. David MB, CG Flint, GF McIsaac, LE Gentry, M Dolan*, GF Czapar. 2013. Bio-physical and social barriers restrict water quality improvements in the Mississippi River Basin. *Environmental Science & Technology* 47(21): 11928-11929.

32. Flint CG, I Kunze, A Muhar, Y Yoshida*, M Penker. 2013. Exploring empirical typologies of human-nature relationships and linkages to the ecosystem services concept. *Landscape and Urban Planning* 120: 208-217.

31. Gordon J, J Gruver, C Flint, AE Luloff. 2013. Perceptions of wildfire and landscape change in the Kenai Peninsula, Alaska. *Environmental Management* 52: 807-820.

30. Hendee* JT, CG Flint. 2013. Managing private forestlands along the public-private interface of Southern Illinois: Landowner forestry decisions in a multi-jurisdictional landscape. *Forest Policy and Economics* 34: 47-55.

29. Ganning* J, CG Flint, S Gasteyer. 2012. A case study from the post-New Deal state agricultural experiment station system: A life of mixed signals in Southern Illinois. *Agriculture and Human Values*. 29: 493–506.

28. Qin* H, CG Flint. 2012. Integrating rural livelihoods and community interaction into migration and environment research: A conceptual framework of rural out-migration and environment in developing countries. *Society and Natural Resources*. 25(10): 1056-1065.

27. Qin* H, CG Flint. 2012. The impacts of rural labor out-migration on community interaction and implications for rural environmental conservation in Southwest China. *Human Organization* 71(2):135-148.

26. Flint CG, H Qin*, J Ganning*. 2012. Linking local perceptions to the biophysical and amenity context of forest disturbance in Colorado. *Environmental Management*. 49: 553–569.

25. Daniel TC, A Muhar, A Arnberger, O Aznar, JW Boyd, KMA Chan, R Costanza, T Elmqvist, CG Flint, PH Gobster, A Gret-Regamey, R Lave, S Muhar, M Penker, RG Ribe, T Schauppenlehner, T Sikor, I Soloviy, M Spierenburg, K Taczanowska, J Tam*, A Von Der Dunk. 2012. Contributions of cultural services to the ecosystem services agenda. *Proceedings of the National Academy of Sciences*, 109(23): 8812-8819.

24. Flint CG, E Robinson*, J Kellogg*, G Ferguson, L BouFajreldin*, M Dolan*, I Raskin, M Lila. 2011. Promoting wellness in Alaskan villages: Integrating traditional knowledge and science of wild berries. *EcoHealth* 8: 199-209.

23. Carroll M, Á Ní Dhubháin, CG Flint. 2011. Back where they once belonged? Local response to afforestation in County Kerry, Ireland. *Sociologia Ruralis*. 51(1): 35-53.

22. Kellogg* J, G Joseph, K Andrae-Marobela, A Sosome, CG Flint, S Komarnytsky, G Fear*, L Struwe, I Raskin, M Lila. 2010. Screens-to-nature: Opening doors to traditional knowledge and hands-on science education. *NACTA Journal*. Sept 2010: 43-50.

21. Ganning* J. CG Flint. 2010. Constructing a community level amenity index. *Society and Natural Resources*. 23(12): 1253-1258.

20. Qin* H, CG Flint. 2010. Toward a transdisciplinary environmental and resource sociology in China. *Society and Natural Resources*. 23(11): 1123-1131.

19. Daab* MT, CG Flint. 2010. Public reaction to invasive plant species in a disturbed Colorado landscape. *Invasive Plant Science and Management* 3(4): 390-401.

18. Qin* H, CG Flint. 2010. Capturing community context of human response to forest disturbance by insects: A multi-method assessment. *Human Ecology* 38(4): 267-279.

17. Flint CG, J Stevenson**. 2010. Building community disaster preparedness with volunteers: Community emergency response teams in Illinois. *Natural Hazards Review* 11(3): 118-124.

16. Flint CG, AE Luloff, G Theodori. 2010. Extending the concept of community interaction to explore regional community fields. *Journal of Rural Social Science* 25(1): 22-36.

15. Kellogg* J, J Wang, CG Flint, D Ribnicky, P Kuhn, E Gonzalez De Mejia, I Raskin, M Lila. 2010. Alaskan berry resources and human health under the cloud of climate change. *Journal of Agricultural and Food Chemistry* 58: 3884-3900.

14. Qin* H, CG Flint. 2009. A review of western environmental sociology and natural resource sociology. *Social Sciences Abroad,* 2009(2): 4-11 (in Chinese; short version reprinted in *China Social Sciences Today* 2009(15): 9 and in *International Social Science Journal (Chinese Edition)* 2009(3): 119-121; fully reprinted in English in *Chinese Journal of Population, Resources and Environment* 2009 Vol.7 No.4: 25-31).

13. Flint CG, B McFarlane, M Müller. 2009. Human dimensions of forest disturbance by insects: An international synthesis. *Environmental Management* 43(6): 1174-1186.

12. Brennan MA, CG Flint, AE Luloff. 2008. Bringing together local culture and rural development: Findings from Ireland, Pennsylvania and Alaska *Sociologia Ruralis* 49(1): 97-112.

11. Flint CG, AE Luloff, J Finley. 2008. Where is 'community' in community based forestry? *Society and Natural Resources* 21(6): 526-537.

10. Flint CG 2007. Changing forest disturbance regimes and risk perceptions in Homer, Alaska. *Risk Analysis.*27(6): 1597-1608.

9. Flint CG, AE Luloff. 2007. Community activeness in response to forest disturbance in Alaska. *Society and Natural Resources*. 20(5): 431-450.

8. Flint CG, MA Brennan. 2007. Rural communities and disasters: Research from the Southern United States. *Southern Rural Sociology* 22(2): 111-126.

7. Brennan MA, CG Flint. 2007. Uncovering the hidden dimensions of rural disaster mitigation: Capacity building through Community Emergency Response Teams. *Southern Rural Sociology* 22(2): 1-5.

6. Flint CG, MA Brennan. 2006. Community Emergency Response Teams: From disaster responders to community builders *Rural Realities* 1(3): 1-9.

5. Flint CG. 2006. Community perspectives on spruce beetle impacts on the Kenai Peninsula, Alaska. *Forest Ecology and Management* 227(3): 207-218.

4. Flint CG, R Haynes. 2006. Managing forest disturbances and community response: lessons from the Kenai Peninsula, Alaska. *Journal of Forestry* 104(3): 269-275.

3. Flint CG, AE Luloff. 2005. Natural resource-based communities, risks, and disasters: An intersection of theories. *Society and Natural Resources*. 18(5): 399-412.

2. Brennan MA, CG Flint, RV Barnett. 2005. Community volunteers: the front line of disaster response. *Journal of Volunteer Administration* 23(4): 52-56.

1. Flint C. 1995. Recent developments of the International Law Commission Regarding International Watercourses and their implications for the Nile River. *Water International* Vol. 20(4): 197-204.

PEER-REVIEWED BOOK CHAPTERS

C4. Flint CG. 2016. Exploring the scientific and beyond-science interactions of long-term ecological research scientists. In M. Willig and L. Walker (eds), *Long-Term Ecological Research: Changing the Nature of Scientists*. Oxford University Press (pp. 411-421) (Invited).

C3. Flint CG, N Krogman. 2014. Contemporary water issues in rural North America. In C. Bailey, L. Jensen, and E. Ransom (eds), *Rural America in a Globalizing World: Problems and Prospects for the 2010s.* Morgantown: West Virginia University Press (pp. 190-207) (Invited).

C2. Flint CG 2013. Conservation connecting multiple scales of place. In W. Stewart, D. Williams, L. Kruger (eds.) *Place Based Conservation: Perspectives from the Social Sciences*. Dordrecht, Netherlands: Springer Publishing Company (pp. 35-44) (Invited).

C1. Luloff AE, DR Field, RS Krannich, CG Flint. 2007. A matrix approach for understanding people, fire, and forests. In TC Daniels, MS Carroll, C Mosely, C Raish (eds), *People, Fire, and Forests: A Synthesis of Wildfire Social Science,* Corvalis, OR: Oregon State Univ Press (pp. 207-216).

PEER-REVIEWED PUBLICATIONS – Submitted & Under Blind Review

Prentice, EW, H Qin, CG Flint. Mountain pine beetles and ecological imaginaries: The social construction of forest insect disturbance. Submitted for inclusion in upcoming Forest Health book.

Haeffner M, D Jackson-Smith, CG Flint. Explaining the water perception gap between local leaders and constituents in a socio-hydrological system. Submitted to *Water Resources Research* July 2017.

Hale R, CG Flint, D Jackson-Smith, J Endter-Wada. Integrating human and physical aspects of urban flood hazards. Resubmitted to *Journal of the American Water Resources Association* July 2017.

Mauerhofer V, T Ichinose, BD Blackwell, MR Willig, CG Flint, MS Krause, M Penker. Underuse of socio-ecological systems: A research agenda for addressing its challenges to biocultural diversity. Submitted to *Land Use Policy* June 2016.

PEER-REVIEWED PUBLICATIONS – In Progress for Future Submission

Flint CG, BA Miller*. Wellbeing in the Wasatch: Integrated assessment of values and vulnerabilities. *Society & Natural Resources*

Flint CG, A Boyd, T Paveglio, C Mascher**, E Wynn**, C Bullock. Newspaper coverage of water resources in the Intermountain West. *Journal of the American Water Resources Association*

Richardson, R, CG Flint. Propositions for the integration of social science and environmental health science. *Environmental Science and Policy.*

OTHER PUBLICATIONS (including STATEMENTS & TECHNICAL REPORTS)

Stakeholder Alignment Collaborative (B Bolukbasi*, N Berente, J Cutcher-Gershenfeld, CG Flint, M Haberman*, J King, E Knight, B Lawrence, E Masella, C Mcelroy*, B Mittleman, M Nolan*, M Radik, N Shin, CA Thompson, S Winter, I Zaslavsky; and *Principal Investigators for NSF EarthCube End-User PI Workshops:* ML Allison, D Arctur, J Arrigo, AK Aufdenkampe, J Bass, J Crowell, J Cutcher-Gershenfeld, M Daniels, S Diggs, C Duffy, Y Gil, B Gomez, S Graves, R Hazen, L Hsu, D Kinkade, K Lehnert, C Marone, D Middleton, A Noren, G Pearthree, M Ramamurthy, E Robinson, G Percivall, S Richard, C Suarez, D Walker. 2013. Open Data: Crediting a Culture of Cooperation (29 November) *Science,* Letters, v. 342: 1041-1042.

Krogman N, C Trentelman, J Brehm, CG Flint. 2013. Learning from the pros: The role of ISSRM, SNR, and IASNR in our careers. *Society and Natural Resources* 26(2).

Flint CG, S Gasteyer. 2007. Southern Illinois regional assessment project report and executive summary. 437pp. College of Agricultural, Consumer, and Environmental Sciences, University of Illinois at Urbana-Champaign. Available online at http://research.aces.illinois.edu/programs/sirap

Flint CG. 2007. Community response to climate change and forest disturbance. Pp. 127-132 in Joyce L, R Haynes, R White, RJ Barbour RJ. (tech. coords.) Bringing climate change into natural resource management: proceedings. Gen. Tech. Rep. PNW-GTR-706. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.

Flint CG, N Krogman. 2007. Maverick rural sociologists: blazing trails in interdisciplinary departments. *The Rural Sociologist* 27(2): 44-47.

Flint CG, AE Luloff, DR Field. 2003. Summary report. Pp. 81-86 in Cortner HJ, DR Field, P Jakes, JD Buthman (eds.), *Humans, Fires, and Forests – Social Science Applied to Fire Management*. Flagstaff, AZ: Ecological Restoration Institute.

Pitlick J, C Hauge [Flint], M Van Steeter, S Welter. 1992. *Laboratory Manual: Environmental Systems: Landforms and Soils*. Edina, MN: Burgess.

BOOK REVIEWS

CG Flint. 2004. Two Paths Toward Sustainable Development: Public Values in Canada and the United States, by BA Shindler, TM Beckley, MC Finley, (Corvallis, OR: Oregon State University Press, 2003). *Rural Sociology* 69(4): 578-581.

PUBLISHED DATA PRODUCTS

Flint, C., C. Mascher (2017). Utah Water Voices, HydroShare,
http://www.hydroshare.org/resource/250a21e6752b46a48167311b46fa7c71

Flint, C., C. Mascher (2017). Water News Media Analysis, HydroShare,
http://www.hydroshare.org/resource/2d2d46ad1f2a44b8822b41cbfc55e1e7

Flint, C., B. Miller, K. T. Dean (2017). Wasatch Mountain Voices, HydroShare,
http://www.hydroshare.org/resource/9a9ede7e2fbe455099c429898b39bb17

DOI: 10.1594/IEDA/100535
Title: EarthCube Stakeholder Survey Data
Lead Author: Cutcher-Gershenfeld, Joel
Collaborators: Baker K, Berente N, Carter D, DeChurch L, Flint C, Gant J, Gershenfeld G, Grant B, Haberman M, King JL, Knight E, Lawrence B, Lewis S, Lopez P, Mayernik M, McElroy C, Mittleman B, Nichol V, Nolan JM, Pak S, Ruengvisech D, Shin N, Thompson CA, Winter S, Zaslavsky I.
Date Available: 2015-04-15

GRANTS (Extramural funding unless indicated as internal)

Active Grants:

G20. 2017-2019. Documenting Human Health Impacts of Exposure to Microbial and Chemical Hazards in Reclaimed Wastewater Used in Urban Agriculture, Cache Valley. USDA NIFA. R Dupont, J Weidhaas, J McLean, R Martin, N Allen, CG Flint. $500,000.

G19. 2016-2021. NRT: Graduate Climate Adaptation Research to Enhance Education and Responsiveness of science at the management-policy interface (Grad-CAREER). National Science Foundation. N Huntly, P Belmont, C Flint, D Rosenberg, S Wang. $2,689,878

G18. 2012-2017. iUTAH: innovative Urban Transitions and Aridregion Hydro-sustainability. Funded by NSF-EPSeCOR. M Baker, J Ehleringer, J Horsburgh, Z Aanderud, C Strong, C Flint (co-PI in year 5 only). $20,000,000.

Previous Grants:

G17. 2012-2016. *Enabling Transformation in the Social Sciences, Geosciences, and Cyberinfrastructure through Stakeholder Alignment and New Institutional Theory, Methods, and Analytics*. National Science Foundation – INSPIRE Award. J Cutcher-Gershenfeld, CG Flint, M Haberman, B Lawrence, B Mittleman, M Nolan, J Unsworth, I Zaslavsky $800,000.

G16. 2014-2015. *The Role of Human Nature Relationship Concepts in the Governance of Socio-Ecological Systems in Mountain Areas,* Austrian Academy of Sciences-Earth System Sciences General Projects & Mountain Research Initiative. A Muhar, M Penker, G Greenwood, CG Flint €15,000, 13,000CF (approx. $30,000).

G15. 2014. *Representations in the News Media of Water Issues in the Mountain West Region*. Mountain West Center for Regional Studies. C Flint, M Dolan, C Bullock. $1,962. (Internal)

G14. 2012. *Systems Ecology in Principle and Practice: A Science and Technology Planning Activity at the Flathead Lake Biological Station*. Walton Family Foundation. J Stanford, CG Flint, HM Valett. $370,239 (subcontract from University of Montana $31,061).

G13. 2012. *Conservation Needs Assessment for the Upper Midwest & Great Lakes Landscape Conservation Cooperative*. CG Flint. US Fish and Wildlife Service. $35,818.

G12. 2012. *Comparing Agri-Environmental Policies and Farm-Level Conservation Implications in the EU and US*, University of Illinois at Urbana-Champaign European Union Center Faculty Research Development Grant, CG Flint. $3,500. (Internal)

G11. 2011-2014. *Reducing Agricultural Nitrate Losses in the Embarras River Watershed through Bioreactors, Constructed Wetlands, and Outreach*. USDA NIFA, MB David, CG Flint, R Cooke, G Czapar, L Gentry, R Hudson. $595,000.

G10. 2010-2011. *US-European Collaboration on the Influence of Cultural Ecosystem Values on Agricultural Landscapes and Decision Making in the Context of Climate and Policy Change*. Seed Grant, University of Illinois at Urbana-Champaign Environmental Change Institute, CG Flint, A Muhar, M Penker, O Aznar. $5,000. (Internal)

G9. 2010-2011. *US-European Collaboration on Cultural Ecosystem Values, Decision Making, and Agricultural Landscapes* Seed Grant, University of Illinois at Urbana-Champaign, College of ACES, Office of International Programs, CG Flint. $2,500. (Internal)

G8. 2009-2012. *Tile Drainage Modifications to Reduce Nitrate Losses in an Agricultural Watershed: Integration of Biophysical and Social Sciences with Extension and Education.* USDA CSREES National Integrated Water Quality Program, MB David, CG Flint, R Cooke, P Kalita, G Czapar, G McIsaac. $660,000.

G7. 2009-2011. *Doctoral Dissertation Research in DRMS: Local Ecological Knowledge and Perceptions of the Watershed Risk Context among Stakeholders in Southern Illinois Watershed.* National Science Foundation, C.G. Flint and L. BouFajreldin. $10,659.

G6. 2008-2009. *Doctoral Dissertation Research in Geography and Regional Science: The Impacts of Rural-to-urban Labor Migration on the Rural Environment in Chongqing, China*. National Science Foundation, CG Flint, H Qin. $12,000

G5. 2007-2011. *Impacts of Climate Change on Health Benefits of a Tribal Alaskan Resource: Integrating Traditional Ecological Knowledge with Risk Assessment Through Local Monitoring.* US Environmental Protection Agency, National Center for Environmental Research, Science to Achieve Results Program. MA Lila, CG Flint. $300,000.

G4. 2007-2008. *Re-Study of Community Response to Forest Disturbance on the Kenai Peninsula, Alaska* USDA Forest Service, Pacific Northwest Research Station. CG Flint. $75,000.

G3. 2006-2008. *Southern Illinois Community Assessment Project*. State of Illinois. CG Flint, S Gasteyer. $148,125.

G2. 2005-2007. *Community Response to Forest Disturbance by Bark Beetles in Colorado.* USDA Forest Service, Pacific Northwest Research Station. CG Flint. $120,000.

G1. 2002-2004. *Community Risk Perception and Action in Response to Forest Related Risks on the Kenai Peninsula in Alaska.* AE Luloff, CG Flint. USDA Forest Service, Pacific Northwest Research Station. $115,000.

INVITED PRESENTATIONS

Flint CG. Working well with others: Navigating Interdisciplinary and Transdisciplinary Research. Afromontane Research Unit Seminar and Workshop. June 29-30, 2017.

Flint CG. Wellbeing in the Wasach: Living with values and vulnerabilities in a mountain landscape. USU Sunrise Session. Salt Lake City, Utah. January 27, 2017.

Flint CG. Navigating complex human-nature relationships in Rocky Mountain and Wasatch communities. Restoring the West Conference, Logan, Utah. October 19, 2016.

Flint CG and Richardson RB. Integration of social sciences in environmental health sciences. US Environmental Protection Agency, Office of Research and Development. Raleigh, North Carolina. October 4-5, 2016.

Richardson RB and Flint CG. Strengthening the role of behavioral and social sciences. US Environmental Protection Agency, Office of Policy. Washington DC, September 9, 2016.

Flint CG. Engaging youth in community-environment research. Break the Cycle of Environmental Health Disparities Meeting, Atlanta, Georgia. April 19, 2016.

Flint CG. Ups and downs in Utah's Wasatch Mountains: Assessing values and vulnerabilities from multiple vantage points. Westminster College Mountain Studies Program. March 15, 2016.

Flint CG. Keynote. Framing the human dimensions of mountain landscapes: Integrating philosophies of science for a global mountain observatory. Perth III: Mountains of Our Future Earth. Perth, Scotland. Oct 3-9, 2015.

Flint CG. Assessing the geography of water risk perceptions in Utah. University of Idaho Geography Seminar Series. April 15, 2015.

Flint CG. Keynote. Boots on the ground: Navigating methods and experiences from mountain socio-cultural observation and science. Mountain Observatories – A Global Fair and Workshop on Social-Ecological Systems. Reno, Nevada, July 16, 2014.

Flint CG, L Girod*. Assessing regional conservation collaboration and priorities for the Upper Midwest & Great Lakes Region. Department of Forest and Wildlife Ecology, University of Wisconsin, Madison. November 9, 2012.

Flint CG. Challenges within the human dimensions of agricultural nitrogen management and water quality. American Society of Agronomy Meeting, Cincinnati, Ohio, October 23, 2012.

Flint CG. Exploring wilderness in regional contexts: Perceptions, practices & policies related to forest disturbance and environmental change in Alaska, Colorado and Illinois. Department of Geography, Illinois State University, April 20, 2012.

Flint CG, L BouFajreldin*. Navigating diverse perceptions of the environment among watershed stakeholders. 13th Biennial Governor's Conference on the Management of the Illinois River System. October 6, 2011.

Flint CG. Wilderness, climate change and ecosystem services from the perspective of forest landowners in Southern Illinois. Southern Illinois University, Sept 21, 2011.

Flint CG. Bark beetle blues: Community experiences with forest disturbance by insects. Conservation and Climate Change Lecture Series. University of Montana, March 8, 2011.

Flint CG. Cultural ecosystem services: Exploring both sides of the coin of the realm. Department of Society and Conservation. University of Montana, March 7, 2011.

Flint CG. Farm operator perspectives on water quality. Champaign County Soil and Water Conservation District Annual Meeting, January 20, 2011.

Flint CG. Scientific methods for cultural service assessment. A Community on Ecosystem Services, Phoenix, Arizona, Dec 6-9, 2010.

Flint CG. Landscape-based cultural ecosystem services and integration into the concept of ecosystem services. Kerner von Marilaun Workshop on Landscape-Based Cultural Ecosystem Services, Lunz, Austria, Nov 2, 2009.

Flint CG. Community perspectives on pine beetle impacts and management in Colorado. Western Forest Insect Work Conference, Boulder Colorado, April 8, 2008.

Flint CG. A matrix approach to understanding humans, fire, and forests. Human Dimensions of Wildfire Workshop, Fort Collins, Colorado, October 24, 2007.

Flint CG, M Daab*. Colorado community response to bark beetles. Colorado Bark Beetle Cooperative Workshop, Granby. Colorado, September 20, 2007.

Flint CG. Community dimensions of forest disturbance by insects. Louisiana Natural Resource Symposium, Louisiana State University, Baton Rouge, Louisiana, August 13, 2007.

Flint CG. Honoring our roots: Looking back to move forward. Invited Panelist, Rural Sociological Society Annual Meeting, Santa Clara, California, August 3, 2007.

Flint CG. Multi-regional analysis of community response to ecosystem disturbance. Human Dimensions of Environmental Systems Seminar, University of Illinois at Urbana-Champaign, October 13, 2005.

Flint CG. Community response to climate change and forest disturbance. Bringing Climate into Natural Resource Management Workshop, Portland, Oregon, June 29, 2005.

Flint CG. Vulnerability, risk perception, and community action: Local response to forest disturbance on Alaska's Kenai Peninsula. Penn State University Geography Department Seminar Series, University Park, Pennsylvania, February 4, 2005.

Flint CG. The Kenai Peninsula spruce bark beetle outbreak: Diverse community responses and lessons for forest management. National Forest Health Protection Meeting, Bend, Oregon, October 21, 2004.

Flint CG. Socio-economic impacts of the spruce bark beetle on the Kenai Peninsula: Through community voices. The Interagency Forest Ecology Study Team Symposium on the Changing Alaskan Forest Ecosystem, Homer, Alaska, February 26, 2004.

Flint CG. Community risk perception and response to changing forest conditions on the Kenai Peninsula. Regional Inventory and Monitoring Meeting, USDA Forest Service, Juneau, Alaska, February 24, 2004.

Flint CG. Incorporating risk experience into logging risk assessments. Symposium on Managing Logging Risk and Liability. Pennsylvania State University, University Park, PA. Oct. 2, 2003.

PRESENTATIONS AT PROFESSIONAL MEETINGS OR OTHER VENUES

Flint CG, A Boyd, T Paveglio, C Mascher**, E Wynn**. Trends in coverage of water issues in newspapers from the Intermountain West, USA. International Symposium for Society and Resource Management. Umeå, Sweden, June 22, 2017.

Dean* KT, CG Flint, BA Miller*. The impact of social and engineering research on water management decisions in Utah, USA. International Symposium for Society and Resource Management. Umeå, Sweden, June 21, 2017.

Miller* BA, CG Flint, KT Dean*. The source, process, & outcome of water benefits & threats associated with the Wasatch Mountains. International Symposium for Society and Resource Management. Umeå, Sweden, June 21, 2017.

Jones AS, JS Horsburgh, CG Flint, D Jackson-Smigh. Social water science data: Dimensions, data management, and visualization. American Geophysical Union Fall Meeting, San Francisco, CA, Dec 2016.

Martin, R., Flint CG. Cache Valley air quality: What we've learned in the last 16 years, from scientific and social perspectives. CEE and Water Seminar, Utah State University, Logan, UT, Nov 2016.

Flint CG. Getting beyond science: Creative tools for assessing the human dimensions of water. iUTAH All Hands Meeting. Salt Lake City, UT, July 15, 2016.

Flint CG, Y Yoshida*, M Dolan. Dimensions of human-nature relationships among Illinois farmers. International Association for People-Environment Studies. Lund, Sweden June 30, 2016.

Miller* BA, CG Flint, KT Dean**. Looking for a local water meta-narrative in Northern Utah. 2016 International Symposium for Society and Resource Management. Houghton, MI. June 25, 2016.

Miller* BA, CG Flint, D Jackson-Smith. The influence of local waterways, recreational activity, and community participation on quality of life and conservation policy perspectives. 2016 River Management Symposium and Outdoor Recreation Conference. Boise, ID. May 19, 2016.

Holyoak** G, M Holyoak**, CG Flint. Health vulnerabilities of Utah's Immigrant Children: Breaking the Cycle. Break the Cycle of Environmental Health Disparities Meeting, Atlanta, Georgia. April 18, 2016.

Flint CG. Undergraduate teams for community-based research: Creative opportunities and institutional challenges. Annual Meeting of the Association of American Geographers. San Francisco, CA. March 30, 2016.

Flint CG, Q Cannon**, KT Dean**, A Brown**, E Wynn**, C Mascher**, A Hancock**, S Hudson**, A Uzunian*, B Unger. A digital narrative of values and vulnerabilities in Utah's Wasatch Range. Perth III: Mountains of Our Future Earth Conference. Perth, Scotland, UK. October 6, 2015.

Muhar A, M Penker, CG Flint, C Tucker. Human-nature relationship concepts in the governance of socio-ecological systems in mountain areas: Synthesis from a workshop. Perth III: Mountains of Our Future Earth Conference. Perth, Scotland, UK. October 7, 2015.

Flint CG, C Sisneros*, C Bullock, A Boyd, T Paveglio. Is (rural) locality lost in newspaper coverage of water resources in Utah and Idaho? Rural Sociological Society Annual Meeting. Madison, Wisconsin, August 6-9, 2015.

Flint CG, R Hale, A Armstrong*, T Carothers*, J Endter-Wada, A Hall*, D Jackson-Smith, S Yeo. Assessing the influence of geographic and socio-demographic factors on water risk perceptions in Utah. International Symposium for Society & Resource Management. Charleston, South Carolina. June 16, 2015.

Flint CG, K Böck*, Y Yoshida*, M Dolan*. Human-nature relationships and cross-cultural watershed research. International Symposium for Society & Resource Management. Hannover, Germany, June 11, 2014.

Flint CG. Exploring synergies around mountain governance and social dynamics. International Symposium for Society & Resource Management. Hannover, Germany, June 11, 2014.

Penker M, CG Flint, A Muhar, M Braito*, K Böck*, I Kunze, Y Yoshida*. Concepts of human-nature relationships and the governance of social-ecological systems. International Symposium for Society & Resource Management. Hannover, Germany, June 11, 2014.

Braito M*, M Penker, A Muhar, S Vogel, M Larcher, CG Flint. Human-nature relationships and values behind individual and collective photovoltaic engagement. International Symposium for Society & Resource Management. Hannover, Germany, June 11, 2014

Böck K*, M Braito*, CG Flint, A Muhar, MPenker, S Muhar. Challenges of developing narratives for investigating human-nature relationships. International Symposium for Society & Resource Management. Hannover, Germany, June 11, 2014

Flint CG, A Muhar, M Penker, M Braito*, S Muhar, K Böck*, I Kunze, Y Yoshida*. Contemporary typologies of human-nature relationships and the ecosystem services concept: Exploring management and governance connections. An Intersection of Society & Nature. Uppsala University, Uppsala, Sweden, October 2, 2013.

Flint CG, J Stanford, M Lorang, B Ellis, G Liukart, J Duffield, H Naughton. Integrating stakeholders and systems ecology in research and applications in North American mountain river and lake landscapes. International Symposium for Society and Resource Management, Estes Park, Colorado, June 6, 2013.

Dolan* MK, CG Flint. Navigating complexity: Farmer perspectives on water quality in two central Illinois watersheds. International Symposium for Society and Resource Management, Estes Park, Colorado, June 6, 2013.

Flint CG, H Qin. Tracing community responses to bark beetles and fire across regions and time. AFE Fire Congress. Portland, Oregon. December 4, 2012.

Girod* L, CG Flint. Mixed methods approaches to identifying shared Landscape Conservation Cooperative priorities. Pathways to Success Conference: Integrating Human Dimensions into Fish and Wildlife Management. Breckenridge, Colorado. September 25, 2012.

Flint CG Bridging the gap between farmers and agricultural water conservation policy: Challenges and opportunities. Rural Sociological Society, Chicago, Illinois, July 28, 2012.

Flint CG, MB David. The socio-bio-geo-chemical science and engineering of tile drained agricultural watersheds in Illinois: Interdisciplinary opportunities and limits. Rural Sociological Society, Chicago, Illinois, July 27, 2012.

Flint CG, Y Yoshida*, A Muhar, I Kunze, M Penker. Human nature relationships and landscape engagement. International Symposium for Society and Resource Management, Edmonton, Alberta, June 18, 2012.

Girod* L, CG.Flint. Limits to conservation collaboration in the Upper Midwest & Great Lakes Region. International Symposium for Society and Resource Management, Edmonton, Alberta, June 21, 2012.

Flint CG. An interdisciplinary field methods course on suburban detention pond water quality, NACTA Annual Conference, Edmonton, Alberta. June 16, 2011.

David MB, Flint CG. Detention ponds in Champaign: Water quality and homeowner perceptions. Water Quality Seminar Series, Institute of Natural Resource Sustainability, University of Illinois at Urbana-Champaign, Feb 15, 2011.

Flint CG. Perceptions of ecosystem services and threats to well-being from an Alaska Native community. A Community on Ecosystem Services, Phoenix, Arizona, Dec 6, 2010.

David M, C Flint, G Czapar, R Cooke, G McIsaac, P Kalita, L Gentry, M Dolan*. Tile modification project on the Salt Fork River Watershed: Addressing nitrate loss through engineering and outreach. Illinois Water Conference, Springfield, Illinois, October 10, 2010.

Flint CG. Traditional knowledge and perceptions of ecosystem and community well-being in three Alaska Native communities. International Symposium for Society and Resource Management, Corpus Christie, Texas, June 8, 2010.

Qin* H, Flint CG. A multi-method assessment of the community context of human response to forest disturbance by mountain pine beetles in Colorado. International Symposium for Society and Resource Management, Corpus Christie, Texas, June 7, 2010.

Hendee* JT, CG Flint. Forest landowner perspectives on ecosystem services in Southern Illinois. International Symposium for Society and Resource Management, Corpus Christi, Texas, June 8, 2010.

BouFajreldin* L, CG Flint. What is the relationship between local ecological knowledge and perceptions of watershed risks? International Symposium for Society and Resource Management, Corpus Christie, Texas, June 7, 2010.

Flint CG, MA Lila. Alaskan subsistence resources and communities at risk: Integrating traditional ecological knowledge, risk perception assessment, and plant science in participatory research. Annual Meeting of the Rural Sociological Society, Madison, Wisconsin, Aug 1, 2009.

BouFajreldin* L, CG Flint. Local knowledge and risk perception in watershed management. Annual Meeting of the Rural Sociological Society, Madison, Wisconsin, Aug 2, 2009.

Ganning* J, CG Flint. Constructing a community-level amenity index. Annual Meeting of the Rural Sociological Society, Madison, Wisconsin, Aug 2, 2009.

Qin* H, CG Flint. Rural labor out-migration, community development, and rural environmental conservation in Chongqing Municipality, Southwest China. Annual Meeting of the Society for Conservation Biology, Beijing, China, July 12, 2009.

Qin* H, CG Flint. Rural-to-urban migration, household livelihoods and the rural environment in Chongqing, Southwest China. Annual Meeting of the Association of American Geographers, Las Vegas, Nevada, March 24, 2009.

Flint CG, S Chi*, Qin* H, AE Luloff. Temporal changes and spatial variations in local attitudes on forest disturbance by insects in Alaska. Annual Meeting of the Association of American Geographers, Las Vegas, Nevada, March 23, 2009.

Flint CG, H Qin*, J Ganning*. From the resort to the ranch: North central Colorado perspectives on mountain pine beetles and forest disturbance. International Symposium for Society and Resource Management, Burlington, Vermont, June 14, 2008.

Flint CG. Supervising independent undergraduate student research. International Symposium for Society and Resource Management, Burlington, Vermont, June 10, 2008.

Daab* M, CG Flint. Public awareness of invasive plant species in a rapidly shifting landscape. International Symposium for Society and Resource Management, Burlington, Vermont, June 13, 2008

Flint CG. Honoring our roots: A forward-looking review of Field and Burch's *Rural Sociology and the Environment*. Annual Meeting of the Rural Sociological Society in Santa Clara, CA August 3, 2007.

Flint CG, AE Luloff. Community in a regional context. Annual Meeting of the Rural Sociological Society in Santa Clara, CA August 4, 2007.

Ganning* J, H Qin*, CG Flint, S Gasteyer. Constructing typologies in community research. Annual Meeting of the Rural Sociological Society in Santa Clara, CA August 4, 2007.

Flint CG. The geographic distribution of Community Emergency Response Teams in the US. Annual Hazards Workshop - Researchers Meeting in Boulder, CO July 10, 2007.

Flint CG. Forging New Relationships: Stakeholder response to forest disturbance in Northern Colorado. International Symposium on Society and Resource Management in Park City, UT June 18, 2007.

Qin* H, CG Flint. Rural-to-urban migration and the rural environment in China: A Comprehensive Framework for Migration and Environment Research. International Symposium on Society and Resource Management in Park City, UT June 19, 2007.

Daab* M, CG Flint. Public awareness of invasive plant species and forest disturbance in Northern Colorado. International Symposium on Society and Resource Management in Park City, UT June 20, 2007.

Flint CG, MA Brennan. The rural context of disaster: Exploring the role of Community Emergency Response Teams. Annual Meeting of the Rural Sociological Society in Louisville, KY August 12, 2006.

Flint CG. Changing forest disturbance regimes and local risk perceptions in Homer, Alaska. International Symposia on Society and Resource Management in Vancouver, BC. June 7, 2006.

Flint CG. Incorporating diverse community contexts into forest management. Annual Meeting of the Rural Sociological Society Meeting in Tampa, FL. Aug 12, 2005.

Flint CG, MA Brennan. Local culture and rural development: Findings from Ireland, Pennsylvania, and Alaska. Annual Meeting of the Rural Sociological Society in Tampa, FL. Aug 13, 2005.

Flint CG. Community response to forest risks on Alaska's Kenai Peninsula. International Symposia on Society and Resource Management in Keystone, CO. June 3, 2004.

Flint C. International water resource conflict, international water law and The Nile River. Annual Meeting of the Association of American Geographers. Atlanta, GA. March 1993.

POSTER PRESENTATIONS AT PROFESSIONAL MEETINGS

David M, C Flint, G Czapar, R Cooke, G McIsaac, P Kalita, L Gentry, M Dolan*. Managing nitrogen in the corn-belt: Opportunities for tile-drained croplands. National Water Quality Meeting. February 1, 2011.

Rinaldi** J, CG Flint. The roles of Community Emergency Response Teams in Illinois. Annual Hazards Research and Applications Workshop in Boulder, CO. July 10, 2007.

McCoy** C, CG Flint. Environmental themes in papers presented at Rural Sociological Society Meetings, 1960-2005. Annual Meeting of the Rural Sociological Society in Louisville, KY. Aug 12, 2006.

PROFESSIONAL SERVICES – National and International

2018-2021	Treasurer (Elected), International Association for Society and Natural Resources
2017-2018	Program Committee Chair, International Symposium for Society and Resource Management 2018, Snowbird, Utah,
2016-2019	Advisory Board Member, Afromontane Research Unit, University of the Free State, South Africa
2014-2017	Appointed Member of the US Environmental Protection Agency Board of Scientific Counselors, Executive Committee; Vice Chair, Sustainable & Healthy Communities Subcommittee
2016	NSF Career Grant Review
2015	NSF Graduate Research Fellowship Program Review
2014	National Research Council Reviewer of Report *Sustainability in Decision Making: Tools and Approaches for U.S. EPA.*
2014	NSF Grant Review, Decision, Risk, and Management Sciences Program
2013-2016	Elected Council Member, International Association for Society & Natural Resources
2013-2015	Professional Development Committee Chair, International Association for Society and Natural Resources
2013-2014	External Advisor to Blackfeet Community College project: *Spirit of the Land of the Triple Divide: Student Led Initiative on Ecosystems and Community Learning*
2013	Chair, Student Paper Competition, International Symposium for Society and Resource Management, Estes Park, Colorado, June 4-8, 2013
2012-2018	Associate Editor, *Society & Natural Resources*
2011-2012	Chair of Membership Committee (and appointed to Council), Rural Sociological Society
2010-2011	Program Co-Chair, International Symposium for Society and Resource Management, Madison, Wisconsin, June 4-8, 2011
2009-2010	Member of Scientific Advisory Committee, International Association for Society and Natural Resources
2009-2010	Chair, Rural Policy Research and Interest Group, Rural Sociological Society
2008	NSF Grant Review, Social, Behavioral and Economic Sciences Directorate
2006-2008	Elected Council Member, Rural Sociological Society

2006-2007 Scientific Advisory Committee, International Symposium for Society and Resource Management

2005-2007 Chair, Natural Resources Research Group, Rural Sociological Society

Manuscript reviewer for professional journals:
Biodiversity and Conservation, Biological Invasions, Biosecurity and Bioterrorism, Canadian Journal of Forest Resources, Community Development, Conservation Biology, Conservation Letters, Environmental Conservation, Environmental Management, Environmental Engineering and Management, Environment and Society, Florida Extension Publication Series, Forest Policy and Economics, GeoJournal, Journal of the American Water Resources Association, Journal of Applied Geography, Journal of Environmental Planning and Management, Journal of Forestry, Journal of Historical Geography, Journal of International Development, Journal of Rural Social Science, Journal of Rural Studies, Land Use Policy, Landscape Ecology, Landscape & Urban Planning, Natural Hazards, Provention Consortium, Risk Analysis, Rural Society, Rural Sociology, Social Currents, Society and Natural Resources, Southern Rural Sociology, Water, Water Resources Research

UNIVERSITY SERVICES

2015-2018 Faculty Senator (Elected), College of Humanities & Social Sciences, Utah State Univ.,

2013-present Graduate Executive Committee, Sociology Program, Utah State University

PARTICIPATION IN NATIONAL & INTERNATIONAL SCHOLARLY ACTIVITIES

2015-2016 Faculty mentor in the Break the Cycle Program on Children's Environmental Health, led by the Southeast Pediatric Environmental Health Specialty Unit and Innovative Solutions on Disadvantage & Disability

2013-present Participant in Mountain Research Initiative on Building a Global Network on Mountain Observatories and Mountain Social-Ecological System Governance

2009-present Interdisciplinary collaboration with BOKU University of Natural Resources & Life Sciences, Institute of Landscape Development, Recreation and Conservation Planning and DOKNE Doctoral Program in Sustainability

2007-present WERA-1010. Multi-State Committee on Improving Rural and Agricultural Surveys

May 2015 Workshop on Human-Nature Relationships and Governance in Mountain Socio-Ecological Systems. Held in the Lungau Biosphere Reserve, Austria. Coordinators: Andreas Muhar (BOKU), Marianne Penker (BOKU), and Courtney Flint (USU).

May 2015 RiverScapes and Large Lake Initiatives. Workshops held at the Flathead Lake Biological Station.

2012-2015 *Systems Ecology of Rivers and Lakes in the Western US*. Flathead Lake Biological Station. Collaborator. Research funds from Walton Foundation.

2009-2014 NCDC-221. Multi-State Committee on Causes and Consequences of Individual and Collective Actions to Protect Water Resources

2012-2014 Leadership Committee for NSF Research Coordination Network on Complex Mountain Landscapes and External Advisor to the Blackfeet Community College in Montana on Student-Led Community Engagement on Mountain Water and Landscape Change.

2009 Interdisciplinary US-European Workshop on Landscape-based Cultural Ecosystem Services, Lunz, Austria, November, 1-6, 2009, Funded by the Austrian Federal Ministry of Science and Research, the Austrian Academy of Sciences, and the US NSF

2008-2009 Disaster Resilient Communities. Working Group for the Extension Disaster Educator Network Community of Practice, USDA CSREES, Smith-Lever Funds.

TEACHING

Courses Taught

Advanced Methods of Social Research (Graduate)	Utah State University
Sociology of the Environment & Natural Resources	Utah State University
Interdisciplinary Environmental Vulnerability (Graduate)	Utah State University
Environment and Society	Univ of Illinois at Urbana-Champaign
Community and Natural Resources (Graduate)	Univ of Illinois at Urbana-Champaign
Field Methods – Human Dimensions of Natural Resources	Univ of Illinois at Urbana-Champaign
Field Methods – Suburban Ponds	Univ of Illinois at Urbana-Champaign
Field Methods – Mountain Ecosystem Management	Univ of Illinois at Urbana-Champaign
Issues in Geography	Kennesaw State University
Environmental Systems: Climate and Vegetation (lab)	Univ of Colorado at Boulder
Environmental Systems: Landforms and Soils (lab)	Univ of Colorado at Boulder
World Regional Geography	Univ of Colorado at Boulder
Introduction to Human Geography	Univ of Colorado at Boulder

Graduate Students and Post-Doctoral Fellows – Advising Role (current position or last know

Post-Doc
Melissa Haeffner 2016-present (Sociology USU, iUTAH)
Hua (James) Qin 2009-2010 (UIUC, now at University of Missouri)

PhD
Brett Miller 2016-present (Sociology, USU)
Mallory Dolan 2013-2014 (USU, now at USDA)
Lama BouFajreldin 2006-2012 (UIUC, now at Illinois Natural History Survey)
Hua (James) Qin 2006-2009 (UIUC, now at University of Missouri)

Masters
Kent Taylor Dean 2016-present (Sociology USU)
Xiaohan Zhang 2012-2013 (UIUC)
Yuki Yoshida 2011-2013 (UIUC, now at University of Tokyo)
Lyndsey Girod 2011-2013 (UIUC, now at IL Dep of Natl Res)
Nathaniel Uchtmann 2009-11 (UIUC Med Sch)
Jake Hendee 2009-11 (UIUC, now Consulting Forester in Canada)
Mallory Dolan 2009-11 (UIUC, USU, now at USDA)
Michael Daab 2006-08 (UIUC, now at Champaign Co Forest Preserve District)

Participation in Graduate Committees

PhD
Shawn Olson 2014-2017 (USU, now at Evergreen College)
Michael Braito 2013-present (Institute of Landscape Development, Recreation and Conservation Planning, BOKU University of Natural Resources and Life Sciences, Vienna, Austria)
Kersten Böck 2015-2017 (Institute of Hydrobiology and Aquatic Ecosystem Management, BOKU University of Natural Resources and Life Sciences, Vienna, Austria)
Saleh Ahmed 2013-2014 (Sociology, USU, now at University of Arizona)
Andrea Armstrong 2013-2015 (Sociology, USU, now at Lafayette University)
Lisa Green 2013-2014 (Environment & Society, USU)
Marianna Strzelecka 2007-2012 (UIUC, now at University of North Texas)
Ross Hanig 2010-2013 (UIUC, now at University of Portland)
Divya Chandrasekhar 2009-2010 (UIUC, now at University of Utah)
Melinda Merrick 2005-2010 (UIUC, now at Northeastern Illinois University)

Masters
Alexandria Dolezal 2017-present (Environment & Society, USU)
Emily Esplin 2017-present (Geography, USU)
Jacqueline Keating 2015-2017 (USU Sociology, now at US Fish & Wildlife Service)
Chris Sisneros 2014-2015 (USU Sociology, now at Intermountain Health Care)
Jamilee Holmstead 2013-2015 (USU Sociology)
Piper Blotter 2013-2014 (USU Political Science)
Emily (Price) Kalnicky 2006-2008 (University of Illinois, now at Phipps Conservancy & Botanic Garden)

Undergraduate Research Mentees (current)
Elizabeth Wynn (USU Psychology)

Undergraduate Research Mentees (past – majors at time of mentorship)
Vivianne Baji (USU Applied Economics)
Nathan Banion (UIUC NRES)
Alexander Brown (USU Mech Engineering)
Clayton Burrus (USU Sociology)
Quinton Cannon (USU Psychology, Business)
Jared Dangerfield (USU Journalism)
Kent Taylor Dean (USU Sociology)
Danielle Gomm (USU Eng & Soc St Teaching)
Abigail Hancock (USU Geography)
Kaitlyn Hicks (Weber State, Geography)
Grant Holyoak (USU Sociology)
Morgann Holyoak (USU Education)
Kaitlyn Hornik (UIUC NRES)
Sam Hudson (USU Sociology)
Christine Johnson (UIUC NRES)
Emma Jones (USU Landscape Architecture)
Jamie Latsch (UIUC NRES)
Caitlyn Liechty (USU Social Work)
Thomas Lyons (USU Social Work
Charles Mascher (USU Mgmt Info Systems)
Zack Oldroyd (USU English)
Karlee Peterson (USU International Finance)

Arianna Morazan (USU Social Work)
MacKenzie Pabst (USU Social Work)
Amelia Reed (USU unknown)
Molly Roche (UIUC NRES)
Dan Smith (USU Sociology)
Rhys Stephens (USU Hydroponics)
Bethany Unger (USU Wildlife)
Phillip Andre Valle (Weber State, Health Mgmt)
Tori Valora (USU Psychology)
Hailey Wall (USU Landscape Arch)

John R. "Jack" Fowle III, Ph.D., D.A.B.T.
Principal, Science To Inform, L.L.C.
155 Terrells Mountain
Pittsboro, NC 27312
Phone: (919) 942-2810
Mobile: (919) 360-8280
Email: **jackfowle@aol.com**

Profile: Independent consultant in regulatory science, toxicology and risk assessment. Retired from EPA as a senior environmental science manager with 37 years experience in research and development, risk assessment, science policy and management. Proven record of strong strategic sense and establishing and nurturing mission focused science programs to inform decisions. Excellent communication and leadership skills. Commitment to scientific excellence. National network of professional contacts in and out of government. Chair professional society and community service committees.

WORK EXPERIENCE:

Principal, Science To Inform, L.L.C. 1/2012 - Present – Expertise in regulatory science, Toxicity Testing in the 21st Century, risk assessment, pesticides safety assessment, toxicology and science policy. Advise clients and support efforts to advance the development, adoption and use of alternatives to animal tests. Clients include Johns Hopkins University Center for Alternatives to Animal Tests, Institute for In Vitro Sciences, British American Tobacco, MB Research, Syngenta, and the American Chemical Society.

Deputy Director, Health Effects Division, Office of Pesticide Programs (OPP), Office of Chemical Safety and Pollution Prevention, U.S. Environmental Protection Agency 5/2009 – 12/2011

Directed a multidisciplinary group of scientists conducting health risk assessment activities supporting the re-registration of existing pesticides. Managed technical teams developing assessments of various high visibility, high priority efforts such as the atrazine and endosulfan risk assessments, and the pyrethroid cumulative risk assessment project. Engaged scientific communities both within OPP and at the broader national and international scientific community levels by providing scientific and programmatic leadership on activities such as efforts to implement the Tox 21 vision to improve risk assessment. Helped manage the integration of new toxicological approaches into OPP's human health risk assessments, including coordination of the Interagency Coordinating Committee for the Validation of Alternative Methods (ICCVAM) activities across EPA. Co-Chaired the OECD Validation Method Group-Non Animal (VMG-NA) Committee for assessing endocrine disrupting chemicals in 2011.

Acting Director, Neurotoxicology Division, National Health and Environmental Effects Research Laboratory, U.S. Environmental Protection Agency
8/2007 – 4/2009

Directed a multi-disciplinary staff of over 50 health professionals to conduct research on the ability of environmental pollutants to damage the nervous system and the brain. Provided scientific and policy guidance and direction to the staff to ensure cutting edge research focused on EPA's mission by informing Agency decisions, primarily through improving the Agency's capacity to conduct risk assessment. Utilized network of contacts with senior Agency officials to ensure that work was responsive to the most pressing Agency needs. Managed the Division's budget and operations and worked with Branch Chiefs and Administrative Staff to ensure compliance with Federal Managers Financial Integrity Act (FMFIA), Government Performance and Results Act (GPRA), and other requirements. As part of the senior laboratory management team developed ways to maintain program focus and productivity while sustaining a 20 % cut in FTEs and a loss of funds for extramural support.

Assistant Lab Director for Toxics & Pesticides, National Health and Environmental Effects Research Laboratory U.S. Environmental Protection Agency
2/2002 - 8/2007

Directed, planned and managed EPA's Toxic Substances, Pesticides and Endocrine Disrupting effects research program. Matrix managed 120 FTEs. Multiyear Plan lead responsible for ORD's overall research in support of the Office of Prevention, Pesticides and Toxic Substances (OPPTS). Directed the development of the Safe Pesticides/Safe Products (SP2) Multiyear Plan. Directed the development of the Effects Laboratory's SP2 Implementation Plan ensuring that key regulatory program leadership and technical staff were engaged with key laboratory managers and technical staff. Laboratory lead for biotechnology program development. Member Computational Toxicology Research Program Design and Implementation Teams. Laboratory lead for Nanotechnology Research Program Design Team.

Deputy Director, Office of the Science Advisory Board, U.S. Environmental Protection Agency
9/1995 - 2/2002

Directed the multi-disciplinary staff of health, ecology and social science professionals who operated EPA's Science Advisory Board. Managed the Office's budget and operations (e.g. compliance with FMFIA, GPRA, Federal Advisory Committee Act (FACA) requirements). Managed the project and member selection process including world-renowned experts in the biological, chemical, physical and social sciences. Served as Designated Federal Officer for the Research Strategies Advisory Committee. Managed committee operations and interactions with the Agency and Congress. Co-chaired EPA's Science Policy Council's risk characterization guidance implementation. Member Risk Assessment Forum.

Health Advisor to the Assistant Administrator for Research and Development, **U.S. Environmental Protection Agency**
1/1995 - 8/1995

Advised the Assistant Administrator for Research and Development on a wide range of health issues with special emphasis on Congressional liaison and Title III of H.R. 9 "The Contract with America."

Science Advisor to Senator Daniel Patrick Moynihan, **U.S. Environmental Protection Agency**
1/1992 - 12/1994

Advised Senator Moynihan and his staff about the science issues facing Congress. Drafted legislation and negotiated with staff of other Senators to develop workable legislative packages. Negotiated with House staff members to reconcile differences between Senate passed and House passed bills. Met and regularly discussed Senator Moynihan's science legislative goals and interests with the press.

Associate Laboratory Director for Water Health Effects Research Lab, **U.S. Environmental Protection Agency**
1/1989 - 12/1991

Planned and managed EPA's $2 million Water Health Effects Research Program. Coordinated EPA's Office of Research and Development's World Health Organization program. Helped plan and implement laboratory organization. Helped develop policies for laboratory operations. Chaired EPA ad hoc Arsenic Recommendation Workgroup in response to the Bull Run Coalition Lawsuit (June 1989 to June 1990). Acting Deputy Health Effects Research Laboratory Director from January 1989 until August 1989.

Health Science Advisor to the Assistant Administrator for Research and Development, U.S. Environmental Protection Agency
1/1988 - 1/1989

Advised the Assistant Administrator for Research and Development on health issues. Planned and managed the consolidation of World Health Organization efforts in ORD. Managed the development of ORD policy for the use of biologic markers in Agency decision-making. Developed and managed a $1.3 million cooperative agreement with the National Academy of Sciences to identify biomarkers suitable for use in human biomonitoring and to develop consensus for their use.

Director Environmental Health Research Staff, **U.S. Environmental Protection Agency**
11/1984 - 12/1988

Directed and managed a multi-disciplinary team of health science administrators in the planning and budgeting of EPA's $40 million plus annual health research program.

Congressional Liaison to Congressman Albert D. Gore (EPA Detailee), U.S. Environmental Protection Agency
9/1984 - 11/1984

Science Advisor to Congressman Albert D. Gore, Jr. and the Staff Director of the Investigation and Oversight Subcommittee. Participated in fact finding tour of the California Biotechnology industry. Briefed Congressman Gore and helped plan and staff subcommittee hearings.

ORD Biotechnology Coordinator, U.S. Environmental Protection Agency
11/1983 - 9/1984

Planned and managed the development of ORD's biotechnology research program. Organized and conducted workshops with the American Association for the Advancement of Science (AAAS) to: 1) identify program office research needs, 2) peer review research plans, and 3) explore short-term ecological effects of biotechnology products. Coordinated activities of EPA's five research offices to: 1) identify research needs, 2) identify personnel and resource requirements, 3) define facility requirements, 4) compare current resources with needs, and 5) develop options and recommendations. Developed and monitored three contracts totaling $102K. Prepared three internal reports and published one article. Prepared and defended resource requests. The plan provided the basis for a successful budget initiative in FY 1985 leading to a program funded for 8 years. EPA representative on the NIH Recombinant DNA Advisory Committee and to its Deliberate Release Workgroup. Member of the U.S. Delegation to the Organization for Economic Cooperation and Development (OECD) Biotechnology Risk Assessment Workgroup, attending meetings in Paris and Washington. Helped negotiate and write the OECD Biotechnology Policy document.

Geneticist, Reproductive Effects Assessment Group, ORD, U.S. Environmental Protection Agency 8/1980 - 11/1983

Assessed the mutagenic potential of environmental pollutants and defended these assessments before Science Advisory Board panels. Helped develop Agency-wide mutagenicity risk assessment guidelines. Participated in intra- and inter-Agency technical committees and workgroups to exchange information and formulate scientific assessment policy and procedures. Designed and managed contracts to improve risk assessment capabilities.

Geneticist, Carcinogen Assessment Group, U.S. Environmental Protection Agency
4/1979 - 8/1980

Evaluated mutagenic potential of chemicals for cancer risk. Reviewed the assessments prepared by contractors. Prepared "List of Carcinogens" in support of the labeling rule under Section 6 of the Toxic Substances Control Act.

Other Positions

6/1970 - 4/1979

Worked for a contractor to the Environmental Protection Agency, taught introductory genetics at George Washington University, Park Ranger Naturalist for the National Park Service.

Selected Awards and Honors

EPA Distinguished Career Service Award and Gold Medal (2011), Bronze Medal for the Integrated Risk Project (1999), Bronze Medal for Promoting Stronger Use of Science in Agency Decisions (2004), Bronze Medal for ORD Computational Toxicology Design Team (2004), Bronze Medal for the ORD Biotechnology Research Program Steering Committee (2006). ORD Achievement Award for Special Act – Development of the List of Carcinogens (1980), ORD Achievement Award for Special Act –Development of ORD Biotechnology R&D Program (1984), ORD Achievement Award for Special Act – Development of Biomarker Research Strategy (1989), ORD Achievement Award for Special Act –Consolidation of Drinking Water Health Effects Research in RTP (1990), ORD Achievement Award for Special Act – Arsenic Research Team (1991).

EDUCATION

George Washington University
Washington, DC
Doctorate - 1/1980
Major: Zoology (Genetics)

George Washington University
Washington, DC
Bachelor's Degree - 5/1971
124 Semester Hours
Major: Zoology

CERTIFICATION

Diplomate of the American Board of Toxicology, November 2007 to Present

JOB RELATED TRAINING

Federal Executive Institute Leadership for a Democratic Society, February 2000 Various Classes from the OPM Western Management Center on Management and Leadership

LANGUAGES

Read, write and speak French at the novice level

PROFESSIONAL SOCIETY MEMBERSHIP
American Association for the Advancement of Sciences, Member

American Chemical Society, Member. Consultant to Committee for Environmental Information 2012. Adjunct Member of the to Committee for Environmental Information 2014, Vice Chair 2015-2016, member 2016-2018. Led the team that drafted Endocrine Disruptor Policy Statement 2015. Member of the writing teams for the Chemical Management policy statements 2013 and 2016.

American Society for Cellular and Computational Toxicology, Member, Fairfax, VA. 2011 to present. Board of Directors, September 2012 to present.

Sigma Xi, Member 1979 to present

Society of Toxicology, Member 1993 to present. Vice President Elect for the In Vitro Specialty Section, 2013. Vice President for the In Vitro Specialty Section, 2014, President for the In Vitro Specialty Section, 2015, Past President 2016. Led team that drafted the Scientific, Regulatory, and Public Perspectives on the Use of Alternative Toxicological Test Methods to Inform Decision Making policy statement.

Society for Risk Analysis, Charter Member, Councilor, Treasurer-Elect 2008, Treasurer 2009-2010, and Past-Treasurer 2011. As Chair of the Public Policy Subcommittee helped organize 15 Science and the Congress Congressional Briefings on risk related topics co-sponsored with the American Chemical Society.

Boards
Center for Alternatives to Animal Testing Board of Directors, Johns Hopkins University 2015-Present.

Evidence Based Toxicology Collaboration, Johns Hopkins University President, Board of Trustees. 2015-Present.

Evidence Based Toxicology Collaboration, Johns Hopkins University Center for Alternatives to Animal Testing. Chair Governance and Workprocesses Subcommittee, Baltimore, MD, January 2011 to 2015.

Institute for In Vitro Sciences, Board of Directors, Gaithersburg, MD. June 2012 to Present

AltTox Editorial Board, http://alttox.org/, March 2014 to Present

PUBLICATIONS

Journal Articles

Sebastian Hoffmann, Rob B. M. de Vries, Martin L. Stephens, Nancy B. Beck, Hubert A. A. M. Dirven, John R. Fowle III, Julie E. Goodman, Thomas Hartung, Ian Kimber, Manoj M. Lalu, Kristina Thayer, Paul Whaley, Daniele Wikoff, Katya Tsaioun. A primer on systematic reviews in toxicology. Arch. Toxicol (2017). doi:10.1007/s00204-017-1980-3.

Fowle, J.R. III, R.D. Curren, T. Hartung, C. Proctor, and N. Wilcox. Roundtable Discussion: Twenty-first century in vitro toxicology testing methods and the assessment of e-cigarettes. Applied In Vitro Toxicology 3(1): 3-9. 2017

Langley, G., C.P. Austin, A. K. Balapure, L. S. Birnbaum, J. R.. Bucher, J. Fentem, S. C. Fitzpatrick, J. R. Fowle III, R. J. Kavlock, H. Kitano, B. A Lidbury, A. R. Muotri, S. Q. Peng, D. Sakharov, T. Seidle, T. Trez, A. Tonevitsky, A. van de Stolpe, M. Whelan, and C. Willett. Lessons from Toxicology: Developing a 21st-Century Paradigm for Medical Research. Environmental Health Perspectives 123(11):A268-A272. 2015

Judson, R., R. Kavlock, M. Martin, D. Reiff, K. Houck, T. Knudsen, A. Richard, R. Tice, M. Whelan, M. Xia, R. Huang, C. Austin, G. Datson, T. Hartung, J.R. Fowle III, W. Wooge, W. Tong, and D. Dix. Perspectives on Validation of High-Throughput Pathway-Based Assays Supporting the 21st Century Toxicity Testing Vision. ALTEX, 30(1): 51-66, 2013.

Stephens, M.L., M. E. Andersen, R. A. Becker, K. Betts, K. Boekelheide, E. Carney, R. Chapin, D. Devlin, S. Fitzpatrick, J. R. Fowle III, P. Harlow, T. Hartung, S. Hoffmann, M. Holsapple, A. Jacobs, R. Judson, O. Naidenko, T. Pastoor, G. Patlewicz, A. Rowan, R. Schere, R. Shaikh, T. Simon, D. Wolf, and J. Zurlo. Evidence-based Toxicology for the 21st Century: Opportunities and Challenges. ALTEX, 30(1): 74-103. 2013.

Fowle, J.R. III. Use of Tox 21 Tools from Prioritization for Screening to Risk Assessment in the Context of Endocrine Disruption. ALTEX Proceedings. 1/12, Proceedings of WC8: 101–103. 2012.

Fowle, J.R. III, J.C. Redden, T. McMahon, and R.D. Curren. Development of a Non-Animal Testing Strategy for Ocular Hazard Labeling of Some Specific EPA-Regulated Products. ALTEX Proceedings. 1/12, Proceedings of WC8: 133– 138. 2012.

Kavlock, R., G.T. Ankley, T. Colette, E. Francis, K. Hammerstrom, J. Fowle, H. Tilson, G. Toth, P. Schmieder, G.D. Veith, E. Weber, D.C. Wolf and D. Young. Computational Toxicology: Framework, Partnerships and Program Development. Reproductive Toxicology. 19:265-280. 2005.

Fowle, J.R. III. Accounting for susceptibility in risk assessment: The need for full disclosure. Environmental Toxicology and Pharmacology. 4:247-250. 1997.

Ohanian, E.V., J.A. Moore, J.R. Fowle III, G. S. Omenn, S.C. Lewis, G.M. Gray, and D.W. North. Risk characterization: A bridge to informed decision making. Fundamental and Applied Toxicology. 39:81-88. 1997.

Fowle. J.R. III. Health effects of arsenic in drinking, Water: Research needs. Journal of Environmental Geochemistrv and Health 14: 63-68. 1992.

Fowle, J.R. III, and K. Sexton. EPA priorities for biologic markers research in environmental health. Environmental Health Perspectives 98: 235-241. 1992.

Dellarco, V.L., W..M. Generoso. G.A. Sega, J.R. Fowle III, and D. Jacobson-Kram. Review of the mutagenicity of ethylene oxide. Environmental and Molecular Mutagenesis. 16: 85-103. 1990.

Fowle, J.R. III, Summary and perspectives: Panel discussion on toxicology and exposure assessment: State of the Art. Journal of the American College of Toxicology. 8(5): 865-870. 1989

Levin, M.A., R. Seidler, A.W. Bourquin, J. R. Fowle III, and T. Barkey. EPA developing methods to assess environmental release. Bio/Technology 5:38-45. 1987.

Levin, M.A., R. Seidler, A.W. Bourquin, J.R. Fowle III, and T. Barkey. Il metodo EPA per valutare il rilascio di microorganismi recombinanti. Giotec 2:53-57. 1987. (Italian republication of Bio/Technology Article).

Brownell, E., C.A. Kozak, J.R. Fowle III, W.S. Modi, N.R. Rice, and S.J. O'Brien. Comparative genetic mapping of cellular rel sequences in man, mouse and domestic cat. American Journal of Human Genetics 39:194-202. 1986.

Fowle, J.R. III, and F.J. Kopfler. Water Disinfection: Microbes versus molecules - An introduction of issues. Environmental Health Perspectives 69:3-6. 1986.

Watson, D.K., N.J. Smith, C. Kozak, R. Reeves, J. Gearhart, M.F. Nunn, J.R. Fowle III, P. Duesberg, T.S. Papas, and S.J. O’Brien. Conserved chromosomal positions of dual domains of the ets protooncogene in cats, mice and humans. PNAS, 83:1792-1796. 1986.

Fowle, J.R. III. Summary of in-house workshop to define research/technical approaches in biotechnology. Recombinant DNA Technical Bulletin 7 (2): 65-67. 1984.

Books and Book Chapters

Pastoor, T.P., and J.R. Fowle III. Chapter Pesticide Testing. In Comprehensive Toxicology. Eds. C. McQueen and J. Lamb. In Preparation

Fowle, J.R. III. Chapter Harnessing Advances in Biology and Computing to Advance Chemistry: A Regulatory Toxicology Perspective, In: Teaching and Learning About Sustainability. American Chemical Society Press. 2015. pp. 37-58.

Fowle, J.R. III, A. Jacobs, and S. Fitzpatrick, Chapter 2. Regulatory Testing To Inform Decisions – National and International Requirements, In: Alternatives to Animal Testing. Royal Chemical Society, Eds. D.G. Allen and M.D. Waters. 2013. pp. 44-98.

Fowle, J.R. III. Chapter 13. Drinking Water Health Issues & Neurotoxicity. In: The Vulnerable Brain and Environmental Risks. Volume III: Toxins in Air and Water. Eds. K. Jensen and R. Isaacson. 1994. pp. 247-263.

Fowle, J.R. III. Ed. Application of Biotechnology: Ecology and Policy. Westview Press. Boulder, CO. 242 pages. 1987.

Rogul, M. and J.R. Fowle III, Biotechnology and health risk assessment research. In: Biotechnology and the Environment. G.S. Omenn and A.H. Teich, Eds. Noyes Press. pp. 68-85. 1986.

Jackson, E.R., J.R. Fowle III and P.E. Voytek. Some research needs to support mutagenicity risk assessments from whole mammal studies. In: Utilization of Mammalian Specific Locus Studies in Hazard Evaluation and Estimation of Genetic Risk. F.J. deSerres and W. Sheridan, Eds. Plenum Press, NY. pp. 315-322. 1983.

Conference Proceedings

Juberg, D.R., T.B. Knudsen, N. Beck, R. A. Becker, G.P. Daston, E.M. Faustman, S.C. Fitzpatrick, J.R. Fowle III, et al. FutureTox III Bridges for Translation. Toxicol. 155 (1): 22-31, 2017.

Juberg, D. R., S. J. Borghoff, R. A. Becker, W. Casey, T. Hartung, M. P. Holsapple, M. S. Marty, E. M. Mihaich, G. Van Der Kraak, M. G. Wade, C. E. Willett, M. E. Andersen, C. J. Borgert, K. K. Coady, M. L. Dourson, J. R. Fowle III, L. E. Gray, J. C. Lamb, L. S. Ortego, T. T. Schug, C. M. Toole, L. M. Zorrilla, O. L. Kroner, J. Patterson, L. A. Rinckel, and B. R. Jones. t^4 Workshop Report*Lessons Learned, Challenges, and Opportunities: The U.S. Endocrine Disruptor Screening Program. Altex 31(1): 63-78, 2014.

Stephen Edwards, Julian Preston, Andrew Geller, Annie Jarabek, Douglas C. Wolf, Elaine Cohen Hubal, Gerald Ankley, Hisham El-Masri, Imran Shah, John R. Fowle III, Jeffrey Ross, John Nichols, Kevin Crofton, Mike Devito, Ram Ramabhadran, Robert Kavlock, Rory

Conolly, Sid Hunter, Tom Knudsen, and William Mundy. Toxicity-pathway-based mode-of-action modeling for risk assessment. In: Toxicity-Pathway-Based Risk Assessment: Preparing for Paradigm Change: A Symposium Summary. National Academy of Sciences Press. E. Mantus, Rapporteur. 2014. p. 94

Fowle, J.R. III. Summary: Impact of health effects research on future directions. Proceedings of the 1992 Annual Conference of the American Water Works Association. pp. 747-749. 1992.

Fowle, J.R. III. Introduction to Preconference Session 11. Epidemiology Risk: Assessment, research, communication. Proceedings of the 1992 Annual Conference of the American Water Works Association. pp. 81-83. 1992.

Fowle, J.R. III, C.O. Abernathy, M.J. Mass, J.D. McKinney, D.W. North, E.V. Ohanian, and E. Uthus. Arsenic health research needs. In: Proceedings of the 25th Annual Conference on Trace Substances and Environmental Health. B.D. Beck, Ed. Supplement to the Journal of Environmental Geochemistry and Health. 14: 257-271. 1992.

Fowle, J.R. III. An EPA perspective on biomarker research: How do you get there from here? In: Total Exposure Assessment Methodology: A New Horizon. Proceedings of a conference. Air and Waste Management Association Press. pp. 649-652. 1990.

Fowle, J.R. III. Biomarkers and risk assessment. Proceedings of the 21st Annual Conference on Trace Substances in Environmental Health. pp. 274-282. 1987.

Seminars

"Moving from Descriptive to Predictive Toxicology: More than Science Alone" Baylor University Environmental Science Seminar.Waco, TX. Biological Sciences Building A108. February 24, 2016

"Integrating Tox 21 Tools to Help Determine Pathways of Toxicity Informing Regulatory Decisions." Duke University Integrated Toxicology and Environmental Health Program Seminar Series. September 27, 2013. Levine Science Research Center Room A247. 12:00 n - 1:30 pm.

"Realizing the Future in Toxicity Testing to Inform Decisions: Applying AOPs and Tox 21 Tools to Improve Endocrine Disruptor Assessment." University of North Carolina Curriculum in Toxicology Program. November 18, 2013. Bioinformatics Building 1131. 4:00 pm - 5:00 pm.

Newsletters/Commentaries

Fowle, J.R. III. Improving Toxicity Testing For Better Decision-Making. Chemical and Engineering News 93(28): p. 31. 2015.

Barnes, D.G. and J.R. Fowle III. EPA's Science Advisors. The Risk Advisory. ACS Publications and Reports. 1997.

Fowle, J.R. III. Risk Management. Environment 38(9), pp. 5 & 40. 1996.

Editorial and Letters to the Editor

Fowle, J.R. III. Guest Editorial Environmental Geochemistry and Health. 14: 34. 1992.

Policy Papers

Fowle, J.R. III, and J.C. Rowlands. SOT Express Statement "Scientific, Regulatory, and Public Perspectives on the Use of Alternative Toxicological Test Methods to Inform Decision Making. September 2016. http://www.toxicology.org/pubs/statements/Perspectives-on-the-Use-of-Alternative-Toxicological-Test-Methods-to-Inform-Decision-Making.pdf

Selected EPA Reports

Kavlock, R., G. Ankley, J. Blancato, T. Colette, J.R. Fowle III, E. Francis, E. Gray, K. Hammerstrom, L. Reiter, J. Swartout, H. Tilson, G. Toth, G.Veith, E. Weber, D. Wolf, and D. Young. A Framework for Computational Toxicology Research Program in ORD. EPA 600-R-03/065. 49 pages. November 2003.

Reiter, L.W., J.R. Fowle III, M. Bagley, A. Fairbrother, E.Z. Francis, R.J. Frederick, J. Glaser, M.J. Selgrade, S. Sikdar, L. Watrud and J.L. Andersen. Biotechnology Research Program. EPA 600-R-03/068. 42 pages. June 2003.

Fowle, J.R. III, and K.L. Dearfield. U.S. Environmental Protection Agency Risk Characterization Handbook. EPA 100-B-00-002. 160 pages. December 2000.

Fowle, J.R. III. Workshop Proceedings: Approaches for Improving the Assessment of Human Genetic Risk – Human Biomonitoring. EPA Report 600/9-84-016. 48 pages. 1984.

University of Rochester Medical Center August, 2017

CURRICULUM VITAE

Mark W. Frampton, M.D.

PERSONAL INFORMATION

Name: Mark W. Frampton, M.D.
Home: [redacted]
Office: University of Rochester Medical Center
601 Elmwood Ave., Box 692
Rochester, New York 14642-8692
Telephone: Work: 585-275-4861 Home: [redacted]
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FAX: 585-273-1114
E-mail: mark_frampton@urmc.rochester.edu
Date of Birth: [redacted]
Place of birth: [redacted]
Citizenship: [redacted]

EDUCATION

School or College	Field of Study	Degree Earned	Year
New York University	Medicine	M.D.	1973
California State University, Long Beach, CA	Mathematics, Microbiology	None	1965-1969

POSTDOCTORAL TRAINING

Instructor and Fellow, Pulmonary and Critical Care Unit
University of Rochester 1985-1988

Engaged in private practice of internal medicine,
Williamson, NY 1976-1985

Intern and Resident in Internal Medicine
Buffalo General Hospital, Buffalo, NY 1973-1976

MEDICAL LICENSURE

New York State Permanent Medical Licensure No: 120325 Date: 7/74
Certified -- American Board of Internal Medicine, 1976
Certified -- Pulmonary Disease Subspecialty Examination, 1988
Certified -- Critical Care Subspecialty Examination, 1989-1999
NPI # 1710917877

FELLOWSHIP AWARDS

Source of Award	Institution	Purpose	Years
NIH Pulmonary Training Fellowship	University of Rochester	Academic Pulmonary Training	1986-1988

FACULTY APPOINTMENTS

Institution	Rank	Years
University of Rochester	Professor Emeritus	2014
	Professor of Medicine and Environmental Medicine	2003-2014
	Associate Professor of Medicine and Environmental Medicine	1994-2003
	Assistant Professor of Environmental Medicine	1988-1994
Environmental Protection Agency	Visiting Scientist	1996-1997

PROFESSIONAL HOSPITAL AND ADMINISTRATIVE APPOINTMENTS

Institution	Appointment	Years
Strong Memorial Hospital	Attending Physician	1988-Present
Highland Hospital	Attending Physician	1997-Present
Monroe Community Hospital	Attending Physician	1990-1998
Veteran's Administration Hospital, Bath, NY	Attending Physician (Consulting)	1989-2001
Myers Community Hospital, Sodus, NY	Attending Physician (Consulting)	1985-1990
Strong Memorial Hospital	Instructor and Fellow	1985-1988

MEMBERSHIPS IN LOCAL AND STATE ACADEMIC AND PROFESSIONAL ORGANIZATIONS

Organization	Years
New York State Thoracic Society	1988-Present
President	1997-1998
Vice-President	1995-1996
Secretary-Treasurer	1994-1995
Chairman, Program Committee	1993-1994
Member, Program Committee	1992-1993
Chairman, Hospital Affairs Comm.	1991-1992
Governing Council, NYS Lung Research Institute	1993-2000

MEMBERSHIPS IN NATIONAL AND INTERNATIONAL ACADEMIC AND PROFESSIONAL ORGANIZATIONS

Organization	Years
American Thoracic Society	1986-present
Member, Environmental Health Policy Committee	2005-2006
Chair, Section on Bioterrorism	2003-2005
Chair, Task Force on Bioterrorism	2002-2003
Chair, Environmental and Occupational Health Assembly (EOH)	2001-2003
Long Range Planning Committee, EOH	1997-2000 (Chair, 1998-00)
Program Committee, EOH	1992-1996, 2010-2013
Fellow, American College of Physicians	1974-present

MEMBERSHIPS IN LOCAL AND STATE COMMUNITY SERVICE ORGANIZATIONS

Organization	Years
Board of Directors, American Lung Association - Finger Lakes Region	1998-2001
Board of Directors, American Lung Association of NYS	1998-2001
Bi-Synodical Committee on Death and Dying, Evangelical Lutheran Church in America	1992
Committee on Abortion, Upper NY Synod, Evangelical Lutheran Church in America	1990-1991
Family Team, Upper NY Synod, Evangelical Lutheran Church in America	1982-1987

HONORS AND AWARDS

Chair, Assembly on Environmental and Occupational Health, American Thoracic Society, 2001-2003

Invited Faculty Opponent for Thesis Defense of Doctoral Candidates, Norrlands Universitetsjukhus, Umeå, Sweden, May 1998, June 2014.

President, New York State Thoracic Society, 1997-1998

Member, Governing Council, New York State Lung Research Institute 1993-1999

Fellow, American College of Physicians, 1985

EDUCATIONAL CONTRIBUTIONS OF LAST TEN YEARS

1. Medical Students

a. Fourth-year Pulmonary Elective -- 1987-2014.

b. Introduction to Clinical Medicine – Teaching physical examination skills, 10/2000.

c. Daily contact via Pulmonary and Critical Care Unit teaching rounds: average of two students per year for four-week course—1988-2014.

d. Research elective: Eric Reisenfeld, 1999-2000. Awarded MD with Distinction in Research as a result of his project in my laboratory.

e. Adult Inpatient Clerkship, Quarterly Lecture and Journal Club, 2000-2006.

f. Student advisor, MD-PhD Program, 2003-2007.

2. Graduate and Undergraduate Students

a. Lecturer, Toxicology Core Course 521, 1992-2006: "Pulmonary Effects of Atmospheric Pollutants".

b. Summer research projects for undergraduate students:

Jan Oberdörster, 1992; Kyra Blount, 1993 (NHLBI Summer Training Program Grant recipient); Lena Mayes, 1994 and 1996 (NHLBI Summer Training Program); Michael Abraham, 1995 and 1996; Michelle Villasmil, 2004-2005, Katherine Levy, 2005.

c. Advisor for graduate Toxicology Seminar, November 1998, November 2004

d. Lecturer, Detection of Environmental Hazards (ENV 456), February 28, 1996: "Outdoor Air Pollution And Health Effects Of Ozone".

e. Independent Research supervisor for undergraduate students Pamela Collins (1993-1994), Michael Abraham (1995-1996), Nandini Seshan (2010).

f. Advisor for graduate student Richard Kaplan, Master's Essay, 1994-1995.

g. Laboratory experience for graduate student Emily Resseguie, 2010.

3. Residents

a. Pulmonary and Critical Care Unit Rounds --1988 - 2014. Daily rounding and teaching for two to four months per year beginning July 1988.

b. Teaching conferences—1988 - 2014. Biweekly Tuberculosis Conference, weekly Physiology and Clinical Outpatient conferences, and monthly Pathology conference. Utilized as teaching experiences for residents on the Pulmonary and Critical Care Service.

c. Mortality and Morbidity Conference, Strong Memorial Hospital: "Pulmonary Hypertension", November 9, 1990.

d. Medical Service Attending Rounds, Strong Memorial Hospital, 3 to 6-week blocks of service, MWF 10–11:30 AM, 1990-present.

e. Professor's Rounds, Strong Memorial Hospital, two sessions yearly, 1990-2014.

f. Interviewed Internal Medicine Residency Program applicants, 1992-2014.

g. Medical Grand Rounds, Strong Memorial Hospital: "Influenza Pneumonia", February 22, 1990; "Idiopathic Pulmonary Fibrosis", April 2, 1992; "Diagnostic Strategies for Suspected Pulmonary Embolism", Sept. 15, 1994.

h. Resident's Noon Conference: The Treatment of Asthma", August 19, 1992; "Writing and Publishing Case Reports", August 27, 1993; "Pulmonary Function Tests: Beyond Spirometry", March 15, 1995; "Tuberculosis", September 5, 1995; “Clinical Inhalation Studies”, October 31, 2002; “Fever, Weight Loss, and Intrathoracic Adenopathy”, April 1, 2009.

i. Jaspal Singh, Poster presentation: Esophageal leiomyomas mimicking asthma in an adult. 2001.

j. Resident research elective supervisor: Joseph Terrana, February 1999; Anatole Kleiner, February 2005 and January 2006; Amitha Harish, January 2006, Lorenzo Klein, 2005-2007; Ramzy Al-Hourany, 2008.

4. <u>Pulmonary and Critical Care Fellows</u>

a. Director, Pulmonary and Critical Care Fellowship Program, 1999-2007

b. Pulmonary and Critical Care Unit Rounds, 2-4 months per year, 1988 - 2014

c. Regular teaching conferences as noted under Residents.

d. Supervision of Fellows in development of procedural skills, 2-4 months per year, 1988 – 2014.

e. Supervision of Fellow research:

- Jonathan Gavras, 1991-1992. Effects of exposure to oxidant air pollutants on respiratory defense.
- John P. Fogarty, 1993-1994. Effects of oxidant exposure on bronchial epithelial cells obtained by brush biopsy.
- Fadi Malek, 1994. Mediators of the systemic acute phase response to ozone exposure in humans.
- Alfonso Torres, 1994-1996. Oxidative burst of alveolar macrophages in asthma.
- Edgar Geigel, 1995-1997. Exhaled nitric oxide as a marker of airway inflammation.

EDUCATIONAL CONTRIBUTIONS (continued)

- Ming Chow, 1996-1998. Comparison of induced sputum leukocyte differential counts using flow cytometry.
- Joseph Boscia, 1997-1999. Effects of oxidant and particulate air pollutants on respiratory health.
- Christopher Daigle, 2000-2002. Effects of exposure to ultrafine particles.
- Carol-Lynn Petronaci, 2003-2005. Particle surface area and pulmonary vascular effects.
- Alpa Shah, 2004-2006. Effects of ultrafine particle exposure on cardiovascular function in diabetics.
- Steven Lee, 2007-2009. Effects of concentrated ambient ultrafine particles on platelet function and coagulation.
- Michael Dentler, 2013-2015. Cardiovascular effects of ozone exposure.
- Ala Muala, June 5, 2014, Invited Thesis Opponent, Umeå University, Umeå, Sweden.

5. Continuing Medical Education

See "Local and Regional Meetings"

PROFESSIONAL SERVICE ASSIGNMENTS AND RESPONSIBILITIES

Consulting Physician, Veterans Administration Hospital, Bath, NY, 1989-2001

Consulting Physician, Monroe Community Hospital, 1990-1998

Outpatient Clinic, Pulmonary and Critical Care Division, 1985-present

Attending Physician, Strong Memorial Hospital, 1988-present

Attending Physician, Highland Hospital, 1997-present

Consulting Physician, TB Clinic, Monroe County Health Department, 1991-Present

PROFESSIONAL ADMINISTRATIVE ASSIGNMENTS AND RESPONSIBILITIES

Buffalo Division Review Committee, Island Peer Review Organization, Inc., 1990-1992

New York State Thoracic Society Scientific Assembly Planning Committee, 1991-1992

Residency Selection Committee, 1990-1993

Director of Critical Care Fellowship Training, Strong Memorial Hospital, 1991-1994

Department of Medicine Quality Assurance Committee, 1991-1996

Invited Internal Reviewer, Department of Pediatrics, April 10-11, 1996

Board of Directors, American Lung Association of NYS, 1998-2001

Board of Directors, American Lung Association - Finger Lakes Region, 1998-2001

Chair, Internal Review Committees: Musculoskeletal Radiology Fellowship, 2000; Hand Surgery Fellowship, 2003; Pediatric Cardiology Fellowship, 2007.

Director, Pulmonary and Critical Care Research, 1998-2006

Graduate Medical Education Committee, 1999-2007

Director, Pulmonary and Critical Care Fellowship Program, 1999-2007

PROFESSIONAL ADMINISTRATIVE ASSIGNMENTS (continued)

Department of Medicine Fellowship Programs Representative, 1999-2007

Director, Wayne County Tuberculosis Clinic, 1978-2012

Director, Pulmonary Function Laboratory, Strong Memorial Hospital, 1999-2014

Scientific Advisory Committee, General Clinical Research Center, 1994-1996, 1998-2012

Associate Director, General Clinical Research Center, 2010-2017

RESEARCH ACTIVITIES

1. Projects in Progress

Each day the average person breathes about 15,000 liters, or approximately 35 pounds, of air. Gaseous and particulate contaminants in that air gain access to the body with each breath, and may have both short and long-term effects on human health. Our ongoing studies examine the effects of particle exposure on lung function, airway inflammation, and cardiovascular function. Utilizing both environmental chamber and mouthpiece exposure systems, subjects are exposed to environmentally relevant concentrations of pollutants, with or without exercise. Respiratory and systemic effects are determined using measures of lung function, examination for markers of inflammation in exhaled air, characterization of blood leukocyte and platelet responses using 3-color flow cytometry, and detailed cardiovascular monitoring.

Ultrafine particles (UFP, <100 nm diameter) may be particularly important with regard to cardiovascular effects because of their potential for evading clearance mechanisms and entering the lung interstitium and vascular space. We have demonstrated in healthy nonsmokers that inhalation of low concentrations of UFP causes changes in leukocyte expression of adhesion molecules, and reductions in the pulmonary diffusing capacity, that are consistent with altered endothelial function. The elderly and people with underlying vascular disease, such as diabetics, may be more susceptible to vascular effects of particle exposure because of impaired endothelial function and increased risk for atherosclerosis. Our studies explore the hypothesis that **inhalation of ultrafine particles alters endothelial function** in healthy and susceptible people. Endothelial dysfunction is critically linked to the pathogenesis of atherosclerotic vascular disease. Data from these human clinical studies of exposure to air pollutants help to elucidate the mechanisms responsible for pollutant health effects, and assist in establishing rational air quality standards.

2. Research Grants Obtained

Current:

a. Principal Investigator: Health Effects Institute, “Cardiovascular Effects of Near-ambient Ozone Exposure in Older Subjects”. 07/01/2011-12/31/2017. Total direct costs: $953,468.

RESEARCH ACTIVITIES (continued)

Former:

a. Principal Investigator: American Petroleum Institute, “Susceptibility to the health effects of ultrafine particles: role of glutathione-S-transferase deficiency”. 7/1/2007-06/30/2015. Total costs $102,000.

b. Principal Investigator: NIH - National Heart, Lung and Blood Institute, “Multidisciplinary Training in Pulmonary Research”. 9/1/2001-8/31/2014. Total direct costs: $1,751,585.

c. Principal Investigator: CONCAWE, “Ozone Cardiovascular Effects in Genetically Susceptible People”. 12/01/2010-11/30/2013. Total costs $100,000.

d. Principal Investigator: ExxonMobil, “Ozone Cardiovascular Effects in Genetically Susceptible People”. 12/01/2010-11/30/2013. Total costs $100,000.

e. Principal Investigator: NIH - National Institute of Environmental Health Sciences, “Ozone Cardiovascular Effects in Genetically Susceptible People”. R01ES017428. 06/01/2010- 04/30/2013. Total costs: $1,025,074.

f. Co-Investigator (PI, Research Core 3): Environmental Protection Agency Particle Center Grant (PI: G. Oberdörster), Grant no. RD-83241501-01, “Ultrafine particle characterization, health effects and pathophysiological mechanisms". Effective dates: 6/1/99-9/30/11. Total direct costs: $5,969,473.

g. Principal Investigator: NIH – National Institute of Environmental Health Sciences, “Cardiovascular Effects of Ultrafine Particles in Genetically Susceptible Subjects”. RC1ES018519-01. 9/30/09-7/31/11. Total direct costs: $661,668.

h. Principal Investigator: NIH – National Institute of Environmental Health Sciences, “Ultrafine particle-induced oxidative stress”. 8/1/2004-1/31/2009. Total Direct Costs $1,000,000.

i. Principal Investigator: NIH – National Institute of Environmental Health Sciences, “Cardiovascular effects of ultrafine particle exposure in humans”. 9/20/2002-6/30/2007. Total Direct Costs $1,001,562.

j. Co-Principal Investigator: Electric Power Research Institute (P.I.: M.J. Utell), “Health Effects of Exposure to Ultrafine Particles”. Effective dates: 10/2/98 – 12/31/04. Total Direct Costs: $278,011

k. Co-Investigator: Philip Morris (P.I.: R. Phipps), “Smoking related toxicants: induction of cyclooxygenase-2 and PGE2 and enhancement of pulmonary injury and asthma”. 7/1/01-6/30/04. Total Direct Costs: $542,397.

l. Co-Investigator: NIH - National Heart, Lung and Blood Institute (P.I.: W. Beckett), “Inhaled particle characteristics and early lung effects”. 6/1/00-5/31/04. Total Direct Costs: $800,000.

m. Co-Investigator: New York State Energy Research and Development Authority (P.I.: M.J. Utell), "Clinical Studies of Exposure to Ultrafine Particles". Effective dates: 1/1/99 -12/31/03. Total Direct Costs: $407,415

RESEARCH ACTIVITIES (continued)

n. Co-Investigator: U.S. Navy (P.I.: M. Utell), “Prevalence of airborne particles in the submarine atmosphere”. 6/1/01-11/30/02. Total Direct Costs $75,000.

o. Principal Investigator: Environmental Protection Agency, “Human health effects of exposure to ultrafine particles”. Effective dates: 10/1/98-9/30/02. Total Direct Costs: $463,057

p. Principal Investigator: Center for Indoor Air Research, "Indoor air particles and human health". Effective dates: 7/1/99-6/30/02. Total Direct Costs: $365,856

q. Principal Investigator: Health Effects Institute, “Health effects of exposure to ultrafine carbon particles in healthy subjects and subjects with asthma”. Effective dates: 8/15/98-6/30/02. Total Direct Costs: $769,858

r. Co-Investigator: Dow Corning Corporation (P.I.: M.J. Utell), "Clinical studies on the respiratory and percutaneous effects of silicones". Effective dates: 2/15/94-12/31/01. Total Direct Costs: $3,462,900

s. Co-Principal Investigator: NIH - National Institute of Environmental Health Sciences (P.I.: M.J. Utell), "Toxic effects of particles and oxidants on lung function". Effective dates: 7/1/93 - 6/30/99. Total Direct Costs: $1,148,286

t. Principal Investigator: NIH - National Heart, Lung and Blood Institute, "Human health effects of repeated exposures to ozone". Effective dates: 7/1/93 - 3/31/99. Total Direct Costs: $599,159

u. Co-Investigator: Allied Signal (P.I.: M.J. Utell), "Clinical inhalation studies with HCFC-141b". Effective dates: 7/1/95-12/31/97. Total Direct Costs: $169,460

v. Principal Investigator: Center for Indoor Air Research, "Exposure to nitrogen dioxide: effects on human defenses against respiratory viruses". Effective dates: 7/1/93 - 6/30/96. Total Direct Costs: $536,905

w. Co-Investigator: NIEHS Program Project ESO1640 (P.I. W.G. Thilly, Massachusetts Institute of Technology), "Mutagenic health effects of airborne toxicants in human lungs". Effective dates: 8/1/94-7/31/96. Total Direct Costs (Subcontract): $302,862

x. Principal Investigator: Health Effects Institute, "Mechanisms of airway inflammation in smokers and nonsmokers with varying responsiveness to ozone". Effective dates: 7/1/91 - 12/31/94. Total Direct Costs: $534,160.

y. Principal Investigator: NIH - General Clinical Research Centers, Clinical Associate Physician (CAP) Award. Effective dates: 4/1/89 - 3/31/92. Total Direct Costs: $174,759

z. Co-Investigator: Electric Power Research Institute (P.I.: M.J. Utell), "Effects of sulfuric acid aerosols on pulmonary defense mechanisms in man". Effective dates: 1/1/91 - 12/31/93. Total Direct Costs: $649,573

aa. Co-Investigator: Health Effects Institute (P.I.: M.J. Utell), "Influence of sulfate aerosols on exposure-response characteristics of ozone on human lung function". Effective dates: 11/1/88 - 8/31/92. Total Direct Costs: $458,720

RESEARCH ACTIVITIES (continued)

bb. Co-Investigator: R.J. Reynolds Company (P.I. M.J. Utell), "Effects of the 'New' cigarette on indices of epithelial injury and cellular function". Effective dates: 1/1/95-12/31/98. Total Direct Costs: $348,157

cc. Co-Investigator: Center for Indoor Air Research (P.I. J.N. Finkelstein), "Response of extracellular glutathione peroxidase to acute ozone and nitrogen dioxide exposures". Effective dates: 2/1/97-1/31/00. Total Direct Costs: $522,345

PRESENTATIONS AT MAJOR PROFESSIONAL MEETINGS

Local and Regional Meetings

"Mechanisms of nitrogen dioxide toxicity in humans", October 9, 1987. Presented at the Annual Meeting of the Eastern Section of the American Thoracic Society, Providence, RI.

"'Do not resuscitate' orders", November 24, 1987. Presentation to Rochester Area Hospital Chaplains.

"Oxidant pollutants and human respiratory defense", May 17, 1988. Invited speaker at Research Conference, McMaster University, Hamilton, Ontario.

"Effects of oxidants on human alveolar cells", May 26, 1988. Presented at Department of Neonatology Interdisciplinary Research Conference, University of Rochester.

"Recognition and treatment of deep venous thrombosis and pulmonary embolism: an update", April 19, 1989. Invited speaker, Grand Rounds, Veterans Administration Hospital, Bath, NY.

"Community acquired pneumonia", April 27, 1989. Invited speaker, Family Medicine Grand Rounds, Highland Hospital, Rochester, NY.

"Pneumonias of the 1990's", October 6, 1989. Presented at Veterans Administration Hospital Medical Center, Canandaigua, NY.

"Therapeutic considerations in community acquired pneumonia", October 10, 1989. Presented at a meeting of the Medical Societies of the Counties of Oneida, Herkimer, Madison and Chenango.

"Weaning from mechanical ventilation", November 20, 1989. Invited speaker, Myers Community Hospital, Sodus, NY.

"Extrapulmonary tuberculosis", November 1, 1990. Presented at the Gretchen Crisler Memorial conference at the Jewish Home of Rochester.

"Decisions regarding treatment of the dying, elderly, and chronically ill", April 14, 1991. Seminar presented at Mountainrise United Church of Christ.

"Nitrogen dioxide and human health: are you cooking with gas?" June 4, 1991. Department of Medicine Research Seminar, Rochester Academy of Medicine, Rochester, NY.

"Air pollution and respiratory host defense: Effects of exposure to nitrogen dioxide". April 16, 1992. Department of Medicine Research Seminar, Strong Memorial Hospital.

"Tuberculosis", June 19, 1992. Presented at Newark Wayne Community Hospital, Newark, NY.

"Is extrapulmonary TB contagious?" August 26, 1992. City-Wide Chest Conference, Strong Memorial Hospital, Rochester, NY.

"Pulmonary function tests", September 24, 1992. In-service for Kodak Medical Department, Rochester, NY.

"Airway inflammation and exposure to ozone air pollution". January 15, 1993. Immunology Research in Progress Seminar, University of Rochester.

PRESENTATIONS (continued)

"Indoor and Outdoor Air Pollution and Asthma". February 17, 1993. Regional Postgraduate Teaching Morning, Department of Pediatrics, Strong Memorial Hospital.

"Exposure To Ozone Air Pollution: Are Smokers A Susceptible Subpopulation?" April 27, 1993. Respiratory Toxicology Research Seminar, Department of Environmental Medicine.

"Tuberculosis in 1993: Is the hospital a dangerous place?" April 29, 1993. Presented at Veterans Administration Center, Bath, NY

"Human Health Effects of Air Pollution". July 29, 1993. Luncheon Seminar, Strong Children's Research Center, University of Rochester.

"Advances in the management of COPD", October 8, 1993. Presented at Veterans Administration Center, Bath, NY.

"Pediatric tuberculosis in Monroe County" February 8, 1994. Pediatric Pulmonary Conference, Strong Memorial Hospital, Rochester, NY.

"TB skin testing: what's positive?" February 18, 1994. Gretchen Crisler Memorial Conference, Rochester, NY.

"Health Effects of Ozone Air Pollution: Who is at risk?" October 4, 1994. SCOR Seminar Series, University of Rochester.

"Acute Pulmonary Responses To Ozone: Markers Of Epithelial Inflammation And Injury". November 18, 1994. Immunology Research in Progress Seminar, University of Rochester.

"Use Of Fiberoptic Bronchoscopy In Clinical Research". March 22, 1995. GCRC Research Seminar Series, University of Rochester.

"A new wrinkle: coping with the effects of aging". July 17-21, 1995. Presented at the Lutheran Summer Conference, Silver Bay, NY.

"Tuberculosis in Wayne County". October 27, 1995. Grand Rounds, Newark Wayne Community Hospital, Newark, NY.

"Ozone-induced Airway Inflammation in Asthma". November 16, 1995. SCOR Seminar Series, University of Rochester.

"Tuberculosis Prevention in Wayne County". February 19, 1996. Medical Grand Rounds, Myers Community Hospital, Sodus, NY

"Ozone-induced airway inflammation and its relationship to airway responsiveness and disease". Work-in-Progress Seminar, EPA Human Studies Division, January 29, 1997

"Self-Care: Managing Stress". July 14-18, 1997. Presented at the Lutheran Summer Conference, Silver Bay, NY.

"Airway epithelial cell responses to ambient air particles". September 11, 1997. Pulmonary Biology Research Seminar, University of Rochester.

"Environmental Lung Diseases". September 13, 1997, Co-chair of plenary session, Great Lakes Lung Conference, Niagara-on-the-Lake, Ontario, Canada.

"All that wheezes and gets acidotic is not asthma". August 26, 1998. City-Wide Chest Conference, University of Rochester.

"Effects Of Ambient Air Particles From The Utah Valley On Human Airway Epithelial Cells". September 12, 1998. Great Lakes Lung Conference, Niagara-on-the-Lake, Ontario, Canada.

PRESENTATIONS (continued)

"Environmental Lung Diseases". September 13, 1998, Co-chair of plenary session, Great Lakes Lung Conference, Niagara-on-the-Lake, Ontario, Canada.

"Asthma: a modern epidemic of airway obstruction". November 14, 1998. "Breathless in Rochester", a conference on asthma sponsored by the Center for Environmental Information, Rochester, NY.

"Smokers who can't quit: effects of switching to a new type of cigarette". January 7, 1999. Pulmonary Biology Research Seminar, University of Rochester.

"Air pollution particles: are there respiratory and cardiovascular effects?" April 1, 1999. Department of Medicine Research Seminar, University of Rochester.

"Severe steroid-dependent asthma: does methotrexate help?" June 2, 1999. City-Wide Chest Conference, University of Rochester.

"Variability in human responsiveness". September 20, 1999. Pulmonary Journal Club, University of Rochester.

"Another heart-lung interaction: respiratory disease and myocardial infarction". October 20, 1999. City-Wide Chest Conference, University of Rochester.

"The leukocyte oxidative burst". October 4, 1999. Pulmonary Physiology Conference, University of Rochester.

"Particles in the air we breathe: just annoying or really bad?" November 8, 1999. General Clinical Research Center Seminar Series, University of Rochester.

"Medical aspects of air pollution: what's fact and what's hype?" November 9, 1999. Rochester Academy of Medicine.

"Tuberculosis Prevention and Control: Changes are Coming", December 3, 1999. Medical Grand Rounds, Newark Wayne Community Hospital

"Idiopathic pulmonary fibrosis: clinical features and therapeutic options." June 21, 2000. City-Wide Chest Conference, University of Rochester.

“Airways Resistance”. October 30, 2000. Pulmonary Physiology Conference, University of Rochester.

“Idiopathic pulmonary fibrosis”. February 13, 2001. Buffalo Pulmonary Physicians, Buffalo, NY.

"Pulmonary case review at the VA", Twice yearly 1995 - 2001. Presented at Veterans Administration Center, Bath, NY.

“Clinical Studies of Exposure to Ultrafine Particles”, September 24, 2001. New York State Energy Research and Development Authority Annual Conference, Albany, NY.

"Mechanisms for the Morbidity and Mortality Associated with Particulate Air Pollution", January 25, 2002. Immunology Research in Progress Seminar, University of Rochester.

“Fine Particle Air Pollution Has Cardiovascular Effects. What are the Mechanisms?" February 25, 2002. Pathobiology, Oncology and Molecular Medicine Seminar, University of Rochester.

“Human Clinical Inhalation Studies”, October 31, 2002. Medicine Residents’ Noon Conference, University of Rochester.

“The Cardiovascular Effects of Inhaling Cigarette Smoke and Other Particles”, February 10, 2003. Pulmonary Biology Conference, University of Rochester.

PRESENTATIONS (continued)

"Clinical Studies of Ultrafine Particles", April 21, 2003. Town Hall Meeting: "What You and Your Family Need to Know About Air Pollution and How it Affects Your Health". Syracuse, NY.

"Particulate Air Pollution: A New Cardiovascular Risk Factor?" January 12, 2004, Scientific Reasoning in Medicine, MD-PhD Program, University of Rochester School of Medicine.

"Airways Resistance and Methacholine Challenge", September 1, 2004. Pulmonary Physiology Conference, University of Rochester.

"Take it to Heart: The Cardiovascular Effects of Particulate Air Pollution", May 12, 2005. University of Rochester Medical Center.

"Cardiovascular Effects of Ultrafine Particles", June 6, 2005. Community Advisory Board, Environmental Health Sciences Center, University of Rochester Medical Center.

"Ultrafine Particles: Effects Beyond the Lung?" October 24, 2005. Syracuse Center of Excellence, Syracuse, NY.

"The Pulmonary and Cardiovascular Effects of Breathing Ultrafine Particles", May 4, 2006, Environmental Medicine Research Conference, University of Rochester Medical Center.

"Oxidant Gases: Ozone and NO_2", October 2, 2006, Toxicology lecture, University of Rochester.

"Air Pollution Particles and the Heart", November 8, 2006, Cardiology Grand Rounds, University of Rochester.

"Air Pollution, Inflammation, and Cardiovascular Disease", January 10, 2007, Department of Medicine Research Seminar, University of Rochester.

The Acute Respiratory Distress Syndrome", March 2, 2010, Mercy Flight Central, Canandaigua, NY.

"Pulmonary Evaluation for Office Procedures", November 9, 2010, Oral & Maxillofacial Surgery Grand Rounds, Eastman Dental Center, University of Rochester Medical Center.

"Pulmonary Function Testing". 2011, 2012. Organized a series of 6 lectures for pulmonary fellows and pulmonary function laboratory staff.

"Airways Resistance and Challenge Testing", Pulmonary and Critical Care, Strong Memorial Hospital, Annually, 2012-2015.

"History of Air Pollution Research", September 24, 2015, Environmental Health Sciences Research Day, University of Rochester Medical Center.

National Meetings

"Inhalation of 0.60 ppm NO_2: evaluation by bronchoalveolar lavage 18 hours after exposure", May 9, 1988. Presented at the Annual Meeting of the American Thoracic Society, Las Vegas, NV.

"Does exposure to ambient levels of NO_2 impair human respiratory defense?" October 25, 1988. Presented at National Institute of Environmental Health Sciences (NIEHS) Center Director's Meeting, Baltimore, MD.

"Beyond PFT's: assessing effects of atmospheric pollutants on pulmonary immune responses", October 26, 1988. Presented at New York University Institute of Environmental Medicine, Tuxedo, NY.

"Mechanisms of nitrogen dioxide toxicity in humans", April 11, 1989. Presented at the 6th Health Effects Institute Annual Conference, Cambridge, MA.

PRESENTATIONS (continued)

"Light scattering properties of human alveolar cells after inhalation of NO_2", May 14, 1989. Presented at the Annual Meeting of the American Thoracic Society, Cincinnati, OH.

"Effects of NO_2 exposure on pulmonary function and airway reactivity", May 14, 1989. Presented at the Annual Meeting of the American Thoracic Society, Cincinnati, OH.

"Effects of exposure to H_2SO_4 aerosol on alveolar cell populations in humans", May 20, 1990. Presented at the 1990 World Conference on Lung Health, Boston, MA.

"Sulfuric acid inhalation and biochemical characteristics of human airway mucous glycoproteins". Presented at the 1990 World Conference on Lung Health, Boston, MA.

"Effects of exposure to ambient levels of NO_2: is host defense altered in humans?" June 25, 1990. Presented at the 83rd Annual Meeting of Air and Waste Management Association, Baltimore, MD.

"Characterization of the inflammatory response to NO_2 exposure using bronchoalveolar lavage in humans", May 12, 1991. Presented at the 1991 ALA/ATS International Conference, Anaheim, CA.

"The effects of NO_2 on superoxide anion generation by human alveolar macrophages". Presented at the 1991 ALA/ATS International Conference, Anaheim, CA.

"Pollutants and respiratory infections: addressing the issue in humans", May 14, 1991. Invited speaker, 1991 ALA/ATS International Conference, Anaheim, CA.

"Effects of NO_2 exposure on human host defense". Presented at the 1992 ALA/ATS International Conference, Miami Beach, FLA.

"Does pre-exposure to acidic aerosols alter airway responses to ozone in humans?" Presented at the 1992 ALA/ATS International Conference, Miami Beach, FLA.

"Airways responsiveness to ozone in smokers and nonsmokers". Presented at the 1993 ALA/ATS International Conference, San Francisco, CA.

"Immediate and delayed effects of ozone exposure on bronchoalveolar lavage cells in smokers and nonsmokers". Presented at the 1993 ALA/ATS International Conference, San Francisco, CA.

"Asthma is in the air: the role of allergens, irritants, and air pollution." Invited speaker, 1994 Scientific Assembly, American Lung Association of New York State.

"Acidic aerosols: effects on alveolar macrophage function and ozone responsiveness in humans." Presented at the Colloquium on Particulate Air Pollution, Anaheim, CA, January 24, 1994.

"Current issues in air pollution health effects research: SO_2 and acidic aerosols". Invited speaker, 1994 ALA/ATS International Conference, Boston, MA.

"Airway inflammation and functional responsiveness to ozone in humans". Presented at the 1994 ALA/ATS International Conference, Boston, MA.

"Ozone exposure, exercise, and the systemic acute phase response in humans". Presented at the 1994 American Physiological Society Conference, Physiology of the Release and Activity of Cytokines, Baltimore, MD.

"Interspecies comparison of immunotoxicity of inhaled sulfuric acid: I. Human subjects". Presented at the 1994 ALA/ATS International Conference, Boston, MA.

"Acute pulmonary responses to oxidants: markers of epithelial inflammation and injury". Invited speaker, Bowman Gray School of Medicine, Winston Salem, NC, 1994.

"Airway inflammation and functional responsiveness to ozone in humans". Presented at the First Great lakes Lung Conference, Niagara-on-the-Lake, Ontario, Canada, 1994.

PRESENTATIONS (continued)

"Airway inflammation in smokers and nonsmokers with varying responsiveness to ozone". Invited presentation, Health Effects Institute Annual Conference, Chicago, IL, April 1995.

"Predictors of lung function responsiveness to ozone exposure in humans". Presented at the 1995 ALA/ATS International Conference, Seattle, WA.

"Ozone induced airway inflammation--Human studies". Co-Chaired poster discussion, 1995 ALA/ATS International Conference, Seattle, WA.

"The health effects of ozone". Invited speaker, Annual Meeting of Northeast States for Coordinated Air Use Management in Cambridge, MA, July 11, 1995.

Invited participant, Workshop on Human Variability, International Life Sciences Institute, October 16-17, 1995, Washington, DC.

"Health effects of acid aerosols in asthma". Invited speaker, American Academy of Allergy, Asthma and Immunology International Conference in New Orleans, LA, March 19, 1996.

"Lower airway responses of asthmatics to environmental exposures". Invited speaker, Environmental Protection Agency Workshop on Asthma and the Environment, May 7-9, 1996, Chapel Hill, NC.

"Ozone exposure in subjects with asthma increases BAL lymphocyte number and activation". Presented at the 1996 ALA/ATS International Conference, New Orleans, LA.

Invited participant, Ozone Health Research Needs Workshop, EPA National Center for Environmental Assessment, March 25-27, 1997, Chapel Hill, NC.

Invited participant, Clinical Studies of Particulate Matter, American Petroleum Institute, April 30-May 1, 1997, Alexandria, VA.

"Subclinical effects of exposure to atmospheric oxidants". Presented at Health Effects Institute Workshop on Subclinical Cardiorespiratory Effects of Pollutants, May 17, 1997, San Francisco, CA.

"Ozone air pollution: health effects and mechanisms". Co-Chaired poster discussion session, 1998 ALA/ATS International Conference, April 1998, Chicago, IL.

"Pre-existing Cardiopulmonary Disease". 1999 ALA/ATS International Conference, Symposium "Host Susceptibility Factors to Environmental Lung Disease", San Diego, CA, April 28, 1999.

"Health effects of nitrogen oxides". Diesel Engine Emission Reduction Workshop, Castine, Maine, July 6, 1999.

"Particles in the air: Are your patients at risk?" Department of Medicine Grand Rounds, University of California Irvine, September 28, 1999.

"Immunotoxicants–Ambient Gases". Continuing Education Course: "Pulmonary Immunotoxicology", Society of Toxicology 39th Annual Meeting, Philadelphia PA, March 19, 2000.

"Systemic and Cardiovascular Effects of Airway Injury and Inflammation". Workshop: Inhaled Environmental/Occupational Irritants and Allergens: Mechanisms of cardiovascular and systemic responses, Scottsdale, AZ, April 1, 2000.

"Deposition of inhaled ultrafine carbon particles in resting, healthy, nonsmoking adults." 2000 ALA/ATS International Conference, Symposium "Fine and ultrafine particles: distribution and effects". Toronto, Canada, May 8, 2000.

Organizing Committee & speaker: Workshop on Cardiovascular Effects Associated with Air Pollution, Rochester, NY March 7-8, 2001

PRESENTATIONS (continued)

"Health effects of exposure to ultrafine carbon particles in healthy subjects and subjects with asthma". Health Effects Institute Annual Conference, Washington DC, April 30, 2001.

"Mechanistic basis and epidemiologic evidence for cardiovascular effects of air pollution". Co-chaired poster discussion session, 2001 American Thoracic Society International Conference, May 2001, San Francisco, CA.

"Clinical inhalation studies". Presentation to investigative panel, Life Sciences Research Office, December 2001, Chicago, IL.

"Susceptible Populations: Human Clinical Studies". Presentation to National Research Council, Committee on Research Priorities for Airborne Particulate Matter, April 27, 2002, Seattle, WA.

"Effects of ultrafine (carbon) and fine PM (CAPs) on cardiovascular function in humans". Health Effects Institute Annual Conference, April 29, 2002, Seattle, WA.

"Ultrafine Particle Inhalation In Subjects With Asthma: Effects On Blood Leukocytes And Endothelial Activation", Association for the Advancement of Aerosol Research Annual Conference, April 1, 2003, Pittsburgh, PA.

"Air Pollution and inflammation: What do we know?" Health Effects Institute Annual Conference, May 5, 2003, Boulder, CO.

"Concluding remarks: Mechanisms of PM Toxicity." Invited speaker, 2003 ATS International Conference, May 19, 2003, Seattle, WA.

"Human clinical studies of air pollutants: ethical and safety considerations in study design", Invited speaker, Conference on The Ethics, Human Subject Protections and Science of Experimental Human Exposures to Industrial Chemicals, Environmental & Occupational Health Sciences Institute, June 20, 2003, Piscataway, NJ.

"Health effects assessment: oxidative stress and inflammation", Health Effects Institute ACES Workshop, November 6, 2003, Denver, CO.

"From bench to bedside: what a physician needs to know about air pollution", ATS International Conference, May 23, 2004, Orlando, FL.

"Ultrafine Particles: Characterization, health effects, and pathophysiological mechanisms", Science Day, Environmental Protection Agency, Region 2, November 18, 2004, New York, NY.

"Air Pollution and the Blood: Does Breathing Ultrafine Particles Affect the Circulation?" Harvard School of Public Health, November 22, 2005, Boston, MA.

"Cardiovascular Effects of PM Components", Health Effects Institute Annual Conference, April 11, 2006, San Francisco, CA.

"Human Clinical Studies of Ultrafine Particles", invited speaker, Ultrafine Particles: The Science, Technology, and Policy Issues, May 2, 2006, Los Angeles, CA.

"Air Pollution and Cardiovascular Health", Pulmonary Grand Rounds, University of Arizona Medical Center, July 11, 2006, Tuscon, AZ.

Planning committee and co-chair, U.S. EPA/NHLBI/NIEHS Sponsored Meeting, "The Role of Air Pollutants in Cardiovascular Disease", October 12, 2006, Research Triangle Park, NC.

"Vascular and Platelet Effects of UFP in Diabetics", 5^{h} EPA-GSF-Rochester biennial Workshop, May 18, 2007, Montreat, NC.

PRESENTATIONS (continued)

"Clinical Studies of Respiratory and Cardiovascular Effects of Ultrafine Particles", Center for Health Professions, University of Southern California, November 26, 2007, Los Angeles, CA.

"Changes in endothelial and platelet function with inhalation of nanoparticles: effects of oxidative stress?", EPA PM Centers Meeting, Southern California Particle Center, November 27, 2007, Los Angeles, CA.

How can air pollution cause health effects? MIT NESCAUM 2008 Symposium on Urban Transportation, August 12-13, 2008, Dedham, MA.

"Pulmonary and cardiovascular effects of exposure to ambient concentrated ultrafine particles in healthy subjects", NIEHS/EPA workshop, Role of Air Pollutants in Cardiovascular Disease, September 3, 2008, Chapel Hill, NC.

"Biomarkers of air pollution effects in human clinical and panel studies", Global Variability in Response to Air Pollution, September 4-5, 2008, Chapel Hill, NC.

"Pulmonary and Cardiovascular Responses to Ambient Ultrafine Particles in Rochester, NY", EPA PM Centers Research in Progress Seminar Series, January 13, 2009.

"Human Pulmonary and Cardiovascular Effects of Very Small Particles", EOHSI Seminar Series, Environmental & Occupational Health Sciences Institute, University of Medicine & Dentistry of New Jersey, Newark, NJ, February 26, 2009.

"Synthesis Of Evidence From Toxicology", Health Effects Institute Annual Conference, Portland, OR, May 3, 2009.

"Cardiovascular consequences of particulate air pollution", 27^{h} Annual International Symposium on Man and His Environment in Health and Disease, Dallas, TX, June 26, 2009.

"Ultrafine particles, inflammation, and human health", American College of Toxicology, Palm Springs, CA, November 4, 2009.

"Extrapulmonary effects of ambient ultrafine particles: controlled clinical and animal studies", US Environmental Protection Agency Webinar, December 1, 2010.

"How bad is traffic pollution? Health effects and interventions", Chair of Minisymposium, American Thoracic Society International Conference, San Francisco, CA, May 2012.

"Can We Breathe More Easily? Chronic Respiratory Disease and Air Pollution", Co-Chair of Symposium, Health Effects Institute Annual Conference, May 4-6, 2014.

"NO_2: New Insights on an Old Pollutant", Co-Chair of Symposium, Health Effects Institute Annual Conference, May 3-5, 2015.

"All that wheezes is not asthma: pitfalls in diagnosing a common disease", REACH Travelling Symposium, La Jolla, CA, May 14, 2015.

International Meetings

"Infectivity models in clinical inhalation studies". Invited speaker, 3rd Inhalation Symposium, Advances in Controlled Clinical Inhalation Studies, Hannover, Germany, October 11, 1991.

"Exposure to NO_x: Good, Bad, or Irrelevant?" Invited speaker, Umeå University, Umeå, Sweden, May 14, 1998.

"A marker of ozone exposure in humans: aldehyde products of ozonation in the epithelial lining fluid". Presented at the 7th International Inhalation Symposium, Hannover Medical School, Germany, February 24, 1999.

PRESENTATIONS (continued)

"Lung injury and inflammation in smokers: effects of switching to a 'new' cigarette". World Congress on Lung Health, Florence, Italy, September 1, 2000.

"Air Pollution Particles and Cardiovascular Disease: What is the Connection?" Medical Grand Rounds, University of San Juan VA Hospital, San Juan, PR, February 12, 2001.

"Cardiovascular Effects of Ultrafine Particles", Investigators' workshop, Munich, Germany, April 9, 2003.

"Cardiovascular Effects of Inhaled Nanoparticles in Humans". Invited speaker, Toxic Responses of the Cardiovascular System, Korean Society of Toxicology, Seoul, Korea, June 7, 2007.

"Ultrafine Particles: What Do We Know from Toxicology and Controlled Exposure Studies". Invited speaker, 10^{h} Annual Air Quality and Health Workshop, Vancouver, BC, Canada, February 20, 2013.

"Human Studies of Particularly Problematic Pollutants: Ultrafine Particles & Ozone". Invited Speaker, Umeå University, Umeå, Sweden, June 4, 2014.

EDITORIAL ASSIGNMENTS IN PROFESSIONAL JOURNALS

Associate Editor: Inhalation Toxicology, 2008-2015
Editorial Board: Inhalation Toxicology, 2001-2008
Particle and Fibre Toxicology, 2004-2008

Reviewer: American Journal of Physiology
American Journal of Respiratory and Critical Care Medicine
American Journal of Respiratory Cell and Molecular Biology
Arteriosclerosis, Thrombosis, and Vascular Biology
Applied Occupational and Environmental Hygiene
BMC Pulmonary Medicine
Chest
Circulation
Clinical and Experimental Immunology
European Respiratory Journal
Experimental Lung Research
Human & Experimental Toxicology
Inhalation Toxicology
Journal of General Internal Medicine
Journal of Thrombosis and Haemostasis
Lancet
Medical Principles and Practice
Nanomedicine
Neurology
Particle & Fibre Toxicology
PLOS1
Toxicological Sciences
Toxicology and Applied Pharmacology

MEMBERSHIP AND PARTICIPATION IN NATIONAL ADVISORY AND HEALTH COUNCILS AND RESEARCH REVIEW COMMITTEES

Health Effects Institute grant review panels, (September 1993; January 1996; June 2001, December 2005) and site visits to investigators' laboratories (July 1993, November 1993, November 1995).

Center for Indoor Air Research, review of research proposals, 1993-1997.

US Environmental Protection Agency, grant review panels: May 13-14, 1997, March 24-25, 1998, April 17, 2006.

US Environmental Protection Agency, fellowship review panels: March 10-11, 1999; February 27-28, 2007; July 14-16, 2015.

Science Review Committee, Health Effects Institute, 2010-Present.

Peer Review Medical Research Program (PRMRP) for the Department of Defense Congressionally Directed Medical Research Programs (CDMRP), December, 2015

National Institutes of Health Review Panels:

- NIEHS Program Project Grant review panels: November 2001, May 2002, October 2002.
- NIEHS Review of Environmental Center, November 2002.
- NIEHS K23/24 grant review (Chair), April 8, 2004.
- NHLBI T32 grant review panel, October 13-14, 2004.
- NHLBI General Clinical Research Center review panel, December 8-9, 2004.
- NIEHS Special Emphasis Panel (Chair), October 20, 2005.
- NIAID Asthma Centers review panel, March 8-10, 2006.
- NIH/NIAMS Multidisciplinary Clinical Research Center review panel, October 18-19, 2006.
- NIEHS K12 review panel, February 20, 2007.
- NHLBI Ancillary Studies review panel, August 14, 2008; November 24, 2008; April 7, 2009; July 23, 2009; August 25, 2010; December 10, 2010.
- NIEHS K23 grant review (Chair), August 1, 2011.
- NIAID, Asthma and Allergic Diseases Cooperative Research Centers, March 9-11, 2011, October 1-2, 2012, March 15-17, 2016.
- NHLBI Clinical Trial Pilot Studies (R34), June 27, 2016; October 27, 2016; March 17, 2017.

CONSULTATIONS TO UNIVERSITIES, HEALTH, AND SCIENCE AGENCIES

Environmental Criteria and Assessment Office, U.S. Environmental Protection Agency, to review "Controlled Human Exposure Studies of Oxides of Nitrogen", a chapter of the NO_X Criteria Document, August, 1990.

American Lung Association to review a revision of the Environmental Protection Agency NO_X Criteria Document, March, 1992.

CONSULTATIONS (continued)

California Office of Environmental Health Hazard Assessment to review "Draft Recommendations for an Ambient Air Quality Standard for Nitrogen Dioxide", October, 1992.

Environmental Criteria and Assessment Office, US Environmental Protection Agency, to review draft Ozone Criteria Document, July, 1993.

Environmental Criteria and Assessment Office, US Environmental Protection Agency, to co-author "Air Quality Criteria for Particulate Matter", August, 1994.

External Reviewer, Cooperative Agreement between the Center for Environmental Medicine and Lung Biology and the Health Effects Research Laboratory of the Environmental Protection Agency, 1995-1996.

Office of Research and Development, US Environmental Protection Agency, review of EPA/University of North Carolina Cooperative Agreement, February, 1996.

National Center for Environmental Assessment, US Environmental Protection Agency

Particulate Matter Research Needs Workshop, September 4-6, 1996
Ozone Health Research Needs Workshop, March 25-27, 1997

American Petroleum Institute: "Particulate Air Pollution, Mortality, and Medication Use", 1997.

TRW, Inc.: "Nitrogen Dioxide Toxicity: Acute Exposures in the Range Of 5 to 25 ppm", 1997.

US Air Force, Expert Elicitation Panel, July-December, 1999.

US Environmental Protection Agency, "Exposure to Ozone Air Pollution in Health and Disease: A Provider's Manual", 1999.

California Air Resources Board, Review of Nitrogen Dioxide Toxicity, October 2000.

Southern California Particle Matter Center and Supersite, External Scientific Advisory Panel, October 2000-2005.

California Air Resources Board, Chair, Committee on Vulnerable Populations, 2002-2004.

National Heart, Lung and Blood Institute, “SPARK II” Conference on research initiatives, invited participant, January 20, 2003.

World Health Organization, external reviewer for project, “Systematic review of health aspects of PM, O_3 and NO_2", January 2003.

US Environmental Protection Agency, reviewer of “Air Quality Criteria for Ozone”, 2003-2004.

California Air Resources Board, Review of Clinical Studies of Nitrogen Dioxide Toxicity, June 2004.

Life Sciences Research Office, Hazard Identification & Dose-Response Assessment Committee, 2005.

Health Effects Institute Task Force on Hazardous Air Pollutants, 2005-2006.

US Environmental Protection Agency, contributing author, Science Assessment Support Document for Nitrogen Oxides, 2007-2008.

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Harvard School of Public Health EPA PM Center Scientific Advisory Committee, 2006-2011.

American Petroleum Institute, Ozone Health Evaluation conference, June 5-6, 2007, Rochester, NY.

Reviewer, "Estimating mortality risk reduction and economic benefits from controlling ozone air pollution", National Research Council, National Academies Press, Washington DC 2008.

Workshop: Harmonization of Human Clinical Chamber Air Pollution Exposure Studies, National Institute of Environmental Health Sciences, Research Triangle Park, NC, March 31, 2010.

Institute of Medicine, Committee on Long-Term Health Consequences of Exposure to Burn Pits in Iraq and Afghanistan, 2010-2011.

Workshop: Advancing the Next Generation of Risk Assessment: the Prototypes. US Environmental Protection Agency, Research Triangle park, NC, November 1-2, 2010.

Chair, Panel on Ultrafine Particles. Health Effects Institute, 2011-2013.

Workshop: What Constitutes a Health Effect of Air Pollution? American Thoracic Society and European Respiratory Society, Brussels, Belgium, March 12-13, 2015.

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EDUCATION

Master of Studies in Environmental, Natural Resources, and Energy Law, 2016
Lewis and Clark Law School, Emphasis: Clean Air Act and Climate Change Law

Ph.D., Atmospheric Chemistry, California Institute of Technology, 2005
Thesis: "Spectroscopy and Kinetics of Atmospheric Reservoir Species"
Advisors: Prof. Mitchio Okumura and Prof. Paul Wennberg

B.S., Chemistry, University of Rochester, 2000
Cum laude; Minors: Physics, German, Women's Studies

TEACHING EXPERIENCE

Fulbright U.S. Teaching & Research Scholar Netherlands, 2016-2017
Climate Dynamics Master's Degree Program, Universiteit Utrecht, Netherlands
Associate Professor, Chemistry Department and Environmental Studies Program, 2014-
Reed College, Portland, OR
Assistant Professor, Chemistry Department and Environmental Studies Program, 2009-2014
Reed College, Portland, OR
Visiting Assistant Professor, Chemistry Department, Reed College, Portland, OR 2008-2009
Undergraduate Research Assistant, University of Rochester, Rochester, NY 1999-2000
Teaching Assistant, General Chemistry and Molecular Spectroscopy, University 1996-2000
of Rochester, Rochester NY
Teaching Assistant, Physics Laboratory, University of Rochester, Rochester NY 1998

RESEARCH & PROFESSIONAL EXPERIENCE

Fulbright U.S. Teaching & Research Scholar Netherlands, 2016-2017
Institute for Marine and Atmospheric Research, Universiteit Utrecht, Netherlands
Visiting Scientist at Institute of Energy and Climate Research, 2016-2017
Forschungszentrum Juelich, Germany
National Center for Atmospheric Research Advanced Studies Program (NCAR ASP) 2011-2012
Faculty Fellow and Cooperative Institute for Research in the Environmental Sciences (CIRES)
Visiting Fellow, Boulder, CO (junior sabbatical year)
Postdoctoral Fellow, University of California, Berkeley, CA with R. Cohen 2006-2008
Climate Policy Fellow, Environmental and Energy Study Institute, Washington, DC 2006
Fulbright Fellow, Phys. Chemistry, Freie Universität Berlin, Germany with M. Wolf 2000-2001

COURSES TAUGHT

At Universiteit Utrecht: Atmospheric Composition and Chemical Processes; At Reed: Molecular Structure and Properties; Chemical Reactivity; Environmental Chemistry; Physical Chemistry Lab; Environmental Studies Junior Seminar; Senior Symposium; and as Teaching Assistant in graduate school: Molecular Spectroscopy; Atmospheric Chemistry.

RESEARCH INTERESTS
Atmospheric chemistry; aerosol formation, especially from biogenic VOC precursors; chemistry-climate interactions; air pollution; aerosol chemical composition; field measurements; molecular spectroscopy; atmospheric modeling; chemical kinetics; satellite observations of atmospheric composition; environmental and climate policy.

My research group works to:

- Measure chemical composition of ambient atmospheric aerosol using filter samplers and offline Fourier transform infrared spectroscopy (FTIR), gas chromatography mass spectrometry (GC-MS), ion chromatography (MARGA) and electrospray ionization mass spectrometry (ESI-MS); interpret to derive aerosol formation mechanisms using chemical kinetics modeling and employing ancillary gas-phase composition measurements
- Simulate atmospheric aerosol formation chemistry in kinetics flow tube and environmental chamber experiments
- Model regional atmospheric chemistry, including secondary organic aerosol (SOA) formation, to investigate NOx effects on aerosol formation
- Analyze satellite datasets of NOx and aerosol optical properties to investigate correlations and test modeling results
- Conduct field measurements focusing on anthropogenically-influenced biogenic aerosol formation (e.g., BEACHON-RoMBAS 2011: Rocky Mountain Biogenic Aerosol Study, SOAS 2013: Southeast Oxidant and Aerosol Study)
- Collaborate on analysis of chemical ionization mass spectrometry (CIMS), aerosol mass spectrometry (AMS), and proton transfer reaction mass spectrometry (PTR-MS) data from field and chamber studies, to assess oxidation and secondary organic aerosol formation mechanisms

MENTORING SUMMARY: 25 unique undergraduates, 5 graduate students and 1 postdoc mentored

Senior theses at Reed: Jessica Tobin ('09), Anna Stonestrom ('09), Tara Cass ('10), Caleb Arata ('11), Claire Remington ('11), Lisa Schomaker ('11 Biology, joint with David Dalton), James Bianconi ('13), Danielle Draper ('13), Laura Krause ('13), Kathryn Sackinger ('13), Hannah Allen ('14), Chris Cogell ('14), Alan Tuan ('14), Kang Kang ('15), Natalie Keehan ('15), Eve Mozur ('15), Makoto Kelp ('16), Annelise Hill ('17)
Summer research projects at Reed: Summer 2009: Caleb Arata, Stephanie Dillon, and Li Zha; Summer 2010: Claire Remington, Rhiana Meade, Caleb Arata, Josh Katz, Li Zha, Kathryn Sackinger, Kassandra Reuss-Schmidt (co-advised with David Dalton, Biology); Summer 2012: Danielle Draper and Laura Krause; Summer 2013: Hannah Allen and Danielle Draper; Summer 2014: Kang Kang, Makoto Kelp, Natalie Keehan; Summer 2015: Kang Kang, Natalie Keehan, Catherine Neshyba, Summer 2016: Katie Stellmach (co-advised with Alan Shusterman)
Postdoctoral Fellow: Ben Ayres (2013-2015)
Postbaccalaureate Fellows: Danielle Draper (2014), Kang Kang (2015), Natalie Keehan (2015)
Independent Study projects at Reed: Li Zha (2009), Josh Katz (2010), Rhiana Meade (2011), Makoto Kelp (2014).
Master's thesis committee member at Portland State University: Holly Neill ('12).
PhD thesis committee member at Portland State University: Meenakshi Rao (Ph.D. '16), Jacinda Mainord (current).
Master's thesis co-mentor at Univ. Utrecht: Alessia Mafoddo ('16), Juhi Varendra Nagori ('17)

PUBLICATIONS

underline designates students or postdocs supervised by J.L. Fry

1. H. O. T. Pye, A. Zuend, J. L. Fry, G. Isaacman-VanWertz, S. L. Capps, K. W. Appel, H. Foroutan, L. Xu, N. L. Ng, and A. H. Goldstein, "Coupling of organic and inorganic aerosol systems and the effect on gas-particle partitioning in the southeastern United States," under review, *Atmos. Chem. Phys.,* 2017.

2. P. M. Edwards, K. Aikin, W.P. Dube, J. L. Fry, J.B. Gilman, J.A. de Gouw, M.G. Graus, T.F. Hanisco, J. Holloway, G. Hübler, J. Kaiser, F.N. Keutsch, B.M. Lerne, J.A. Neuman, D.D. Parrish, J. Peischl, I. Pollack, A.R. Ravishankara, J.M. Roberts, T.B. Ryerson, M. Trainer, G.M. Wolfe, Warneke C., S.S. Brown, "The high to low NOx transition in nocturnal biogenic VOC oxidation aloft: Indications of a regime transition in the Southeast U.S.," *Nature Geosciences*, 10, 490–495 (2017).

3. T. Kurtén, K. H. Møller, T. B. Nguyen, R. H. Schwantes, P. K. Misztal, L. Su, P. O. Wennberg, J. L. Fry, H. G. Kjaergaard, "Alkoxy radical bond scissions explain the anomalously low secondary organic aerosol and organonitrate yields from α-pinene + NO_3," *J. Phys. Chem. Letters*, 8, 2826-2834, 2017.

4. B.B. Palm, P. Campuzano-Jost, D.A. Day, A.M. Ortega, J.L. Fry, S.S. Brown, K.J. Zarzana, W. Dube, N.L. Wagner, D.C. Draper, L. Kaser, W. Jud, T. Karl, A. Hansel, C. Gutiérrez-Montes, and J.L. Jimenez, "Secondary organic aerosol formation from in situ OH, O3, and NO3 oxidation of ambient air in an oxidation flow reactor," *Atmos. Chem. Phys.* 17, 5331-5354, 2017.

5. M.C. Blumm, J.L. Fry, and O. Jamin, "Still Crying Out for a 'Major Overhaul' after All These Years — Salmon and the Fourth Failed Biological Opinion on Columbia Basin Hydroelectric Operations," 47 Envtl. L., 2, 287-333 (2017).

6. N. L. Ng, S. S. Brown, A. T. Archibald, E. Atlas, R. C. Cohen, J. N. Crowley, D. A. Day, N. M. Donahue, J. L. Fry, H. Fuchs, R. J. Griffin, M. I. Guzman, H. Herrmann, A. Hodzic, Y. Iinuma, J. L. Jimenez, A. Kiendler-Scharr, B. H. Lee, D. J. Luecken, J. Mao, R. McLaren, A. Mutzel, H. D. Osthoff, B. Ouyang, B. Picquet-Varrault, U. Platt, H. O. T. Pye, Y. Rudich, R. H. Schwantes, M. Shiraiwa, J. Stutz, J. A. Thornton, A. Tilgner, B. J. Williams, R. A. Zaveri, "Nitrate radicals and biogenic volatile organic compounds: Oxidation, mechanisms and organic aerosol," Atmos. Chem. Phys., 17, 2103-2162, 2017.

7. P.A. Feiner, W.H. Brune, D.O. Miller, L. Zhang, R.C. Cohen, P. Romer, A. Goldstein, F. Keutsch, K.M. Skog, P.O. Wennberg, T. Nguyen, A. Teng, J. de Gouw, A. Koss, R.J. Wild, S.S. Brown, A. Guenther, E. Edgerton, K. Baumann, J.L. Fry, "Testing Atmospheric Oxidation in an Alabama Forest," J. Atmos. Sci., 73, 4699–4710, 2016.

8. P. S. Romer, K. C. Duffey, P. J. Wooldridge, H. M. Allen, B. R. Ayres, S. S. Brown, W. H. Brune, J. D. Crounse, J. de Gouw, D. C. Draper, P. A. Feiner, J. L. Fry, A. H. Goldstein, A. Koss, P. K. Misztal, T. B. Nguyen, K. Olson, A. P. Teng, P. O. Wennberg, R. J. Wild, L. Zhang, and R. C. Cohen, "The Lifetime of Nitrogen Oxides in an Isoprene Dominated Forest," Atmos. Chem. Phys., 16, 7623-7637, 2016.

9. B.R. Ayres, H.M. Allen, D.C. Draper, S.S. Brown, R.J. Wild, J.L. Jimenez, D.A. Day, P. Campuzano-Jost, W. Hu, J. de Gouw, A. Koss, R.C. Cohen, K.C. Duffey, P. Romer, K. Baumann, E. Edgerton, S. Takahama, J.A. Thornton, B.H. Lee, F.D. Lopez-Hilfiker, C. Mohr, P.O. Wennberg, T.B. Nguyen, A. Teng, A.H. Goldstein, K. Olson, and J.L. Fry, "Organic Nitrate Aerosol Formation via NO_3 + BVOC in the Southeastern US," Atmos. Chem. Phys., 15, 13377-13392, 2015.

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13. H.M. Allen, D.C. Draper, B.R. Ayres, A. Ault, A. Bondy, S. Takahama, R.L. Modini, K. Baumann, E. Edgerton, C. Knote, A. Laskin, B. Wang, and J.L. Fry, "Influence of mineral dust and seaspray supermicron particle concentrations and acidity on inorganic NO_3^- aerosol during the 2013 Southern Oxidant and Aerosol Study," Atmospheric Chemistry and Physics, 15, 10669–10685, 2015.

14. J.L. Fry, C.Koski, K. Bott, R. Hsu-Flanders, M. Hazell, "Downwind Particulate Matters: Regulatory Implications of Secondary Aerosol Formation from the Interaction of Nitrogen Oxides and Tree Emissions," Environmental Science and Policy, 50, 180-190, 2015.

15. R. A. Washenfelder, A. R. Attwood, C. A. Brock, H. Guo, L. Xu, R. J. Weber, N. L. Ng, H. M. Allen, B. R. Ayres, K. Baumann, R. C. Cohen, D. C. Draper, K. C. Duffey, E. Edgerton, J. L. Fry, W. W. Hu, J. L. Jimenez, B. B. Palm, P. Romer, E. A. Stone, P. J. Wooldridge, and S. S. Brown, "Biomass burning dominates brown carbon absorption in the rural southeastern United States," Geophysical Research Letters, 2014, DOI: 10.1002/2014GL062444.

16. J.D. Proctor, K. Eshleman, T. Chartier, L. Taub-Pervizpour, K. Bott, J.L. Fry, C. Koski, T. Moreno, "Digital field scholarship and the liberal arts: results from a 2012-13 sandbox," Int. J. Digit. Libr., DOI: 10.1007/s00799-014-0126-y, 2014.

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19. J.L. Fry, D.C. Draper, K.J. Zarzana, P. Campuzano-Jost, D.A. Day, J.L. Jimenez, S.S. Brown, R.C. Cohen, L. Kaser, A. Hansel, L. Cappelin, T. Karl, A. Hodzic Roux, A. Turnipseed, C. Cantrell, B.L. Lefer, and N. Grossberg, "Observations of gas- and aerosol-phase organic nitrates at BEACHON-RoMBAS 2011," Atmos. Chem. Phys., 13, 8585-8605, 2013.

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Phys., 12, 8797-8811, 2012.

22. J.L. Fry, A. Kiendler-Scharr, A. W. Rollins, T. Brauers, S. S. Brown, H.-P. Dorn, W. P. Dube, H. Fuchs, A. Mensah, F. Rohrer, R. Tillman, A. Wahner, P. J. Wooldridge, and R. C. Cohen, "SOA from limonene: role of NO_3 in its generation and degradation," Atmos. Chem. Phys., 11, 3879-3894, 2011.

23. C.R. Hoyle, M. Boy, N.M. Donahue, J.L. Fry, M. Glasius, A. Guenther, A.G. Hallar, K. Huff Hartz, M.D. Petters, T. Petäjä, T. Rosenoern, and A.P. Sullivan, "A review of the anthropogenic influence on biogenic secondary organic aerosol," Atmos. Chem. Phys., 11, 321-343, 2011.

24. Fry, J.L., Graf, H.-F., Grotjahn, R., Raphael, M.N., Saunders, C., and Whitaker, R., *The Encyclopedia of Weather and Climate Change: A Complete Visual Guide*, University of California Press, released March 2010. Wrote chapter on Climate Change.

25. A.W. Rollins, J. L. Fry, J. F. Hunter, J. H. Kroll, D. R. Worsnop, S. W. Singaram, and R. C. Cohen, "Elemental analysis of aerosol organic nitrates with electron ionization high-resolution mass spectrometry," Atmos. Meas. Tech., 3, 301-310, 2010.

26. H. Fuchs, S. M. Ball, B. Bohn, T. Brauers, R. C. Cohen, H.-P. Dorn, W. P. Dubé, J. L. Fry, R. Häseler, U. Heitmann, R. L. Jones, J. Kleffmann, T. F. Mentel, P. Müsgen, F. Rohrer, A. W. Rollins, A. A. Ruth, A. Kiendler-Scharr, E. Schlosser, A. J. L. Shillings, R. Tillmann, R. M. Varma, D. S. Venables, G. Villena Tapia, A. Wahner, R. Wegener, P. J. Wooldridge, and S. S. Brown, "Intercomparison of measurements of NO2 concentrations in the atmosphere simulation chamber SAPHIR during the NO3Comp campaign," Atmos. Meas. Tech., 3, 21-37, 2010.

27. Wooldridge, P. J., Perring, A. E., Bertram, T. H., Flocke, F. M., Roberts, J. M., Singh, H. B., Huey, L. G., Thornton, J. A., Murphy, J. G., Fry, J. L., Rollins, A. W., LaFranchi, B. W., and Cohen, R. C.: Total peroxy nitrates (ΣPNs) in the atmosphere: the thermal dissociation-laser induced fluorescence (TD-LIF) technique and comparisons to speciated PAN measurements, Atmos. Meas. Tech. Discuss. 2, 3055-3097, 2009.

28. A.W. Rollins, A. Kiendler-Scharr, J.L. Fry, T. Brauers, S.S. Brown, H.-P. Dorn, W.P. Dubé, H. Fuchs, A. Mensah, T.F. Mentel, F. Rohrer, R. Tillmann, R. Wegener, P.J. Wooldridge, and R.C. Cohen, "Isoprene oxidation by nitrate radical: alkyl nitrate and secondary organic aerosol yields," Atmos. Chem. Phys., 9, 6685-6703, 2009.

29. J.L. Fry, A. Kiendler-Scharr, A.W. Rollins, P.J. Wooldridge, S.S Brown, H. Fuchs, W. Dube, A. Mensah, M. dal Maso, R. Tillmann, H.-P. Dorn, T. Brauers, and R.C. Cohen, "Organic nitrate and secondary organic aerosol yield from NO_3 oxidation of β-pinene evaluated using a gas-phase kinetics/aerosol partitioning model," Atmos. Chem. Phys., 9, 1431-1449, February 23, 2009.

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33. J.L. Fry, J.N. Matthews, J.R. Lane, C.M. Roehl, A. Sinha, H.G. Kjaergaard, and P.O. Wennberg, "OH-Stretch Vibrational Spectroscopy of Hydroxymethyl Hydroperoxide," Journal of Physical Chemistry A, **110**, 7072-7079, June 8, 2006.

34. B.J. Drouin, C.E. Miller, J.L. Fry, D.T. Petkie, P. Helminger, and I.R. Medvedev, "Submillimeter measurements of isotopes of nitric acid," Journal of Molecular Spectroscopy, **236**, 29-34, March 2006.

35. J.L. Fry, B.J. Drouin, and C.E. Miller, "Rotational spectroscopy and dipole moment *cis-cis* HOONO and DOONO," Journal of Chemical Physics, **124**, 084304, February 28, 2006.

36. A.B. McCoy, J.L. Fry, J.S. Francisco, A.K. Mollner, and M. Okumura, "Role of OH-stretch/torsion coupling and quantum yield effects in the first OH overtone spectrum of *cis-cis* HOONO," Journal of Chemical Physics, **122**, 104311, March 8, 2005.

37. J.L. Fry, S.A. Nizkorodov, M. Okumura, C.M. Roehl, J.S. Francisco, and P.O. Wennberg, "*Cis-cis* and *trans-perp* HOONO: Action spectroscopy and isomerization kinetics," Journal of Chemical Physics, **121**, 1432-1448, July 15, 2004.

38. B.J. Drouin, J.L. Fry, and C.E. Miller, "Rotational spectroscopy of *cis-cis* HOONO," Journal of Chemical Physics, **120**, 5505-5508, March 22, 2004.

39. S.A. Nizkorodov, J.D. Crounse, J.L. Fry, C.M. Roehl, and P.O. Wennberg, "Near-IR photodissociation of peroxy acetyl nitrate," Atmospheric Chemistry and Physics, **4**, 1269-1289, March 1, 2004.

TALKS (*INVITED)

1. *J.L. Fry, "Nitrate radical initiated atmospheric particulate matter formation in forests: Isoprene vs. terpenes," Wolfson Atmospheric Chemistry Laboratory, York University, England, Mar. 23, 2017.

2. J.L. Fry, "Constraining Secondary Organic Aerosol (SOA) production from NO_3 + isoprene based on nighttime aircraft power plant plume transects during SENEX 2013," Atmospheric Physics and Chemistry Group meeting, Institute for Marine and Atmospheric Research Utrecht (IMAU), Universiteit Utrecht, Utrecht, the Netherlands, Jan. 21, 2017.

3. *J.L. Fry, "Nitrogen oxides (NOx) effects on atmospheric particulate matter formation in forests: Anthropogenically-triggered biogenic aerosol production," Atmospherica group, Aarhus University, Denmark, Nov. 3, 2016.

4. *J.L. Fry, "Chamber observations of secondary organic aerosol (SOA) yield, molecular composition, and physical properties from NO_3 vs. O_3 reactions with monoterpenes: Seeking RO_2 mechanistic explanations of SOA diversity," COPENHEL joint group meeting, Copenhagen University, Sept. 21, 2016.

5. *J.L. Fry, "Nitrogen oxides (NOx) effects on atmospheric particulate matter formation in forests: Anthropogenically-triggered biogenic aerosol production," Institute for Energy and Climate IEK-8 Seminar, Forschungszentrum Juelich, Juelich, Germany, May 19, 2016.

6. *J.L. Fry, "Chamber studies of secondary organic aerosol (SOA) yield and composition from NO_3 reactions with monoterpenes," Atmospheric Physics and Chemistry Group meeting, Institute for Marine and Atmospheric Research Utrecht (IMAU), Universiteit Utrecht, Utrecht, the Netherlands, Apr. 5, 2016.

7. *J.L. Fry, "Nitrogen oxides (NOx) effects on atmospheric particulate matter formation in forests: Anthropogenically-triggered biogenic aerosol production," EPA STAR grant review meeting, Environmental Protection Agency, Research Triangle Park, NC, Mar. 14, 2016.

8. *J.L. Fry, "Nitrogen oxides (NOx) effects on atmospheric particulate matter formation in forests: Anthropogenically-triggered biogenic aerosol production," Institute for Marine and

Atmospheric Research Utrecht (IMAU) Colloquium, Universiteit Utrecht, Utrecht, the Netherlands, Mar. 8, 2016.

9. J.L. Fry, D. Draper, H. Kang, A. Laskin, J. Laskin, B. Wang, P. Lin, "Size-dependent molecular-level characterization of secondary organic aerosol from O_3 vs. NO_3 oxidation of monoterpenes," Pacifichem (The International Chemical Congress of Pacific Basin Societies) 2015 Meeting, Honolulu, HI, Dec. 19, 2015.

10. *J.L. Fry, "Chamber studies of secondary organic aerosol (SOA) yield and composition from NO_3 reactions with monoterpenes," Workshop on NO_3 radicals and BVOCs, Georgia Institute of Technology, GA, June 23, 2015.

11. J.L. Fry, B. Ayres, D. Draper, H. Allen, H. Kang, S. Brown, J. Jimenez, D.Day, S. Thompston, W. Hu, P. Campuzano-Jost, D. Farmer, Y. Desyaterik, "NO_3-initiated biogenic SOA production: Insights from field and chamber studies," Wennberg/Okumura/Seinfeld group meeting, California Institute of Technology, May 14, 2015.

12. J.L. Fry, B. Ayres, D. Draper, H. Allen, H. Kang, S. Brown, J. Jimenez, D.Day, S. Thompston, W. Hu, P. Campuzano-Jost, D. Farmer, Y. Desyaterik, "NO_3-initiated biogenic SOA production: Insights from field and chamber studies," American Chemical Society National Meeting, Denver, CO, Mar. 24, 2015.

13. *J.L.Fry, "When NO_3 met terpene," Telluride Science Research Center, July 28, 2014.

14. J.L.Fry, B. Ayres, H. Allen, D.C. Draper, "NO_y fate in the southeastern U.S.: NO_3-initiated organonitrate production vs. dust uptake of HNO_3," SOAS/SENEX Data Meeting, Boulder, CO, April 1, 2014.

15. *J.L. Fry, "Student-driven field projects in an Environmental Chemistry course," Association of Environmental Studies and Sciences Annual Meeting, Pittsburg, PA, Jun 21, 2013.

16. *J.L. Fry, "New insights into atmospheric particle formation in forests," seminar presentations at Reed College, Pacific University, and Willamette University, October 2012.

17. *J.L. Fry, D. Draper, J.N. Smith, S.S. Brown, J.D. Ortega, P. Winkler, R.C. Cohen, K.J. Zarzana, P. Edwards, W.P, Dube, D.K. Farmer, K. Barsanti, L. Krause, "NO_3 oxidation of biogenic VOCs: an alternate take on NOx suppression of SOA formation from monoterpenes," American Chemical Society National Meeting, Denver, CO, Aug. 21, 2012.

18. *J.L. Fry, "NO_3 vs O_3 oxidation of BVOC: an alternate take on NOx suppression of SOA formation and a renewed plea for speciated treatment of NO_3 + BVOC in SOA models," Telluride Science Research Center, July 29 – Aug. 3, 2012.

19. *J.L Fry, "NO_3-initiated secondary organic aerosol (SOA) production and NOy chemistry in a pine forest," Colorado State University Atmospheric Chemistry Group Meeting, Mar. 26, 2012.

20. *J.L Fry, "NO_3-initiated secondary organic aerosol (SOA) production and NOy chemistry in a pine forest (BEACHON-RoMBAS 2011)," National Oceanic and Atmospheric Administration Earth Systems Research Lab (NOAA ESRL) Chemical Sciences Division Seminar, Mar. 14, 2012.

21. *J.L Fry, "Climate Change and the role of Atmospheric Aerosols," Environmental Program, Colorado College, Jan. 31, 2012.

22. J.L. Fry, D. Draper, K.J. Zarzana, S.S. Brown, B. Dube, N. Wagner, R.C. Cohen, B.B. Palm, A.M. Ortega, P. Campuzano Jost, D.A. Day, J.L. Jimenez, W.H. Brune, T.Karl, L.Kaser, W.Jud, A. Hansel, "Gas- and aerosol-phase chemistry of nitrogen oxides (NOy) in a pine forest

(BEACHON-RoMBAS 2011)," American Geophysical Union Fall Meeting, San Francisco, CA, December 5-9, 2011.

23. *J.L. Fry, "Role of organic nitrates in secondary organic aerosol (SOA) production in forests," University of Colorado Analytical Chemistry Seminar, Nov. 14, 2011.

24. *J.L. Fry and D. Draper, "Field and laboratory studies of secondary organic aerosol formation from biogenic VOCs," Biosphere-Atmosphere Interactions Group, Atmospheric Chemistry Division, National Center for Atmospheric Research, Oct. 10, 2011.

25. *J.L. Fry, "Nighttime formation and processing of atmospheric organic aerosol by nitrate radical," Special symposium in honor of 100 year anniversary of Marie Curie's Nobel Prize in Chemistry, 242nd American Chemical Society National Meeting, Denver, CO, Aug. 30, 2011.

26. R.D. Meade, C.M. Arata, and J.L. Fry, "Secondary organic aerosol (SOA) formation from a-pinene: Chamber studies of kinetics, yield, and aerosol chemical composition," 242nd American Chemical Society National Meeting, Denver, CO, Aug. 28, 2011. (*student presented*)

27. L. Zha and J.L. Fry, "Temporal correlations of NO_2 and aerosol optical depth observed by satellites over the western United States," American Chemical Society Northwest Regional Meeting, Jun 26, 2011. (*student presented*)

28. K. Sackinger and J.L. Fry, "Kinetic modeling of nitrate radical impact on formation and revolatilization of atmospheric organic aerosol," American Chemical Society Northwest Regional Meeting, Jun 26, 2011. (*student presented*)

29. *J.L. Fry, "Chemistry of Earth's Atmosphere: From Global Climate Change to Local Air Quality," American Chemical Society Portland Section, May 19, 2011.

30. *J.L. Fry, J. Katz, K. Sackinger, L. Zha, R.C. Cohen, A.W. Rollins, A. Kiendler-Scharr, S.S. Brown, "NOx effects on organic aerosol: Aerosol production from NO_3 + biogenic hydrocarbons vs. NO_3 heterogeneous loss," 240th American Chemical Society National Meeting, Boston, MA, August 24, 2010.

31. *Lectures on Atmospheric Chemistry and Long-range transport and meteorology of the Arctic and sub-Arctic for Juneau Icefield Research Program, Juneau, Alaska, August 2-9, 2010.

32. *J.L. Fry, "NOx effects on atmospheric aerosol formation: Suppression? Enhancement? Innocent bystander?" Environmental Science and Management Seminar Series, Portland State University, May 21, 2010.

33. *Lectures on Climate Change and Geoengineering for Pan-American Advanced Studies Institute Climate Change summer school, La Selva Biological Station, Costa Rica, May 7-10, 2010.

34. *J.L. Fry, "Atmospheric chemistry of nitrogen oxides," Department of Chemistry, Haverford College, December 8, 2008.

35. *J.L. Fry, "Atmospheric chemistry of nitrogen oxides," Department of Chemistry, Drexel University, December 10, 2008.

36. *J.L. Fry, "Atmospheric chemistry of nitrogen oxides," Department of Chemistry, Lewis & Clark College, November 25, 2008.

37. *J.L. Fry, "Atmospheric chemistry of nitrogen oxides," Department of Chemistry, Vassar College, November 3, 2008.

38. *J.L. Fry, "Atmospheric chemistry of nitrogen oxides," Department of Chemistry, Portland State University, October 24, 2008.

39. *J.L. Fry, "Atmospheric chemistry of nitrogen oxides," Division of Atmospheric Sciences & Global Change, Pacific Northwest National Lab, August 22, 2008.

40. *J.L. Fry and A. Stine, "Intro to Atmospheres for Architects," Department of Architecture, University of California – Berkeley, July 7, 2008.

41. *J.L. Fry, "Atmospheric chemistry of nitrogen oxides," Berkeley Atmospheric Science Center Seminar Series, University of California – Berkeley, April 29, 2008.

42. *J.L. Fry, "Atmospheric chemistry: From air pollution to climate change," Reed College, March 13, 2008.

43. J.L. Fry, "NO_3 + monoterpenes at the SAPHIR (Simulation of Atmospheric PHotochemistry In a large Reaction) Chamber," NO_3 Intercomparison Campaign Data Discussion Meeting, Forschungszentrum Jülich, Jülich, Germany, November 29, 2007.

44. *J.L. Fry, "Spectroscopy and kinetics of atmospheric reservoir species," Department of Chemical Engineering, Carnegie Mellon University, Pittsburgh, PA, April 17, 2006.

45. *J.L. Fry, "Spectroscopy and kinetics of atmospheric reservoir species…and some thoughts on scientists in DC," Department of Atmospheric and Oceanic Science, University of Maryland, College Park, MD, April 7, 2006.

46. *J.L. Fry, M. Okumura, and P.O. Wennberg, "Spectroscopy and kinetics of atmospheric reservoir species: HOONO," Laboratory of Atmospheric Chemistry, Paul Scherer Institute, Villigen, Switzerland, December 19, 2005.

47. *J.L. Fry, M. Okumura, and P.O. Wennberg, "Spectroscopy and kinetics of atmospheric reservoir species: HOONO and $HOCH_2OOH$," National Oceanic and Atmospheric Administration Aeronomy Lab, Boulder, CO, December 12, 2005.

48. *J.L. Fry, "Spectroscopy and kinetics of HOONO and hydroxymethyl hydroperoxide (HMHP)," Berkeley Atmospheric Sciences Center, University of California – Berkeley, November 18, 2005.

49. *J.L. Fry, "Chemistry in Earth's Atmosphere," Oceanside Branch of the American Association of University Women, Vista Chico, CA, October 15, 2005.

50. J.L. Fry, S. Nizkorodov, C.M. Roehl, A.B. McCoy, J.S. Francisco, A.K. Mollner, B.J. Drouin, M.Okumura and P.O Wennberg, "Kinetics and Spectroscopy of HOONO," ACCESS VIII Colloquium of the Gordon Research Conference on Atmospheric Chemistry, Yellowstone National Park, September 3, 2005.

51. J.L. Fry, S.A. Nizkorodov, C.M. Roehl, M. Okumura, P.O. Wennberg, A.B. McCoy, and J.S. Francisco, "*Cis-cis* and *trans-perp* HOONO: I. Action spectroscopy and isomerization kinetics, II. Simulating the spectrum: Torsion – OH coupling," 228th American Chemical Society National Meeting, Philadelphia, PA, August 22, 2004.

52. J.L. Fry, S.A. Nizkorodov, C.M. Roehl, M. Okumura, P.O. Wennberg, C.E.Miller, and B.J. Drouin, "Action spectroscopy, isomerization kinetics, and rotational spectroscopy of HOONO," Dow Chemical Company, Midland, MI, May 20, 2004.

53. J.L. Fry, S.A. Nizkorodov, C.M. Roehl, M. Okumura, P.O. Wennberg, C.E.Miller, and B.J. Drouin, "Action spectroscopy, isomerization kinetics, and rotational spectroscopy of HOONO," National Oceanic and Atmospheric Administration Aeronomy Lab, Boulder, CO, April 16, 2004.

54. J.L. Fry, C.E. Miller, and B.J. Drouin, "Rotational spectroscopy of *cis-cis* HOONO," Earth Sciences Division, Jet Propulsion Laboratory, Pasadena, CA, March 15, 2004.

55. J.L. Fry, M. Okumura, and P.O. Wennberg, "Peroxynitrous Acid (HOONO) in the Atmosphere: Photochemistry and Kinetics," Southern California Inorganic Photochemistry Conference, Catalina Island, CA, October 18-19, 2003.

56. J.L.Fry, S. Nizkorodov, C.M.Roehl, M. Okumura, P.O. Wennberg, "Action Spectroscopy of HOONO: Two conformers." The Ohio State University Molecular Spectroscopy Conference, Columbus, OH, June 16-20, 2003.

POSTER PRESENTATIONS

1. H. Kang, D.A. Day, J. Krechmer, B.R. Ayres, N.I. Keehan, S. Thompson, W. Hu, P. Campuzano-Jost, J.C. Schroder, H. Stark, A. Ranney, P.J. Ziemann, K.J. Zarzana, R.J. Wild, W. Dubé, S.S. Brown, J.L. Fry, J.L. Jimenez, Secondary organic aerosol mass yields from the dark NO_3 oxidation of α-pinene and Δ-carene: effect of RO_2 radical fate. *AGU Fall Meeting*, **2016**, https://agu.confex.com/agu/fm16/meetingapp.cgi/Paper/135842.

2. J.L. Fry, et al., "Secondary Organic Aerosol (SOA) from NO_3 + BVOC: Field and lab evidence of its variable importance and implications for power plant downwind particulate matter," Atmospheric Chemistry Gordon Research Conference, Waterville Valley, NH, Aug. 2-6, 2015.

3. N.I.Keehan, B. Ayres, J.L. Fry, "Detecting Organic Nitrates using Thermal Dissociation Cavity Ringdown Spectrometry," American Chemical Society National Meeting, Denver, CO, Mar. 23, 2015.

4. D.C. Draper, D.K. Farmer, Y. Desyaterik, J.N. Smith, J.L. Fry, "Comparison of NO_2 Effects on Secondary Organic Aerosol (SOA) Formation From Ozonolysis of Four Monoterpenes," American Association for Aerosol Research National Meeting, Minneapolis, MN, Oct. 12-16, 2015.

5. K. Kang, B. Ayres, S.S. Brown, D. Day, S. Thompson, W. Hu, P. Campuzano-Jost, H. Stark, J. Jimenez, A. Ranney, P. Ziemann, and J.L. Fry, "Chamber Study Exploring Aerosol Formation from NO3 Oxidation of α-pinene and Δ-carene under Varying HO2/RO2/NO3 Regimes," American Geophysical Union National Meeting, San Francisco, CA, December 16, 2014.

6. B. Ayres, D.C. Draper, H. Allen, R. Wild, S.S. Brown, D. Day, P. Campuzano-Jost, B. Palm, W. Hu, J. Jimenez, B. Lee, C. Mohr, J. Thornton, K. Duffey, P. Romer, R. Cohen, A. Koss, J. de Gouw, K. Olson, A. Goldstein, J.L. Fry, "NOy fate at SOAS 2013: Organonitrate Formation via NO_3 + BVOC and Inorganic Nitrate Formation via Heterogeneous Uptake of HNO_3," American Geophysical Union National Meeting, San Francisco, CA, December 17, 2014.

7. A. Tuan, B. Ayres, and J.L. Fry, "The effect of Brooklyn Rail Yard on air quality in Portland: A study of black carbon, particulate matter, and other air pollutants," Urban Ecology and Conservation Symposium, Portland State University, Portland, OR, February 10, 2014.

8. B.R. Ayres, D.C. Draper, H. Allen, R. Wild, S.S. Brown, A. Koss, J.A. de Gouw, K.F. Olson, A.H. Goldstein, K. Baumann, E. Edgerton, and J.L. Fry, "Reactive nitrogen fate in the southeastern U.S.: Preliminary results from the SOAS campaign," American Geophysical Union National Meeting, San Francisco, CA, December 9, 2013.

9. D.C. Draper, D. K. Farmer, Y. Desyaterik, J.L. Fry, "SOA yield from ozonolysis of BVOC at varying NO_2 concentrations," American Association for Aerosol Research National Meeting, Portland, OR, Sept 30-Oct 4, 2013.

10. J.L. Fry, B. Ayres, D.C. Draper, H. Allen, R. Wild, and S. Brown, "Fate of reactive nitrogen in the southeastern United States: Preliminary results from the Southern Oxidant and Aerosol

Study, June-July, 2013," Atmospheric Chemistry Gordon Research Conference, Mt. Snow Resort, West Dover, VT, July 28 - August 2, 2013.

11. D.C. Draper and J.L. Fry, "NOx effects on nighttime secondary organic aerosol formation," American Chemical Society National Meeting, New Orleans, LA, April 7-11, 2013. *Won Certificate of Merit from the Division of Environmental Chemistry.*

12. L. Krause, J. Mainord, J.D. Katz, and J.L. Fry, "Quantification of Organic Functional Groups of Ambient Aerosol using FTIR," Urban Ecology and Conservation Symposium, Portland State University, Portland, OR, February 11, 2013.

13. D.C. Draper and J.L. Fry, "NOx effects on nighttime secondary organic aerosol (SOA) formation," Urban Ecology and Conservation Symposium, Portland State University, Portland, OR, February 11, 2013.

14. J.L. Fry and C. Koski, "NO_3-initiated oxidation of plant emissions as a source of secondary organic aerosol: Speciated BVOC yield parameterization and policy implications," American Meteorological Society National Meeting, Austin, TX, January 7, 2013.

15. J.L. Fry, D. Draper, S.S. Brown, J.N. Smith, R.C. Cohen, K.J. Zarzana, B.B. Palm, J.L. Jimenez, L. Kaser, A. Hansel, T. Karl, J. Ortega, P. Winkler, K.C. Barsanti, "NO_3 –initiated oxidation of biogenic hydrocarbons: Nighttime sink of volatile organic compounds and source of secondary organic aerosol," CIRES Rendezvous, Boulder, CO, April 24, 2012, and Biogenic Hydrocarbons Gordon Research Conference, Lewiston, ME, June 24-29, 2012.

16. C.M. Arata, R.D. Meade, and J.L. Fry, "Chamber studies of secondary organic aerosol formation (SOA) from O_3 and NO_3 + a-pinene," 242nd American Chemical Society National Meeting, Denver, CO, Aug. 29, 2011.

17. J.L. Fry, J.D. Katz, T. Dittrich, and K. Redell, "Summertime ozone and airborne particle concentrations measured on the Juneau Icefield (58°N)," American Geophysical Union Fall Meeting, San Francisco, CA, December 15, 2010.

18. J.L. Fry, J.D. Katz, and R.D. Meade, "Daytime vs. nighttime NOx effects on aerosol formation: Constraints from ambient measurements and chamber studies," American Association of Aerosol Research National Meeting, Portland, OR, October 28, 2010.

19. C. Arata, L. George, and J.L. Fry, "Nitrogen dioxide (NO_2) air pollutant concentrations in Portland's atmospheric outflow," Urban Ecology and Conservation Symposium, Portland State University, Portland, OR, January 25, 2010.

20. J.L. Fry, A. Kiendler-Scharr, A.W. Rollins, P.J. Wooldridge, S.S. Brown, H. Fuchs, W. Dube, A. Mensah, M. Dal Maso, R. Tillmann, H.-P. Dorn, T. Brauers, R.C. Cohen; C. Arata, S. Dillon, A. Stonestrom, J.D. Tobin, L. Zha, "Secondary organic aerosol and organic nitrate yields from NO_3 + monoterpenes; NOx effects on aerosol formation and composition," Atmospheric Chemistry Gordon Research Conference, Waterville Valley, NH, August 26-31, 2009.

21. J.L. Fry, A. Kiendler-Scharr, A.W. Rollins, P.J. Wooldridge, S.S. Brown, H. Fuchs, W. Dube, A. Mensah, M. Dal Maso, R. Tillmann, H.-P. Dorn, T. Brauers, R.C. Cohen, "Observed Secondary Organic Aerosol (SOA) and Organic Nitrate Yields From NO_3 Oxidation of β-pinene and Limonene," American Geophysical Union Fall Meeting, San Francisco, CA, December 14-18, 2008.

22. A.W. Rollins, J.L. Fry, A. Kiendler-Scharr, P.J. Wooldridge, S.S. Brown, H. Fuchs, W. Dube, A. Mensah, M. Dal Maso, R. Tillmann, H.-P. Dorn, T. Brauers, R.C. Cohen, "Observed secondary organic aerosol (SOA) and organic nitrate yields from NO_3 oxidation of isoprene," American Geophysical Union Fall Meeting, San Francisco, CA, December 14-18, 2008.

23. H.-P. Dorn et al, "Intercomparison Campaign of NO_3 and N_2O_5 Detection Techniques at the Atmosphere Simulation Chamber SAPHIR," Americal Geophysical Union Fall Meeting, San Francisco, CA, December 10-14, 2007.
24. A.W. Rollins, J.L. Fry, P.J. Wooldridge, and R.C. Cohen, "Detection of NO_3 and N_2O_5 by thermal dissociation with LIF detection of NO_2 and NO_3,"Americal Geophysical Union Fall Meeting, San Francisco, CA, December 10-14, 2007.
25. J.L. Fry, S.A. Nizkorodov, A.B. McCoy, J.S. Francisco, A.K. Mollner, B.J. Drouin, M. Okumura, and P.O. Wennberg, "Kinetics and Spectroscopy of HOONO," Atmospheric Chemistry Gordon Research Conference, Big Sky, MT, September 4-9, 2005.
26. J.L. Fry, S. Nizkorodov, C.M. Roehl, J.D. Crounse, M. Okumura, and P.O. Wennberg, "Action Spectroscopy of HOONO." 20th Informal Symposium on Kinetics and Photochemical Processes in the Atmosphere, Riverside, CA, February 18, 2003.
27. J.L. Fry, "Weakly bound complexes of importance in the atmosphere," Caltech Women's Science Symposium, Pasadena, CA, November 12-13, 2002.
28. J.L. Fry, C.M. Liberatore, L.J. Rothberg, "Vibrational spectroscopy of interfaces using sum frequency generation." 219th American Chemical Society National Meeting, San Francisco, CA, March 26, 2000.
29. J.L. Fry, N. Simhai, E. Bones, "University of Rochester Undergraduate Chemistry Council: "Bonding" students with faculty and the real world outside campus." 219th American Chemical Society National Meeting, San Francisco, CA, March 26, 2000.
30. L. Balogh, D.R. Swanson, J. Fry, D.A. Tomalia, "Component transfer without interface resistance: Interactions of copper(II) ions with poly(amidoamine) dendrimers." 216th American Chemical Society National Meeting, Boston, MA, August 23, 1998.

OTHER PROFESSIONAL ACTIVITIES

Panel presenter and co-convener, "Pollution Analysis in Urban and Rural Settings" at Association for Environmental Studies and Sciences 2013 conference, Pittsburgh, PA, June 19-22, 2013

Member, Urban Ecology Research Consortium Steering Committee of Portland/Vancouver, 2012-2015.

Member, American Meteorological Society Scientific and Technological Activities Commission, Committee on Atmospheric Chemistry, 2011-2014.

Program co-chair and convener, 5th annual Symposium on Aerosol-Cloud-Climate Interactions and Chair, Chemistry at the Climate Science / Policy Interface session, American Meteorological Society National Meeting, Austin, TX, January 6-10, 2013.

Chair and convenor of three joint sessions, Conference on Climate Variability and Change and Symposium on Policy and Socio-Economic Research, American Meteorological Society National Meeting, January 12-15, 2009.

Chair, Conference on Climate Variability and Change session on "Impacts of Climate Change" and Conference on Climate Variability and Change and Symposium on Policy and Socio-Economic Research joint session on "Climate Policy, Vulnerability, and Adaptation," American Meteorological Society National Meeting, January 20-24, 2008.

Proposal reviewer and panelist: National Oceanic and Atmospheric Administration (NOAA), National Science Foundation (NSF), Pacific Northwest National Lab User Facility

Manuscript reviewer: Journal of Chemical Physics, Atmospheric Chemistry and Physics, Journal of Geophysical Research, Science of the Total Environment, Environmental Science and Technology, Atmospheric Environment, Journal of Atmospheric Chemistry

Memberships: American Chemical Society, American Geophysical Union, American Meteorological Society, Environmental Science Women's Network, Environmental Chemistry at Liberal Arts Colleges

SELECTED SERVICE AND VOLUNTEER ACTIVITIES

Served as liaison to Reed facilities and architects in discussions about Chemistry Building renovations, 2014-2015

Served as mentor to two Reed College Assistant Professors, 2014-2015

Chair, Environmental/Analytical Chemistry visiting faculty search in 2013-2014

Member, Inorganic Chemistry visiting faculty search in 2013-2014 and Biochemistry tenure track faculty search in 2014-2015

Presented at OMSI Climate Science Communication Workshop, Sept. 2013

Co-PI, American Chemical Society Portland Local Section Climate Science Challenge Grant, 2013-2014.

Secretary, Math and Natural Sciences Division, Reed College, 2012-2013.

Member, Reed College ad hoc committee on Introductory Sciences, 2014-2015, teaching and research strategic planning committee, 2013-2014, Environmental Studies Committee (2008-2015; Chair 2014-2015), Fellowships and Awards Committee (2009-2015), Sustainability Committee (2009-2010), and Canyon Committee (2010-2011)

Reed College Chemistry Department Seminar Chair, 2009-2011

Developed air quality *Science on a Sphere* exhibit with staff at Oregon Museum of Science and Industry, February 2010

Speaker at International Day of Climate Action, Pioneer Courthouse Square, Portland, OR, Oct. 24, 2009

Mentored high school student science fair project on ozone absorption by water, 2008

Organized Berkeley Great Decisions Foreign Policy Discussion Group, 2008

Guest Commentary on *RealClimate.org*, 2007

Opinion Editorials for *Midland Daily News*, the Environmental and Energy Study Institute, and the *Oregonian* newspaper

Presented keynote lecture to the Carlsbad-Oceanside-Vista Chico branch of the American Association of University Women on "Chemistry in Earth's Atmosphere," Oct. 15, 2005

Organized Pasadena Great Decisions Foreign Policy Discussion Group, 2002-2005

Served on Caltech Graduate Student Council Academics Committee, 2002-2005, including serving as Secretary, 2003-2004

Editor of Caltech graduate student publication, the Technique (a 300-page guide to Caltech and Pasadena distributed to incoming graduate students), 2004-2005

Served as board member of the Aero Association of the California Institute of Technology (flying club with 7 airplanes and 100 members), 2004-2005

Served on the University of Rochester Undergraduate Chemistry Council, 1997-2000, including serving as Chair, 1999-2000

ADDITIONAL CERTIFICATION

[redacted]

SELECTED HONORS

Henry Dreyfus Teacher-Scholar Award, 2017

Fulbright U.S. Scholar Award to the Netherlands, 2016

Arthur F. Scott Endowed Chair in Chemistry, 2016

EPA Early Career Award, 2013

Gordon Research Conferences Travel Award for PUI Faculty, 2012

National Center for Atmospheric Research (NCAR) Advanced Study Program Faculty Fellowship, 2011

Cooperative Institute for Research in the Environmental Sciences Visiting Fellow, 2011-2012

Encyclopedia of Weather and Climate Change selected as ASLI (Atmospheric Science Librarians International) Book of the Year for 2010 in the Popular category

Selected to participate in Atmospheric Chemistry Gordon Research Conference, 2007, 2009, 2013, 2015; Biogenic Hydrocarbons GRC, 2012, 2016

Selected to participate in US/Nordic Workshops on Biogenic Secondary Organic Aerosol, 2007-2008

Travel Grant Award from UC Berkeley Science, Technology & Engineering Policy White Paper Competition, 2007

American Association of University Women Dissertation Fellowship, 2005

Selected to participate in Atmospheric Chemistry Gordon Research Conference and ACCESS VIII Colloquium for emerging scientists, 2005

Dow Chemical Company Travel Fellowship, 2003

National Science Foundation Graduate Research Fellowship, 2001-2004

Fulbright Fellowship, 2000-2001

Flagg Award (2000) and Merck Award (1999) for achievement in chemistry (U. Rochester)

CURRICULUM VITAE

Gordon J. Fulks

(updated 08/10/17)

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Education

B.S., The University of Chicago 1967 in Physics
M.S., The University of Chicago 1974 in Physics
Ph.D., The University of Chicago 1975 in Physics

Doctoral thesis: *Fulks, G. J. (1975), Solar modulation of galactic cosmic ray electrons, protons, and alphas, J. Geophys. Res., 80(13), 1701–1714, doi:10.1029/JA080i013p01701.*

Professional Experience

1967 to 1971 (Summers)	Research Assistant, Tektronix, Inc, Beaverton, Oregon
1970 to 1977	Research Assistant, Laboratory for Astrophysics and Space Research, the Enrico Fermi Institute of the University of Chicago
1978 to 1992	Technical Staff, Mission Research Corporation, Santa Barbara, California
1992 to present	President, Gordon Fulks and Associates, La Center, Washington

Selected Technical Publications (that are available to the public)

Fulks, G., and P. Meyer. "Cosmic ray electrons in the atmosphere." Zeitschrift fuer Geophysik 40.6 (1974): 751-759.

Fulks, G "ISIS Topside Sounder Data Gathered on Kwajalein Atoll during the Summers of 1977 and 1978.", Mission Research Corporation (1980).

Fulks, G "HF Ground Wave Propagation Over Smooth and Irregular Terrain," Mission Research Corporation (1981).

Fulks, G "Letter to the California Air Resources Board October 26, 2011, "http://www.scientificintegrityinstitute.org/Fulks102611.pdf (2011)

D'Aleo, J, Doiron, H, Easterbrook, D, Eck, T, Frank, N, Fulks, G, Gray, W, Horn, A, Sheahen, T, Singer, F, Lupo, A, Khandekar, M, Taylor, G, Wallace, J, Wolf, G "Scientists respond to the Obama Administration's National Climate Assessment 2014." https://www.scribd.com/doc/224538945/NCA-Rebuttal (2015)

Fulks, G "Letter to the South Coast Air Quality Management District," http://www.scientificintegrityinstitute.org/AQMPFulks081516.pdf (2016)

In addition Dr Fulks has written many essays for various Newspapers and Internet blogs.

JAMES NEVILLE GALLOWAY
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EDUCATION

1966-1972 Ph.D. (Chemistry); University of California, San Diego; La Jolla, California, *Man's Alteration of the Natural Geochemical Cycles of Selected Trace Metals*
1962-1966 B.A. (Biology, Chemistry); Whittier College; Whittier, California

EMPLOYMENT

1976- University of Virginia
College and Graduate School of Arts and Sciences
2009-2012 Associate Dean for the Sciences
Department of Environmental Science
2008- Sidman P. Poole Professor
1996-2001 Chair
1988-2008 Professor
1982-1988 Associate Professor
1976-1982 Assistant Professor
2001- Marine Biological Laboratory, Visiting Scientist (summers)
1974-1976 Postdoctoral Associate, Ecology and Systematics; Cornell University
1972-1974 Potter and Co-Owner, Shenandoah Crafts Inc, Lexington Virginia

COURSES TAUGHT

University of Virginia: Atmospheric Chemistry; Global Biogeochemical Cycles; Introduction to Air Quality; Chemistry of Natural Waters; Resources and the Environment; Environmental Chemistry; Nitrogen Seminar
University of California, San Diego: Man and the Environment

MAJOR AWARDS, HONORS

2015 Awarded, Thomas Jefferson Award for Conservation, Virginia Museum of Natural History.
2014 Named, Highly Cited Researcher in the area of Ecology & Environment; *The World's Most Influential Scientific Minds, 2014*
2013 Best Research Paper Award 2012 and Most Highly Cited Paper for the journal *Environmental Development* for the Leach et al., 2012 paper.
2012 Awarded, 2012 Whittier College Poet Award for Alumnae Achievement
Visiting Scholar, Whitter College, March 6-8
2011 Selected, Distinguished Guest Lecturer, Environmental Chemistry Group of the Royal Society of Chemistry, London.

Elected, Board of Trustees, Marine Biological Laboratory, Woods Hole, MA.
2010 Elected, Member of Raven Society, University of Virginia
2008 Elected, Fellow of American Geophysical Union.
Awarded, Tyler Prize for Environmental Achievement (shared with Harold Mooney)
Awarded, Sidman P. Poole Professorship of Environmental Sciences.
2007 Awarded, Sesquicentiennial Associateship for 2008-2009.
2006 Galloway et al., 2004 *Biogeochemistry* paper is the third most cited paper in the field of ecology/environment that was published in the last two years.
Re-appointed to the executive committee of the EPA Science Advisory Board for a three-year period, October 2006 to September 2009
2005 University of Virginia, Environmental Sciences Organization Award
2003 Named as a "highly cited researcher" by the Institute of Scientific Information in three separate categories: Ecology/Environmental Science, Geosciences, and Engineering. According to ISI, in each area this represents the top 250 individuals who are the most highly cited for the period 1981 to 1999 and comprise less than one-half of one percent of all publishing researchers.
Invited to the 13th Annual Monticello Dinner Series hosted by the UVA Seven Society in recognition of devotion to teaching
Environmental Sciences Dept., Graduate Student Award for 2002/2003 academic year.
Appointed to the executive committee of the EPA Science Advisory Board for a three-year period, December 2003 to September 2006
2002 Elected, Fellow of the American Association for the Advancement of Science
Appointed, Guest Investigator, Woods Hole Oceanographic Inst., Woods Hole, MA
2001 Graduate Student Association Award, Department of Environmental Sciences, University of Virginia
Environmental Science Organization Award, Department of Environmental Sciences, University of Virginia
Sesquicentennial Associateship, Dept. of Environmental Sciences, University of Virginia
Steward of the Month Award, Virginia Center of Stewardship
Visiting Scientist, Woods Hole Oceanographic Institute, Woods Hole, MA
1995 Visiting Scholar, International Institute for Applied Systems Analysis, Vienna, Austria
Sesquicentennial Associateship and Visiting Professor, Marine Biological Laboratory, The Ecosystems Center and Woods Hole Oceanographic Institute, Woods Hole, MA
1990 Excellence in Service Award For Outstanding Service in Protecting Park Resources, National Park Service, Luray, VA
1989 Visiting Fellow, University of East Anglia, UK
1988 Sesquicentennial Associateship Visiting Fellow, United Kingdom Research in Atmospheric, Chemistry, Coordinating Committee, University of East Anglia, Norwich, UK
1986 President and Visitors Prize (shared with GM Hornberger, BJ Cosby, RF Wright and B Martin), Sigma Xi, University of Virginia
1982 Sesquicentennial Associateship Visiting Professor, University of Toronto

PUBLICATIONS

Peer-Reviewed Journal Articles

2017 Castner, EA, AM Leach, J Andrews, JE Compton, **JN Galloway**. 2017. Comparing the nitrogen footprints of institutions. *Sustainability: the Journal of Record, in press*

Castner, EA, AM Leach, N. Leary, JS. Baron, JE. Compton, MG Hastings, J Kimiecik, J Lantz-Trissel, E de la Reguera, R Ryals, **JN Galloway**. 2017. The Nitrogen Footprint Network: A multi-institution program to limit nitrogen pollution. *Sustainability: the Journal of Record, in press*

Compton, JE, AM Leach, EA Castner, **JN Galloway**. 2017. Assessing the social and environmental costs of institutional nitrogen footprints. *Sustainability: the Journal of Record, in press*

de la Reguera, E, EA Castner, **JN Galloway**, AM Leach, N Leary, J Tang. 2017. Defining system boundaries of an institution nitrogen footprint. *Sustainability: the Journal of Record, in press*

Galloway, JN, AM Leach, JW Erisman and A Bleeker. 2017. Nitrogen: The historical progression from ignorance to knowledge, with a view to future solutions. *Soil Research, accepted*

Galloway, JN. 2017. Footprints Make an Impression: an editorial. *Sustainability: the Journal of Record, in press*

Hutton, M, AM Leach, A Leip, **JN Galloway**, M Bekunda, C Sullivan, JP Lesschen. 2017. Toward a nitrogen footprint calculator for Tanzania. *Environmental Research Letters* 12: 034016

Kanter, DR, JS Wentz, **JN Galloway**, WR Moomaw, W Winiwarter. 2017. Managing a forgotten greenhouse gas under existing US law: An interdisciplinary analysis. *Environmental Science & Policy* 67, 44-51

Leach, AM, **JN Galloway**, EA Castner, J Andrews. 2017. An integrated tool for calculating and reducing institution carbon and nitrogen footprints. *Sustainability: the Journal of Record, in press*

2016 Davis, KF, J Gephart, KA Emery, AM Leach, **JN Galloway**, P D'Odorico. 2016 Meeting future crop demand with current agricultural resources: Required changes in dietary trends and production efficiencies. *Global Environmental Change* 39: 125-132

Galloway JN and AM Leach. 2016. Your feet's too big. *Nature Geosciences 9*, 97-98.

Gephart JA, KF Davis, KA Emery, AM Leach, **JN Galloway**, ML Pace. 2016. The environmental cost of subsistence: optimizing diets to mimize footprints. *Science of the Total Environment 553, 120-127.*

Ju, XT, BJ Gu, YY Wu, **JN Galloway**. 2016. Reducing China's fertilizer use by increasing farm size. *Global Environmental Change-Human and Policy Dimensions* 41, 26-32

Leach AM, KA Emery, J Gephart, K Davis, JW Erisman, A Leip, ML Pace, P D'Odorico, J Carr, L Cattell Noll, E Castner, **JN Galloway**. 2016. Environmental impact food labels combining carbon, nitrogen, and water footprints. *Food Policy.* 61: 213-223.

Liang, X, AM Leach, **JN Galloway**, B Gu, SK Lam, D Chen. 2016. Beef and coal are key drivers of Australia's high nitrogen footprint. *Scientific Reports* 6: 39644

Shibata, H, **JN Galloway**, AM Leach, LR**,** Cattaneo, L Cattell Noll, JW Erisman, B Gu, X Liang, K Hayashi, L Ma, T Dalgaard, M Graversgaard, D Chen, K Nansai, J Shindo, K Matsubae, A Oita, M-C Su, S-I Mishima, A Bleeker. 2017. Nitrogen footprints: Regional realities and global connections for reducing anthropogenic nitrogen losses to the environment. *Ambio* 46: 129-142.

2015 Chen, D, **JN Galloway**, S Greenwood, A Mosier. 2015. A tribute to John Freney. *Environmental Development 14*, 2-3.

Fowler, D, CE Steadman, D Stevenson, M Coyle, RM Rees, UM Skiba, MA Sutton, JN Cape, AJ Dore, M Vieno, D Simpson, S Zaehle, BD Stocker, M Rinaldi, MC Facchini, CR Flechard, E Nemitz, M Twigg, JW Erisman and **JN Galloway**. 2014. Effects of global change during the 21st century on the nitrogen cycle. *Atmospheric Chemistry and Physics 15*, 1747–1868 .

Galloway JN, TL Theis, OC Doering. 2015. Managing nitrogen pollution in the United States. A success, a challenge and an action plan. *EM 65*, 6–11.

Keene WC, **JN Galloway**, GE Likens, FA Deviney, KN Mikkelsen, JL Moody, JR Maben. 2015. Atmospheric Wet Deposition in Remote Regions: Benchmarks for Environmental Change. *Journal of Atmospheric Sciences* 72, 2947-2978, doi:10.1175/JAS-D-14-0378.

2014 Davidson EA, **JN Galloway**, N Millar, and AM Leach. 2014, N-related greenhouse gases in North America: Innovations for a sustainable future. *Current Opinion in Environmental Sustainability* 9-10, 1-8

Du EZ, W de Vries, **JN Galloway**, XY Hu, JY Fang. 2014. Changes in wet nitrogen deposition in the United States between 1985 and 2012. *Environ. Res. Lett*. 9, 095004 -095012.

Galloway, JN, W Winiwarter, A Leip, AM Leach, A Bleeker4 and JW Erisman. 2014, Nitrogen footprints: past, present and future. *Environ. Res. Lett*. 9, 115003-11514.

Keene WC, JL Moody, **JN Galloway**, JM Prospero, OR Cooper, S Eckhardt, and JR Maben. 2014. Long-term Trends in Aerosol and Precipitation Composition over the Western North Atlantic Ocean at Bermuda. *Atmos. Chem. Phys.,* 14, 8119-8135.

Moody JM, WC Keene, OR Cooper, KJ Voss, R Aryal, S Eckhardt[4], B. Holben, JR Maben, MA Izaguirre, and **JN Galloway**. 2014. Flow climatology for physicochemical properties of dichotomous aerosol over the western North Atlantic Ocean at Bermuda. *Atmos. Chem. Phys.*, 14, 691-717.

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Robison, A. L., T.M. Scanlon, B.J. Cosby, J.R. Webb, and **J.N. Galloway**. 2013. Roles of sulfate adsorption and base cation supply in acidification and recovery of streams of western Virginia, *Biogeochemistry*, Volume 116, Issue 1-3 , pp 119-130.

Shibata, H, LR Cattaneo, AM Leach, **JN Galloway**. 2014. First approach to the Japanese nitrogen footprint model to predict the loss of nitrogen to the environment. *Environ. Res. Lett*. 9, 115013-11521.

Stevens CJ, Leach AM, Dale S, **Galloway JN**. Personal nitrogen footprint tool for the United Kingdom. *Environmental Science: Processes & Impacts* 2014, DOI: 10.1039/c3em00690e.

2013 Erisman JW, **JN Galloway**, S Seitzinger, A Bleeker, NB Dise, R Petrescu, SM Leach, W. De Vries. 2013. Consequences of human modification of the global nitrogen cycle. *Philosophical Transactions B*, 368.1621.

Fowler D, M Coyle, U Skiba, M. Sutton, JN Cape, S. Reis, L Sheppard, A Jenkins, B. Grizetti, **JN Galloway**, P Vitousek, A Leach, L Bouwman, K Butterback-Bahl, F Dentener, D Stevenson, M Amann and M Voss. 2013. The global nitrogen cycle in the 21st century. *Philosophical Transactions B*, 368.1621

Galloway J. N., Leach, A. M., Bleeker, A., Erisman, J. W. A chronology of human understanding of the nitrogen cycle. *Philosophical Transactions B*, 368.1621.

Gu, B, AM Leach, L Ma, **JN Galloway**, SX Chang, Y Ge, J Chang. 2013. Nitrogen footprint in China: Food, energy, and nonfood goods. *Environmental Science & Technology* 47: 9217-9224.

Gu BJ, Chang, J, Min Y, Ge Y, Zhu Q, **Galloway JN**, Peng CH. 2013. The role of industrial nitrogen in the global nitrogen biogeochemical cycle. *Scientific Reports*, 3: 2579

Kanter, DR, DL Mauzerall, AR Ravishankara, JS Daniel, RW Portmann, P Brabiel, WR Moomaw, **JN Galloway**. A post-Kyoto partner: Considering the stratospheric ozone regime as a tool to manage nitrous oxide. *Proc. National Acad. Sci*. www.pnas.org/cgi/doi/10.1073/pnas.1222231110.

Lassaletta, L, G Billen, B Grizzetti, J Garnier, AM Leach, **JN Galloway**. 2013. Food and feed trade as a driver in the global nitrogen cycle: 50-year trends. *Biogeochemistry*. DOI 10.1007/s10533-013-9923-4.

Leach AM, AN Majidi, **JN Galloway**, AJ Greene. 2013. Towards institutional sustainability: A nitrogen footprint model for a university. *Sustainability: The Journal of Record, 6, 211 – 219.* DOI:10.1089/sus.2013.9852.

Previdi, M, BG Liepert, D Peteet, J Hansen, DJ Beerling, AJ Broccoli, S Frolking, **JN**

Galloway, M Heimann, C Le Quéré, S Levitus, and V Ramaswamy. Climate Sensitivity in the Anthropocene. *Quarterly Journal of the Royal Meteorological Society*, 674, 1121-1131.

Robison, AL., TM Scanlon, BJ Cosby, JR Webb, and **JN Galloway**. 2013. Roles of sulfate adsorption and base cation supply in acidification and recovery of streams of western Virginia, *Biogeochemistry, in press.*

Winiwarter W., JW Erisman, **JN Galloway**, Z Klimont, and M Sutton, 2013. Estimating environmental loads of reactive nitrogen in the 21st century. *Climatic Change*, DOI 10.1007/s10584-013-0834-0

2012 Davidson, EA, MB David, **JN Galloway**, CL Goodale, R. Haeuber, JA Harrison, RW Howarth, DB Jaynes, RR Lowrance, BT Nolan, JL Peel, RW Pinder, E Porter, CS Snyder, AR Townsend, and MH Ward. 2012. Excess nitrogen in the U.S. environment: trends, risks, and solutions. *Issues in Ecology* 15, 1-16

Erisman, JW, **J Galloway**, S Seitzinger, A. Bleeker, and D. Butterbach-Bahl. Reactive nitrogen in the environment and its effect on climate change. *Current Opinions in Environmental Sustainability*, 3, 281–290.

Leach, AM**, J. N. Galloway**, A. Bleeker, J. W. Erisman, R. Kohn, J. Kitzes. A nitrogen footprint model to help consumers understand their role in nitrogen losses to the environment. *Environmental Development* 1, 40-66. (*Note: in January 2013, this paper was awarded Best Research Paper of 2012 by the journal's editorial board*).

2011 Bleeker, A, K Hicks, F Dentener, **J. Galloway**. N deposition as a threat to the World's protected areas under the Convention on Biological Diversity. Environmental Pollution. *Environmental Pollution* 159, 2280-2288.

Driscoll, CT, EB Cowling, P Grennfelt, **J Galloway**, R Dennis. 2011. Integrated Assessment of Ecosystem effects of atmospheric deposition. Environmental Manager Journal 22, 6 – 13.

Erisman, JW, **J Galloway**, S Seitzinger, A.Bleeker, and D Butterbach-Bahl. Reactive nitrogen in the environment and its effect on climate change. *Current Opinions in Environmental Sustainability*, 3, 281–290

Okin, GS, AR Baker, I Tegen, NM Mahowald, FJ Dentener, RA Duce, **JN Galloway**, K Hunter, M Kanakidou, N Kubilay, JM Prospero, M Sarin, V Surapipith, M Uematsu, T Zhu. 2011. Impacts of atmospheric nutrient deposition on marine productivity: Roles of nitrogen, phosphorus, and iron. Global Biogeochemical Cycles 25, GB2022, doi:10.1029/2010GB003858.

2010 Bobbink, R., K. Hicks, J. Galloway, T. Spranger, R. Alkemade, M. Ashmore, M. Bustamante, S. Cinderby, E. Davidson, F. Dentener, B. Emmett, J. W. Erisman, M. Fenn, F. Gilliam, A. Nordin, L. Pardo and W. de Vries. 2010. Global Assessment of Nitrogen Deposition Effects on Terrestrial Plant Diversity: a synthesis. *Ecological Applications* 20, 30-59.

Butchart, SHM and 45 others, 2010. Global Biodiversity: Indicators of Recent Declines. *Science* 328, 1164-1168.

Knapp, A. N., M. H. Hastings, D. M. Sigmon, F. L. Lipschultz, J. N. Galloway. 2010. The flux and isotopic composition of reduced and total nitrogen in Bermuda rain.

Marine Chemistry 120, 83-89.

2009 Duce, RA, JN Galloway, PS Liss. The impacts of atmospheric deposition to the ocean on marine ecosystems and climate. *WMO Bulletin* 58, 61-66.

2008 Duce, RA, J. LaRoche, K. Altieri, KR Arrigo, AR Baker, DG Capone, S. Cornell, F. Dentener, **J. Galloway**, RS Ganeshram, RJ Geider, T. Jickells, MM Kuypers, R. Langlois, PS Liss, SM Liu, JJ Middelburg, CM Moore, S. Nickovic, A. Oschlies, T. Pedersen, J. Prospero, R. Schlitzer, S. Seitzinger, LL Sorensen, M. Uematsu, O. Ulloa, M. Voss, B. Ward, L. Zamora. Impacts of atmospheric nitrogen on the open ocean. *Science* 320, 893-897.

Erisman, J. W., M. S. Sutton, **J. N. Galloway,** Z. Klimont, W. Winiwarter. A century of ammonia synthesis. *Nature Geosciences*, 1, 1-4; doi:10.1038/ngeo325.

Galloway, J, N Raghuram and YP Abrol. A persective on reactive nitrogen in a global, Asian and Indian context. *Current Science* 94, 1-7.

Galloway, JN, AR Townsend, JW Erisman, M. Bekunda, Z. Cai, JR Freney, LA Martinelli, SP Seitzinger, MA Sutton. Transformation of the nitrogen cycle: recent trends, questions and potential solutions. *Science* 320, 889-892.

Galloway, JN, FJ Dentener, E. Marmer, Z. Cai, YP Abrol, VK Dadhwal, AV Murugan.The environmental reach of Asia. *Annual Reviews*, 33: 461-481.

Gruber, N and **JN Galloway**. An Earth-system perspective of the global nitrogen cycle. *Nature* 451, 293-296.

Knapp, AN, MG Hastings, DM Sigman, F. Lipschultz**, JN Galloway**. The flux and isotopic composition of reduce and total nitrogen in Bermuda rain. *Marine Chemistry*, doi:10.1016/j.marchem.2008.08.007.

2007 Erisman JW, A. Bleeker, **J. Galloway**, MS Sutton. Reduced nitrogen in ecology and the environment. *Environmental Pollution* 150, 140-149.

Galloway, JN, M Burke, GE Bradford, R. Naylor, W Falcon, A Chapagain, J Gaskell, E McCullough, HA Mooney, KLL Oleson, H Steinfeld, T Wassenaar, V Smil. International trade in meat: the tip of the pork chop. *Ambio* 36, 622-629.

Grady, AE, TM Scanlon, **JN Galloway**. Declines in dissolved silica concentrations in western Virginia streams (1988-2003): Gypsy moth defoliation stimulates diatoms? *J. Geophysical Research* 112, G01009, doi:10.1029/2006JG000251.

2006 Boyer, EW, RW Howarth, **JN Galloway**, FJ Dentener, PA Green, CJ Vorosmarty. Riverine nitrogen export from the continents to the oceans. *Global Biogeochemical Cycles*. 20, GB1S91, doi:10.1029/2005GB002537.

Dentener, F, J Drevet, JF Lamarque, I Bey, B Eickhout, AM Fiore, D Hauglustaine, LW Horowitz, M Kroll, UC Kulshrestha, M Lawrence, C Galy-Lacaux, S Rast, D Shindell, D Stevenson, T Van Noije, C Atherton, N Bell, D Bergman, T Butler, J Cofala, B Collins, R Doherty, K Ellingsen, **J Galloway**, M Gauss, V Montanaro, JF Müller, G Pitari, J Rodriguez, M Sanderson, F Solmon, S Strahan, M Schultz, K Sudo, S Szopa, O Wild. Nitrogen and sulfur deposition on regional and global scales: a multi-model evaluation. *Global Biogeochemical Cycles*, in press.

2005 **Galloway, JN.** The global nitrogen cycle: Past, present and future. *Science in China* Ser. C Life Sciences 48: 669-677.

Naylor, R, H Steinfeld, W Falcon, **J Galloway**, V Smil, E Bradford, J Alder, H Mooney. Losing the links between livestock and land. *Science* 310: 1621-1622.

2004 **Galloway, JN**, FJ Dentener, DG Capone, EW Boyer, RW Howarth, SP Seitzinger, GP

Asner, C Cleveland, P Green, E Holland, DM Karl, AF Michaels, JH Porter. A Townsend and C Vörösmarty. Nitrogen Cycles: Past, Present and Future. *Biogeochemistry* 70: 153-226.

Green, PA, CJ Vörösmarty, M Meybeck, JN **Galloway,** BJ Peterson, EW Boyer. Pre-industrial and contemporary fluxes of nitrogen through rivers: a global assessment based on typology. *Biogeochemistry* 68: 71-105.

Webb, JR, BJ Cosby, FA Deviney Jr., **JN Galloway**, SW Maben, and AJ Bulger. Are brook trout streams in western Virginia and Shenandoah National Park recovering from acidification? *Environmental Science and Technology* 38: 4091-4096.

2003 **Galloway, JN**, JD Aber, JW Erisman, SP Seitzinger, RW Howarth, EB Cowling, BJ Cosby. The nitrogen cascade. *Bioscience* 53: 341-356.

Li, C, Z Yahui, S Frolking, JN **Galloway**, R Harriss, B Moore III, D Schimel, W Xiaoke. Modeling soil organic carbon change in croplands of China. Ecological Applications 13: 327-336.

National Research Council. Air Emissions from Animal Feeding Operations: Current Knowledge, Future Needs. National Academy Press. (**JN Galloway**, one of 16 authors).

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Todd, DL, WC Keene, JL Moody, H Maring, **JN Galloway.** Effects of wet deposition on optical properties of the atmosphere over Bermuda and Barbados. *Journal of Geophysical Research*, 108(D3): 4099, doi:10.1029/2001JD001084.

2002 Cowling, EB, and **JN Galloway**. Challenges and opportunities facing animal agriculture: Optimizing nitrogen management in the atmosphere and biosphere of the Earth. *J. Animal Sci.* 80 (E. Suppl. 2): E-157-E167.

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2001 Buffam, I, **JN Galloway**, LK Blum, KJ McGlathery. Dissolved organic matter concentrations and bioavailability in an Appalachian stream during storms.*Biogeochemistry* 53: 269-306.

Cowling, EB, **JN Galloway**, CS Furiness, M Barber, T Bresser, K Cassman, JW Erisman, R Haeuber, R Howarth, J Melillo, W Moomaw, A Mosier, K Sanders, S Seitzinger, S Smeulders, R Socolow, D Walters, F West, Z Zhu. Optimizing Nitrogen Management in Food and Energy Production and Environmental Protection: Summary Statement from the Second International Nitrogen Conference, October 14-18, 2001. *Ecological Society of America*, Washington, DC, 17 pp.

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2000 Eshleman, KN, RH Gardner, SW Seagle, NM Castro, DA Fiscus, JR Webb, **JN Galloway**, FA Deviney, AT Herlihy. Effects of disturbance of nitrogen export from forested lands of the Chesapeake Bay watershed. *Environ. Monitoring and Assessment* 63: 187-197.

Galloway, JN. Nitrogen mobilization in Asia. *Nutrient Cycling in Agroecosystems*, 57: 1-12.

1998 Eshleman, KN, RP Morgan, JR Webb, FA Deviney, **JN Galloway.** Temporal patterns of nitrogen leakage from mid-Appalachian forested watersheds: Role of insect defoliation. *Water Resour. Res.* 34(8:, 2005-2116.

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1996 Currie, WS, **JN Galloway**, HH Shugart. Watershed base-cation cycle dynamics modeled over forest regrowth in a central Appalachian ecosystem. *Water Air Soil Pollut.* 89: 1-22.

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1998 **Galloway, JN**, and J Melillo, editors, *Asian Change in the Context of Global Climate Change.* New York, NY: Cambridge University Press.

Galloway, JN, DS Ojima, JM Melillo. Asian change in the context of global change: An overview. In: JN Galloway and JM Melillo, editors. *Asian Change in the Context of Global Climate Change.* , New York, NY: Cambridge University Press.

1993 Liss, PS, and **JN Galloway.** Air-sea exchange of sulphur and nitrogen and their interactions in the marine atmosphere. In: R Wollast, FT Mackenzie, L Chou, editors. *Interactions of C, N, P and S Biogeochemical Cycles and Global Change.*NATO ASI Series I, Vol. 4, New York, NY: Springer-Verlag. pp 259-281.

1992 Panel on Global Climate Change Sciences in China (**JN Galloway**, Chairman), *China and Global Change: Opportunities for Collaboration*, National Research Council.Washington, DC: National Academy Press.

1991 Cosby, BJ, PF Ryan, JR Webb, GM Hornberger, **JN Galloway.** Mountains of western virginia, In: DF Charles, editor. *Acid Deposition and Aquatic Ecosystems: Regional Case Studies.* New York, NY: , Spinger-Verlag. pp 297-318.

1990 **Galloway, JN.** The intercontinental transport of sulfur and nitrogen, Chapter 4. In: AH Knap and MS Kaiser, editors. *The Long-Range Atmospheric Transport of Natural and Contaminant Substances.*NATO ASI Series C, Vol. 297, Dordrecht, The Netherlands: Kluwer. pp 87-104.

Levy II, H, A Eliassen, BE A Fisher, **JN Galloway**, K Gorzelska, DR Hastie, JL Moody, AG Ryaboshapko, D Savoie, DM Whelpdale. The long-range transport of sulfur and nitrogen compounds, Chapter 11. In:AH Knap and MS Kaiser, editors. *The Long-Range Transport of Natural and Contaminant Substances*., , NATO ASI Series C, Vol. 297. Dordrecht, The Netherlands: Kluwer. pp 231-258.

1988 Davis, RB, DS Anderson, DF Charles, **JN Galloway.** Two-hundred year pH history of Woods, Sagamore and Panther Lakes in the Adirondack Mountains, New York state.In: WJ Adams, GA Chapman, and WG Landis, editors. *Aquatic Toxicology and Hazard Assessment.*Vol. 10. ASTM STP 97. Philadelphia, PA: American Society for Testing and Materials. pp 89-111.

Galloway, JN. Effects of acid deposition on tropical aquatic ecosystems, Chapter 5. In: H Rodhe and R Herrera, editors. *Acidification in Tropical Countries.* Scope 36. New York, NY: Wylie. pp 141-166.

Rodhe, H, E Cowling, I Galbally, **J Galloway,** R Herrera. Acidification and regional air pollution in the tropics, Chapter 1. In: H Rodhe and R Herrera, editors. *Acidification in Tropical Countries.* Scope 36. New York, NY: Wylie.

Weathers, KC, GE Likens, FH Bormann, JS Eaton, KD Kimball, **JN Galloway**, TG Siccama, D Smiley. Chemical concentrations in cloud water from four sites in the eastern United States. In: MH Unsworth and D Fowler. *Acid Deposition at High Elevation Sites.* , Dordrecht, The Netherlands: Kluwer. pp 345-357.

1986 **Galloway, JN**, TM Church, AH Knap, DM Whelpdale. The Western Atlantic Ocean Experiment (WATOX): The export, deposition, and fate of North American emissions to the Western Atlantic Ocean, Chapter 4. In: RW Johnson, GE Gordon, AZ Elzerman, W Calkins, editors. *Chemistry of Acid Rain.* edited by ACS Special Sympos.,Vol. 349. Washington, DC: American Chemical Society. pp. 39-55.

1985 **Galloway, JN.** The deposition of sulfur and nitrogen from the remote atmosphere: Background paper, Chapter 8. In: **JN Galloway**, RJ Charlson, MO Andreae, H Rodhe, editors.*Biogeochemical Cycling of Sulfur and Nitrogen in the Remote Atmosphere.* ,NATO ASI Series C, Vol.159. Dordrecht, Tthe Netherlands: Reidel. pp 143-175.

Galloway, JN, RJ Charlson, MO Andreae, H Rodhe, editors. *The Biogeochemical Cycling of Sulfur and Nitrogen in the Remote Atmosphere*. NATO ASI Series C, Vol.159. Dordrecht, The Netherlands: Reidel.

Prospero, JM, W C Keene, **J N Galloway**, R J Delmas, L Granat, G Gravenhorst, GE Likens. The deposition of sulfur and nitrogen from the remote troposphere: Working group report, Chapter 9. In: **JN Galloway**, RJ Charlson, MO Andreae, H Rodhe, editors. *Biogeochemical Cycling of Sulfur and Nitrogen in the Remote Atmosphere.*NATO ASI Series C, Vol.159. Dordrecht, The Netherlands: Reidel. pp 176-200.

1980 **Galloway, JN.** Regional-scale studies of atmospheric deposition effects: Overview. In: DS Shriner, CR Richmond, SE Lindberg, editors.*Atmospheric Sulfur Deposition: Environmental Impact on Health Effects.*Ann Arbor, MI: Ann Arbor Science.

Galloway, JN, and GG Parker. Difficulties in measuring wet and dry deposition on forest canopies and soil surfaces, In: TC Hutchinson and M Havas, editors. *Effects of Acid Precipitation on Terrestrial Ecosystems.* , NATO ASI Series I, Vol. 4. New York, NY: Plenum.

CURRENT RESEARCH

- 1979-2017
  Shenandoah Watershed Study, National Park Service
- 1984-2017
  National Trends Network, U.S. Geological Survey (with W. C. Keene)
- 1992-2017
  Long-term drivers, state change, and disturbance on the Virginia Coast Reserve
  National Science Foundation, co-PI with numerous others
- 2011-2017
  A Multi-Scale Program for VA, WV and MD to Assess Change in the Acid-Base Chemistry of Mountain Streams, National Park Service.
- 2014-2017
  Comparison of nitrogen dynamics between conventional and organic food production, The Organic Center
- 2014-2019
  The Development and Application of Nitrogen Footprint Tools for Universities, Secondary Schools, Watersheds and Urban Areas, USEPA

EXPERT TESTIMONY, OFFICIAL BRIEFINGS, INVITED LECTURES

2016 Organizer, Symposium on Limiting our Planetary Nitrogen Footprint. AAAS Annual Meeting, Washington DC. February 13.

Invited seminar, *Nitrogen Out of the Bottle: The Challenge of Managing the Genie*. Natural Resource Ecology Laboratory, Colorado State University. March 4.

Keynote Lecture, *Virginia's Mountain Streams: Sentinels of Change*. Awards Ceremony Virginia Museum of Natural History, Waynesboro VA. March 24.

Invited Lecture, *Global and Local Importance of Macronutrients Cycles*. Macronutrient

Cycles Symposium, Royal Society of London, London, UK. June 15.

Introductory Lecture, *Nitrogen Footprint Tool Overview.* NFT Network Workshop, University of New Hampshire, June 20.

Invited Panelist, *Stemming the Tide of Ocean Pollution.* Our Ocean Conference, US State Department, Washington DC, September 16.

Poster presentation, *Meeting a Nitrogen Footprint Reduction Goal: A Case Study at the University of Virginia*. Annual Meeting, Association for the Advancement of Sustainability in Higher Education, Baltimore MD, October 10

Panel Presentation, *Combining carbon and nitrogen footprints: A new tool for a more comprehensive approach to environmental management on campuses*. Annual Meeting, Association for the Advancement of Sustainability in Higher Education, Baltimore MD, October 11

Invited seminar, *Nitrogen Out of the Bottle: The Challenge of Managing the Genie*. EPA Atlantic Ecology Laboratory. Narragansett, RI. October 27

Workshop Presentation. *Overview of N footprint model development*. Workshop on Integrating N and P Footprint approaches. McGill University, Montreal, Canada, November 15.

Invited lecture, *The global nitrogen cycle and anthropogenic effects.* Symposium on Nitrogen, Nitrogen Footprints and their ManagementLeader, McGill University, Montreal, Canada, November 16.

Invited lecture, *N footprint history*. Workshop on Nitrogen Footprints, University of Melbourne, Australia, December 2.

Invited lecture, *N-Print and INMS Partnership.* Workshop on Integrated Nitrogen Management Strategy. Melbourne, Australia. December 3.

Keynote Address, *Nitrogen: the historical progression from ignorance to knowledge, with a view to future solutions.* 7th International Nitrogen Conference, Melbourne, Australia, December 4.

2015 Invited presentation, *Beyond Carbon: Creating and Tracking a Nitrogen Footprint (*with Lia Cattaneo), Greater Virginia Green Building Council, Charlottesville VA. February 10.

Invited seminar, *Creating and Tracking a Nitrogen Footprint.* Undergraduate Seminar, University of Virginia. February 17.

Invited plenary lecture (given remotely), *Overview of global N issues and the need for N-footprint tools*. International workshop of Nitrogen Footprint: Local Reality and Global Connection. Hokkaido University Japan. March 16.

Invited panelist, Sustainable Food for the 21st Century - Blue Ribbon Panel Meeting. World Wildlife Fund, Washington DC. May 11 – 13.

Leader, Annual Workshop of the Nitrogen Footprint Tool Network. Brown University, June 22 – 24

Moderator, Ecosystem Science Panel at Celebration of Discovery Symposium. Marine Biological Laboratory, July 11.

Invited seminar, *Nitrogen Out of the Bottle: The Challenge of Managing the Genie*. Civil and Environmental Engineering, University of Virginia. October 23.

Invited seminar, *Nitrogen Out of the Bottle: The Challenge of Managing the Genie*. School of Engineering and Applied Sciences, Earth Systems Science Department, Stanford University. November 11.

2014 Invited presentation, *AMoN Overview*, Ammonia Workshop, Brown University, March 7

Keynote Address, *Sustainability in a Global Environment: Have You Considered Your Nitrogen Footprint?*, at 2014 DEQ Environmental Excellence Conference, Richmond VA, March 11.

Invited seminar, *Nitrogen out of the Bottle: The Challenge of Managing the Genie*, Harvard University, April 4

Invited seminar, *Nitrogen Out of the Bottle: The Challenge of Managing the Genie*. School of Engineering and Applied Sciences, Harvard University. April 4.

Invited discussion. *Changing the Fertilizer Game*. Virtual Fertilizer Research Center. Cosmos Club, Washington DC, June 11.

Invited presentation, *The Future of Nr Formation and Use.* EPA-USDA-USGS Working meeting on Management Strategies for Reactive Nitrogen and Co-Pollutants. Washington DC. June 24.

Invited lecture, *Climate Change Assessments: National to Global.* Blue Ridge Chapter of United Nations Association, Charlottesville. September 21.

Invited lecture, *Nitrogen Footprints: Tools for People, Institutions and Decision-Makers.* Joint presentation with Allison Leach and Laura Cattell Noll. National Institute of Food and Agriculture, USDA. Washington DC. September 25.

Hosted workshop and gave presentation, *Implementing the Nitrogen Footprint Tool: A Workshop for Universities*, University of Virginia. November 12 – 14.

2013 Conference Attendee: Fourth Lead Author Meeting, Working Group 1, AR5, IPCC. Australia, January 13-17.

Invited Lecture: *A Chronology of Human Understanding of the Nitrogen Cycle.* Greencycles Training Workshop IV: Nitrogen in the Earth System. Via video link. Jena, Germany, February 25.

Invited Lecture: *The Anthropogenic Nitrogen Cascade*. Via video link. Greencycles Training Workshop IV: Nitrogen in the Earth System. Jena, Germany, February 26.

Workshop, Building a Better Bay Model, University of Maryland, May 22-23.

Invited lecture, *Nitrogen out of the Bottle: The Successes of Managing the Genie*, Workshop on Nitrogen, Why is so Little Happening? Saltsjöbaden, Sweden, by video-link, June 25

Invited sermon, St. Paul's Memorial Church, September 8

Briefing (with AM Leach), BOV Buildings and Grounds Committee concerning nitrogen footprint goal for UVA, September 19

Invited seminar, *Nitrogen out of the Bottle: The Challenge of Managing the Genie*. University of New Hampshire, October 21.

Plenary lecture, *Nitrogen Footprints: Past, Present and Future.* Sixth International Nitrogen Conference, Kampala Uganda, November 18 – 22.

2012 Invited Lecture (with Allison Leach): *What is Your Nitrogen Footprint?* Washington State University, March 5.

Invited Lecture: T*he Nitrogen Dilemma: Do We Feed the World or Protect the Environment?* Whittier College, March 7.

Session Organizer (with JW Erisman): "Nitrogen: Too Much of a Good Thing" held at the Planet Under Pressure Conference, London UK. March 26.

Invited Presentation (given by A. Leach): *Analysis of international trade of reactive nitrogen as food and fertilizer.* A. Leach, J. Galloway, J. Kitzes, JW Erisman, A Bleeker. Session on "Nitrogen: Too Much of a Good Thing" held at the Planet Under Pressure Conference, London UK. March 26.

Invited Lecture: T*he Nitrogen Dilemma: Do We Feed the World or Protect the Environment?* Whittier College, March 7.

Conference Attendee: Third Lead Author Meeting, Working Group 1, AR5, IPCC. Morocco 4/16-20.

Workshop, Coordinating Lead Authors: National Climate Assessment, Washington, DC, June 24-26.

Invited Paper: Nitrogen, Pushing the Limits. Gordon Research Conference on Environmental Sciences: Water. Holderness School, NH. June 24-28.

Invited Lecture: *The International Nitrogen Initiative*. Via video link. Workshop on Nitrogen-sustainable food systems in Uganda, Kampala, November 27.

Invited Paper: Nitrogen Out of the Bottle: the Challenge of Managing the Genie. Session on Reactive Nitrogen at the Intersection of Climate Change, Air Quality, Ecosystem Sustainability, and Policy, 2012 AGU Annual Meeting, San Francisco, December.

2011 Invited Lecture: The Nitrogen Dilemma of the United States. Special session, Global and Local Responses to the Nitrogen Challenge: Science, Practice and Policy at Annual Meeting of American Association for the Advancement of Science, Washington DC, February 19.

Keynote Lecture: Nitrogen: A Story of Food, Feed and Fuel. Workshop on The Nitrogen Cycle, Environmental Chemistry Group Royal Society of Chemistry, London, March 9.

Keynote Lecture: Nitrogen, Feed the World or Protect the Environment. 68th Annual Meeting of the National Institute of Science & BKX, March 23.

Keynote Lecture: Human Alteration of the Nitrogen Cycle. Conference on Nitrogen and Global Change. Edinburgh Scotland, April 12.

Invited Lecture: The Nitrogen Footprint of the United States, (with Allison Leach), Chesapeake Bay Foundation, Annapolis MD, May 19.

Invited Lecture (with Allison Leach): *The Nitrogen Footprint of the United States*. World Resources Institute September 28

Invited Workshop*: IPCC workshop on Nitrogen and Climate***,** Amsterdam, October 28-November 1

Invited Briefing: *Reactive Nitrogen in the United States: An Analysis of Inputs, Flows, Consequences, and Management Options.* EPA Office of Air and Radiation. November 15.

Invited Briefing: *Reactive Nitrogen in the United States: An Analysis of Inputs, Flows, Consequences, and Management Options.* US Department of Agriculture November 15.

Invited Briefing: *Reactive Nitrogen in the United States: An Analysis of Inputs, Flows, Consequences, and Management Options.* EPA Office of Water. November 16.

Invited Briefing: *Reactive Nitrogen in the United States: An Analysis of Inputs, Flows,*

Consequences, and Management Options. EPA Office of Policy. November 16.

Invited Briefing: *Reactive Nitrogen in the United States: An Analysis of Inputs, Flows, Consequences, and Management Options.* EPA Office of Research and Development. November 17.

Invited Briefing: *Reactive Nitrogen in the United States: An Analysis of Inputs, Flows, Consequences, and Management Options.* Environmental Defense Fund. November 17.

Workshop Organizer (with A. Leach and JW Erisman): *N-PRINT Workshop-Developing Nitrogen Calculators for Europe*. The Royal Institution of Great Britain, London UK. December 3-4.

Invited Lecture: *A chronology of human understanding of the nitrogen cycle 1700 – 2000*. The Global Nitrogen Cycle Conference. Royal Society, UK. London. December 5-6.

Invited Lecture: *International trade of nitrogen.* Policy Meeting on What would a global policy to regulate human use of fixed nitrogen look like? The Kavli Royal Society International Centre, Chicheley Hall, Buckinghamshire UK. December 7-8.

2010 Invited Seminar: Nitrogen, A Story of Food, Fuel and Fiber. Old Dominion University, February 18.

Invited Presentation: *Nitrogen, A Story of Food, Fuel and Carbon*. Workshop on Climate Sensitivity Extremes: Assessing the Risk. Lamont-Daughery Laboratory. Columbia University, April 27.

Invited Public Lecture: *The Nitrogen Dilemma: Feed the World or Protect the Environment*. Bermuda Institute of Ocean Sciences, April 22.

Invited Seminar: *Nitrogen, A Story of Food, Fuel and Carbon*. Workshop on Climate Sensitivity Extremes: Assessing the Risk. Lamont-Douerty Laboratory. Columbia University, April 27.

Invited Seminar: *Nitrogen, A Story of Food, Feed and Fuel*. Atmospheric and Ocean Sciences, University of Maryland, May 6.

Invited Seminar: *Nitrogen, A Story of Food, Feed and Fuel*. Environmental Geology and Geochemistry Seminar, Geosciences Department, Princeton University, May 20.

Invited Lecture: *Nitrogen Change and Climate Change*. Workshop to Discuss Interacting Effects of Climate and Nitrogen on Ecosystems and their Services Arlington VA, October 12.

Invited Lecture: *Nitrogen Change and Climate Change*. AMS Briefing on Nitrogen and Climate. Senate Office Building, Washington DC, November 19

2009 Keynote Speaker: *Nitrogen, A Story of Food, Fuel and Fiber*. Workshop on Managing Nitrogen sponsored by the Association of Environmental Engineering and Science Professors, University of Iowa, July 27.

Invited Public Lecture: *Nitrogen Dilemma—Cascading Through our Lives*. Stewardship of the Planet Series, West Falmouth Meeting of the Society of Friends, August 9.

Invited Presentation: *Nitrogen, A Story of Food, Fuel and Fiber*. Nitrogen Symposium. Agouron Institute, October 14-19.

Invited Seminar, *Nitrogen: a Story of Food, Fiber and Fuel.* Environmental Change Initiative, Brown University, February

Invited, Harold S. Johnston Seminar, *Nitrogen: A Story of Food, Fuel and Fiber,*

University of California at Berkeley, May

Invited, James R. Arnold Lecture, *Nitrogen: A Story of Food, Fuel and Fiber,* University of California at San Diego, May

2008 Invited Lecture, *Nitrogen, Cascading Through our Lives*. Tyler Prize Lecture, University of Southern California, April.

Invited Presentation, *The Nitrogen Cascade*. Fellows Symposium, AGU Spring Meeting, May.

Keynote Lecture, *From Black Flies to Global Change.* Centennial Celebration at University of Michigan's Biological Station, August.

Invited Lecture, *Nitrogen: a Story of Food, Fiber and Fuel.* Ocean Explorium at New Bedford Seaport, October.

Invited Seminar, *Nitrogen: a Story of Food, Fiber and Fuel.* The Ecosystems Center, Marine Biological Station, November.

Invited Seminar, *Human Alteration of the Nitrogen Cycle: Consequences and Responses.* Coastal Ocean Institute & Biology Department, Woods Hole Oceanographic Institution, December.

Invited Presentation, *Nitrogen Cascade: An Opportunity to Integrate Biogeochemisty and Policy*. Co-authors, W. Moomaw and T. Theis. AGU Annual Meeting, December.

Invited Presentation, *Food, Feed and Fuel: A Story about Nitrogen.* Co-authors, M. Burke, H. Mooney, H. Steinfeld. AGU Annual Meeting, December.

2007 Invited speaker, *Links between Atmospheric Deposition and Streamwater Chemisttry.* NPS Eastern Rivers Summit, Shepherdstown, WV, February

Invited seminar, *All About Nitrogen: Goldilocks and the Three Bears*. Horn Point Marine Laboratory, MD, April

2006 Keynote speaker, *World N Production: A Historical Perspective and Future Projections,* Airy Symposium "Visions for Animal Agriculture and the Environment." Kansas City, Missouri, January

Co-organizer and presenter, *Nitrogen and Society: Results of Preliminary Scientific Assessments.* Nitrogen Policy Workshop. UNEP, France, March

Invited speaker, *Nitrogen: An Essential Ingredient for Life and Food*. American Meteorological Society Environmental Science Seminar Series, Human Alteration of the Nitrogen Cycle: Implications for Plant Growth, Food Supply, Climate, Water Quality, and Human Health. Russell Senate Office Building, Washington, DC, March

Invited speaker, *Nitrogen Biogeochemistry in Intensive Animal Production Systems.* Workshop on Livestock in a Changing Landscape—Drivers, Consequences and Responses. UNFAO, Italy, March

Local organizer, International Air Pollution Workshop. Boar's Head Inn, Charlottesville, VA, April

Invited speaker, *Biogeochemical Perspective on Critical Loads – Linkages between Emissions, Deposition, and Biogeochemical cycles*. Multi-Agency Critical Loads Workshop on Sulfur & Nitrogen Deposition Effects on Freshwater and Terrestrial Ecosystems, University of Virginia, Charlottesville, May

Invited speaker, *Workshop on Anthropogenic Nitrogen Impacts on the Open Ocean*; The Global Nitrogen Cycle: History, Fluxes, Future, University of East Anglia, November

2005 Invited participant, XII SCOPE General Assembly. New Delhi, India, February

Chair, Case Studies, Consequences of Industrialized Animal Production Systems

Workshop. Stanford University, March
Briefing, State Department. International Nitrogen Initiative, June
Invited speaker, *Nitrogen Mobilization in Asia: Magnitude and Consequences* Symposium on Ecological Impacts of Asia on Global Sustainability at MultipleScales, August
ESA/INTECOL Meeting. Montreal, Canada, August
Invited speaker, *Human Alteration of the Nitrogen Cycle: the Good and the Bad,* Symposium on Nitrogen and Human Health. ASA-CSSA-SSSA Annual Meeting, Salt Lake City, UT, November
Invited participant, AIMES/IGBP Science Committee Annual Meeting, Boulder, CO, November

2004 Working Group leader, Workshop on the Nitrogen Fertilizer Rapid Assessment Project. Kampala, Uganda, January
Invited seminar, *Human Alteration of the Global Nitrogen Cycle: Current Science and Future Policy.* Duke University, Durham, NC, March
Banquet speaker, Workshop on Advanced Approaches to Quantify Denitrification. Woods Hole, MA, May
Invited presentation, *Background, current status and the African context of the International Nitrogen Initiative*. Presentation at the Symposium on Improving Human Welfare and Environmental Conservation by Empowering Farmers to Combat Soil Fertility Degradation. Yaoundé, Cameroon, May (presentation given by M. Bekunda)
Keynote speaker, Third International Nitrogen Conference. Nanjing, China, October
Co-Organizer and speaker, Virginia Mountain Streams Symposium. Charlottesville, VA, October
Invited participant, Consequences of Industrialized Animal Production Systems Workshop. Stanford University, November
Invited speaker, *Anthropogenic nitrogen mobilization: Drivers, consequences and opportunities for action.* Presented at the Symposium on Bio-atmospheric N Cycle, Fall American Geophysical Meeting, San Francisco, CA, December

2003 Invited presentation, *Global Nitrogen Cycle*, Collaborative Large-scale Engineering Assessment Network for Environmental Research Workshop. Duke University, February
Invited participant, *SCOPE Workshop on Nitrogen Fertilizer Use.* Paris, France, April
Hosted Workshop on *International Nitrogen Initiative*, The Hague, The Netherlands, May
Invited participant at SCOPE General Assembly. Granada, Spain, June
Moderator, *Tracking Nutrient Enrichment of Water Resources in the 21st Century: Challenges and Opportunities for Information Management at the National Level*. A Plenary Session of the Universities Council on Water Resources Annual Conference. Washington, DC, August
Invited participant, *SCOPE Workshop on Industrial Animal Production Systems.* Stanford University, September
Invited participant, *SCOPE/UNEP GEO-2003 Workshop*, Paris, October
Invited seminar, *Human Alteration of the Global Nitrogen Cycle: Past, Present and Future.* University of Maryland (Appalachian Environmental Laboratory), March

Invited seminar, *Human Alteration of the Global Nitrogen Cycle: Current Science and Future Policy*. Cornell University, March

Invited seminar, *Contributions of Coastal and Marine Ecosystems to the Global Atmospheric Nitrogen Budget.* Institute of Meteorology, University of Stockholm, Sweden, May.

Invited lecture, *Nitrogen and Society: Benefits and Problems.* Royal Swedish Academy of Sciences, Sweden, May

Invited lecture, *Overview of Nitrogen in the Environment*, Symposium on Impact of Animal Feeding Operations on the Environment. Annual Joint Meeting of the American Society of Animal Science and the American Dairy Science Association, Phoenix, June

Poster presentation, EW Boyer, RW Howarth, JN Galloway. *Riverine Nitrogen Export from the World's Watersheds*. Esturarine Research Federation Meeting, September

Invited presentation, *Nitrogen deposition: Effects of ammonia*. The Ammonia Workshop, Washington, DC, October

Poster presentation (by second author), J Galloway,M Bekunda, K Syers, A Mosier. *The International Nitrogen Initiative: Background, Current Status, and Likely Future Directions*. Sixth African Crop Science Conference in Nairobi, Kenya, October

Poster presentation, JN Galloway, and D Sahagian. *A coordinated approach to investigating human perturbations to the nitrogen cycle*. American Geophysical Union Annual Meeting, San Francisco, CA, December

2002 Invited Presentation, *Nitrogen and the World.* Fertilizer Marketing Annual Meeting, Orlando, Florida, February

Invited Seminar,*Human Alteration of the Global Nitrogen Cycle: Past, Present and Future*. Dept of Biological Sciences, University of Southern California, CA, March

Invited Seminar, *Human Alteration of the Global Nitrogen Cycle: Past, Present and Future*. Wrigley Institute of Marine Sciences, Catalina Island, University of Southern California, March

Poster Presentation, *The Shenandoah Watershed Study: 20 Years of Catchment Hydrogeochemistry.* American Geophysical Union (AGU) Spring Meeting, Washington, DC, May

Invited Seminar, The 2nd International Nitrogen Conference—*How human activities affect the nitrogen cycle.* Science and Technology Consortium Seminar, NRCS/USDA, May

Co-Organizer, Workshop on "*Nitrogen Management for Food Security and Ecosystem Security,*" Science Forum of the World Summit on Sustainable Development, Johannesburg, South Africa, August (did not attend)

Plenary Address, *Consequences of Nitrogen Mobilization and Redistribution.* Joint CACGP/IGAC2002 International Symposium, Crete, Greece, September.

Invited Workshop, *Inter-Element Interactions, a SCOPE Rapid Response Workshop.* Prague, Czech Republic, October

Invited Seminar, *Human Alteration of the Global Nitrogen Cycle: Past, Present and Future.* Institute for Ecosystem Studies, Millbrook, NY, October

Invited Seminar, *Human Alteration of the Global Nitrogen Cycle: Past, Present and Future.* University of New Hampshire, Durham, NH, October

2001 Invited Speaker, *The Global N Story,* Spring AGU Meeting, Boston, MA

Invited Speaker, *Acid Rain Linkages – Ozone, Mercury, Particulate Matter, and Climate Change*. "Acid Rain: Are the Problems Solved?" Conference, Washington, DC

Seminar, *The Global N Cycle: Past, Present, and Future*. Center for Marine Science, University of North Carolina, Wilmington

Seminar, *The Global N Cycle: Past, Present, and Future*. Geophysical Fluid Dynamics Laboratory, Princeton, NJ

2000 Invited Speaker, *The Global Nitrogen Cycle: Atmosphere-Ocean Exchange*. Ocean Sciences Meeting, AGU/ASLO, San Antonio, TX

Invited Speaker, *The Year 1000: What Life was Like at the Turn of the First Millennium.* Great Ideas Lecture Series, University of Virginia, Charlottesville

Invited Speaker, *Human Alteration of the Nitrogen Cycle*. Council of Visitors, Marine Biological Laboratory, Woods Hole, Massachusetts

Keynote Speaker, *Acid Rain, Past, Present, and Future*. National Atmospheric Deposition Program, Saratoga Springs, NY

Invited Speaker, *Effects of Ammonium on Terrestrial Ecosystems*. Shared Resources Workshop, Delaware

Plenary Speaker, *Acid Rain, Nature, and Humans*. Sixth International Acid Rain Conference, Tsukuba, Japan

Invited Speaker, *Sulfur and Nitrogen Cycling at the Regional Scale*. Sixth International Acid Rain Conference, Tsukuba, Japan

1999 Invited Plenary Lecture, *Historical Perspective on Research*. Workshop on Atmospheric Deposition: The Ecological Response, Washington, DC

Invited Speaker, *Symposium on Watershed and Landscape Ecology: Future Directions and Opportunities*. Frostburg, MD

Invited Speaker, *Biogeochemistry at the Watershed Scale*. Shenandoah Watershed Study Seminar, University of Virginia, Department of Environmental Sciences

Featured Speaker, *The Grand Experiment: The Alteration of an Environment by a Clever Animal.* University of Mary's Earth Day Convocation

Presenter, Congressional Staff Briefing on Air Quality, Washington, DC

Presenter, Congressional Staff Briefing on Acid Rain, Washington, DC

Invited Speaker, *The Global N Cycle: Past, Present, and Future*, paper presented at the workshop Critical Effects of Nitrogen Deposition and Ozone on Ecosystems. Institute Of Botany, University Of Basel, Basel, Switzerland

Invited Speaker, *The Global Nitrogen Cycle: Current Status and Future Needs*. Meeting of the Ecological Society of America, Spokane, WA

Invited Speaker, *Earth To Air To Water: The Changing Influence of Atmospheric Deposition on Aquatic Ecosystems*, invited paper presented at the American Society of Limnology and Oceanography, Santa Fe, NM

Invited Speaker, *People and Nitrogen: A Global Interaction*, invited paper presented at the America Society of Limnology and Oceanography, Santa Fe, NM

Seminar, *The Global Nitrogen Cycle*, Chemistry Department, University of Oslo, Norway

1998 Seminar, *Wet Deposition of S & N in Remote Regions of the World: Patterns and Processes*. Utrecht University, Amsterdam, The Netherlands

Invited Speaker, National Research Counsel Committee on Grand Challenges in Environmental Science, Maryland

1997 Staff Briefing on acid rain, acid deposition, Clean Air Act amendments, and Shenandoah National Park research. Southern Environmental Law Center, Charlottesville, VA

1994 National Forum on Environment and Natural Resource R&D, Office of Science and Technology Policy, Executive Office of the President, Washington, DC

1992 Joint Subcommittees of the U. S. House of Representatives, on the subject of Air Quality Issues Affecting our National Parks, Forests, and Public Lands, Washington, DC

Natural Parks and Public Lands Subcommittee, General Oversight and California Desert Lands Subcommittee, Internal and Insular Affairs Committee, US House of Representatives, Washington, DC

1990 Fourth Annual Congressional Scientific Forum on Global Change, Colorado Springs, CO

Joint Group of Experts on Scientific Aspects of Marine Pollution, University of Rhode Island, Narragansett

1988 National Parks and Recreation Subcommittee, US House of Representatives, Washington, DC

Natural Resources and Environmental Subcommittee, Science, Space, and Technology Committee, US House of Representatives, Washington, DC

Energy and Power Subcommittee of the US House of Representatives, Washington, DC

1986 Environmental and Public Works Committee, US Senate, Washington, DC

1985 Public Hearings, National Parks and Recreation Subcommittee, US House of Representatives, Washington, DC

Technical Advisory Committee, State Air Pollution Control Board, Richmond, VA

1984 Briefing: Sir John Mason, National Academy of Sciences, Washington, DC

1983 Roundtable Discussion, Scientific Understanding of Causes and Effects of Acid Deposition. National Academy of Sciences, Washington, DC

Briefing, Science Advisory Board Subcommittee's formation to review management of Federal Acid Rain Research Program: Secretary of Interior William Ruckelhaus

Briefing, President Reagan and Cabinet Council, Washington, DC

Briefing, Science Advisory Board, Washington, DC

1981 Health and the Environment Subcommittee, Energy and Commerce Committee, US House of Representatives, Washington, DC

1980 Environmental Pollution Subcommittee, Environment and Public Works Committee, US Senate, Washington, DC

1979 Acid Precipitation Briefing, Administrator, Environmental Agencies of the Eastern States. Environmental Protection Agency, Washington, DC

Air Quality Committee, National Academy of Sciences, Washington, DC

Natural Resources and Environmental Subcommittee, Science, Space, and Technology Committee, US House of Representatives, Washington, DC

1977 California Air Resources Board, Sacramento, CA

Energy and Power Subcommittee, Interstate and Foreign Commerce Committee, US House of Representatives, Washington, DC

Environmental Study Conference. US House of Representatives, Washington, DC

National Academy of Sciences, Washington, DC

1976 Briefing: Chairman, President's Council on Environmental Quality, Washington, DC

Hearing Examiner, State of Connecticut, Hartford

Hearing Examiner, State of New York, Albany

COMMITTEE MEMBERSHIPS – INTERNATIONAL AND NATIONAL

2015
World Wildlife Fund
Member, Blue Ribbon Panel on Sustainable Food for the 21st Century

2015-2018
EPA Office of Research and Development
Member, Board of Scientific Counselors, Executive Committee

2015-2018
Environmental Development
Associate Editor

2015-2018
EPA Science Advisory Board
Member, Clean Air Scientific Advisory Committee NOx/SOx Panel

2010-2014
Lead Author, Working Group 1, Intergovernmental Panel on Climate Change
Coordinating Lead Author, US National Climate Assessment, Chapter 6, Biogeochemistry

2011-present
Trustee, Marine Biological Laboratory, Woods Hole MA

1979-2014
Director, Shenandoah Watershed Study and Virginia Trout Stream Sensitivity Study

1983-present
Trustee, Bermuda Biological Station for Research, Inc., St. Georges, Bermuda
(1983-present)
President (1988-1995)
Vice President (1987-1988)

2002-2009
Member, Environmental Protection Agency (EPA) Science Advisory Board

2006-2011
Chair, Integrated Nitrogen Committee, EPA Science Advisory Board (2006-2009)
Member, Integrated Nitrogen Committee, EPA Science Advisory Board (2006-2011)

2003-2008
Chair, International Nitrogen Initiative, joint project of SCOPE and IGBP

2005-2007
Member, Organizing Committee, Fourth International Nitrogen Conference, Brazil

2004-2006
Associate Editor, Environmental Chemistry, The Scientific World
International Editorial Board, Journal of Environmental Sciences, Academia Sinica, Beijing

2004
Member, ad-hoc Committee, Air Quality and Ecosystem Change, Clean Air Markets Division, EPA

2003-2004
Member, Organizing Committee, Industrial Animal Production, a SCOPE Rapid Assessment Project.

2003

Member, EPA Science Advisory Committee, Environmental Engineering
Member, EPA Science Advisory Board, Executive Committee
Member, Organizing Committee, Nitrogen Fertilizer Use, a SCOPE Rapid Assessment Project

2002
Member, Organizing Committee, Third International Nitrogen Conference, Nanjing, China

2001
Co-Chair, Second International Nitrogen Conference

2000
Co-convener, Session on Biogeochemistry of Shenandoah National Park, Spring Meeting of American Geophysical Union, Washington, DC

1998
Member, External Review Committee, National Atmospheric Deposition Program, Champaign
Organizer, AAAS Symposium, The Changing Science of Environmental Science, Philadelphia, PA
Co-organizer and Speaker, Workshop on Organic Nitrogen, Maryland

1995
Chair, N Cycle of China Workshop, Beijing
Chair, Integrated Data Analysis Workshop, Shenandoah National Park
Chair, Natural and Anthropogenic Changes: Impacts on Global Biogeochemical Cycles, IGBP Science Symposium, Beijing, China
International Scientific Planning committee, ACID REIGN '95**?** Conference, Gothenburg, Sweden
Organizing Committee, SAC IV and the ICSU Forum on Earth System Research, Beijing

1990-1995
Board Member and Member, Scientific Advisory Committee, Center for a Sustainable Future (1990-1995)

1994
Chair, National Academy of Science Working Group on Integrated Nitrogen Cycle In China and the United States
Co-Chair, Aerosol and Cloud Chemistry Session, 8th International Symposium of the Commission on Atmospheric Chemistry and Global Pollution and Second Conference of the International Global Atmospheric Chemistry Program, Fuji-Yoshida, Japan
Scientific and Technical Advisory Committee, The Chesapeake Bay Program
International Advisory Group for the Scientific Committee, International Conference on Acidic Deposition

1992-1994
Co-Director and Organizing Committee, WMO/UNEP/SCOPE Workshop: Nitrogen Dynamics of the North Atlantic Basin
Steering Committee, Office of Interdisciplinary Earth Studies, University Corporation for Atmospheric Research, Boulder, CO

1992
Organizing Committee, Global Change Institute, Industrial Ecology and Global Change,

Office for Interdisciplinary Earth Studies, Boulder, CO
Editorial Committee Guest, Annual Energy and Environment Reviews, Washington, DC
1987-1992
Editor, Environmental Chemistry Series, Cambridge University Press, Cambridge, MA
1991-1992
Chairman, Global Change Research in China, National Academy of Sciences, Washington, DC
1991
WMO Expert Group on Collection of Precipitation
Correspondent, Acidic Deposition: Its Nature and Impacts, Royal Society of Edinburgh, Glasgow, Scotland
Expert Group on Precipitation Collection, World Meteorological Organization, Geneva, Switzerland
1990
Science Review Board, Shenandoah National Park, Steering Committee, Office of Interdisciplinary Earth Sciences, University Corporation for Research, Boulder, CO
1989
Chairman, USA/China Joint Committee on Global Change, Washington, DC
Visiting Fellow, United Kingdom Research in Atmospheric Chemistry Coordinating Committee, Norwich, UK
Technical Program Committee, Second International Acid Rain Conference, Amsterdam, The Netherlands
1988
Invited Member, BAPMON Re-evaluation Committee, World Meteorological Organization
1987-1988
Organizing Committee, Special Program Panel, Global Transport Mechanisms in the Geo-Sciences, Lisbon, Portugal
1987
Technical Program Committee, International Acid Rain Conference, Lisbon, Portugal
1985
Board of Advisors, Acid Rain Abstracts, EIC Intelligence Inc., New York
1984-1985
Advisory Committee, National Park Service Watershed Project, Ft. Collins, CO
1983-1984
Atmospheric Chemistry and Radioactivity Committee, American Meteorological Society, Boston, MA
1979-1983
Joint U. S./Canadian Acid Precipitation Scientific Committee, National Academy of Sciences, Washington, DC
1977-1982
Executive Committee, Technical Committee, National Atmospheric Deposition Program, Washington, DC
1981
Chairman, Trace Metals Subcommittee, Joint U. S./Canadian Acid Precipitation Committee, National Academy of Sciences, Washington, DC (1981-1983)

1978-1981

Federal Interagency Health and Environmental Effects of Energy Technologies Committee, Washington, DC

1979

Secretary, Executive Committee, National Atmospheric Deposition Program, Washington, DC

Session Chairman, Regional Scale Studies of Atmospheric Deposition Effects, Program Committee, Life Sciences Symposium on Atmospheric Deposition, Gatlinburg, TN

Atmosphere-Biosphere Interactions Steering Committee, National Academy of Science, Washington, DC

1978

Planning Committee, International Workshop, Limnological Aspects of Acid Precipitation, Environmental Protection Agency, Washington, DC

1977-1978

Sulfur Oxides Committee, National Academy of Sciences, Washington, DC

1976

US Delegation, Acid Precipitation Effects Meeting, Telemark, Norway

CURRICULUM VITAE

Terry Gordon, Ph.D.

Education

Year	Degree	Field	Institution
1974	B.S.	Physiology	University of Michigan
1976	M.S.	Toxicology	University of Michigan
1981	Ph.D.	Toxicology	MIT, Advisor - Mary Amdur, Ph.D.

Postdoctoral Training

Year	Specialty	Mentor	Place of Training
1983-1985	Pulmonary disease	Dean Sheppard, MD	UCSF

Academic Appointments

1985-1988 Assistant Research Physiologist, UCSF

1989-1990 Research Assistant Professor, Department of Environmental Medicine, New York University School of Medicine.

1990-1997 Assistant Professor, Department of Environmental Medicine, New York University School of Medicine.

1997-2002 Associate Professor with Tenure, Department of Environmental Medicine, New York University School of Medicine.

2002-present Professor with Tenure, Department of Environmental Medicine, New York University School of Medicine.

Other Professional Positions and Visiting Appointments

1994-1995 Visiting Research Scientist - Lovelace Biomedical Research Institute's Inhalation Toxicology Research Institute in Albuquerque, NM.

Major Committee Assignments (selected)

National

1990 *Ad hoc member*, Swiss NSF grant review

1992 *Member*, NIEHS Program Project grant ad hoc review committee

1992 *Member*, EPA Advisory Workshop on the Human Health Effects of Ozone

1992-1996 *Member*, Respirable Dust Research Council, Bureau of Mines, Department of Interior, 1992 to 1996

1994-1997	*Ad hoc member*, Center for Indoor Air Research grant reviews
1998	*Member*, External Advisory Committee, University of Iowa NIEHS Center of Excellence
1998	*Member*, EPA exploratory research grant review committee
1998	*Member*, Alice Hamilton Award in Occupational Health review committee
1998 & 1999	*Member*, EPA student fellowship review committee
1998-2004	*Co-Chair/member* of Dusts & Inorganics Subcommittee of ACGIH
1998	*Co-Author*; US EPA Criteria Document on Particulate Matter, Chapter on Toxicology
1999	*Ad hoc member*, NCRR/NIH, UC Davis Primate Center grant review
1998	*Member*, Planning Committee for 3rd Particulate Matter Colloquium
2000	*Ad hoc member*, NIH, University of Rochester GCRC review committee
2001	*Ad hoc member*, DOD grant review committee on Acute Lung Injury
2002-2004	*Vice-Chair* of Chemical Substances - Threshold Limit Values Committee of American Conference of Governmental Industrial Hygienists (ACGIH)
2003	*Ad hoc member*, NIEHS Program Project grant review committee
2003	*Ad hoc member*, Mickey Leland Center for Air Toxics review committee, EPA
2003	*Member*, Human Studies Division review committee, EPA
2006-2016	*Chair* of Chemical Substances - Threshold Limit Values Committee of (ACGIH)
2004-2005	*Ad hoc member*, NIOSH NORA priority populations grant review committee
2005	*Ad hoc member*, NIAID Program Project review on polymorphisms in the HLA region
2005	*Ad hoc member*, NIEHS Program Project review on ARCH grant applications
2006	*Ad hoc member*, University of Louisville Program Project review committee, EPA
2006	*Ad hoc member*, NHEERL Training grant review committee, EPA
2006	*Ad hoc member*, NIEHS Director's Challenge review committee, NIEHS
2006	*Ad hoc member*, NIEHS Special Emphasis Panel review, NIEHS
2007	*Ad hoc member*, NRC panel on: Mortality Risk Reduction Benefits from Decreasing Tropospheric Ozone Exposure
2007	*Ad hoc member*, Phosgene Review Panel, American Chemistry Council
2007-2009	*Ad hoc member*, Clean Air Scientific Advisory Committee (CASAC) NOx & SOx Review Panel, EPA
2008	*Ad hoc member*, NHLBI, R0-3 Review Panel
2008&2013	*Ad hoc member*, NIOSH/CDC Review Panel
2008	Ad hoc member, EPA's SAB Panel on PM/Clean Air Research Centers
2008-present	*Member*, Health Canada Advisory Committee
2012	*Ad hoc member,* NIH Lung Repair and Injury Study Section
2013	*Ad hoc member and Chair*, NIEHS K awards Study Section
2013	*Ad hoc member*, NIEHS P30 Center Study Section

2013	*Ad hoc member*, NIEHS Training Grant Study Section
2014	*Ad hoc member and Chair*, NIEHS K awards Study Section
2014-2016	*Member*, NASA SRP Committee on Environmental and Food Safety
2014-2018	*Member*, NIOSH/CDC SOH Study Section
2015-2016	*Member*, NAS Committee on Spacecraft Exposure Guidelines
2016-present	*Ad hoc member*, Clean Air Scientific Advisory Committee (CASAC) PM Review Panel, EPA
2016	*Ad hoc member*, NASA Virtual Institutes grant review
2016-present	*Chair*, NASA Dust Committee

<u>*University*</u>

1993	*Member*, Search Committee for New Faculty, Department of Environmental Medicine
1994-2000	*Member*, Safety Committee, Department of Environmental Medicine
1995-1998	*Member*, Graduate Steering Committee, Department of Environmental Medicine
1996-present	*Co-Director* of Inhalation Chamber Facility, Department of Environmental Medicine
2001-2008	*Program Director* of Pulmonary Toxicology, NIEHS Center Grant
2001-present	*Program Director* of Pulmonary Toxicology, Department of Environmental Medicine
2009-present	*Director* of the NIEHS Training Grant in Toxicology
2003-present	*Deputy Director* of the NIEHS Center of Excellence
2005-2007	*Chair*, Appointments and Promotions Committee, Department of Environmental Medicine
2006-present	*Member*, Graduate Steering Committee, Department of Environmental Medicine
2008-2009	*Member*, Search Committee for New Faculty, Department of Environmental Medicine
2010-present	*Member*, Appointments and Promotions Committee, Department of Environmental Medicine

Memberships, Offices, and Committee Assignments in Professional Societies

1983-2012	*Member*, American Thoracic Society
1985-present	*Member*, Society of Toxicology
1996-1999	*Member*, Program Committee, Occupational and Environmental Health Subassembly, American Thoracic Society
1999	*Chairman*, Nominating Committee, Occupational and Environmental Health Subassembly, American Thoracic Society
1995-1997	*Councilor*, Inhalation Specialty Section, Society of Toxicology
1998-2001	*Member*, Placement Service Committee, Society of Toxicology
1998-present	*Member*, American Conference of Governmental Industrial Hygienists
1998-present	*Member*, Threshold Limit Value – Chemical Substances Committee, ACGIH

2000-2003	*President, Vice-President, Vice-President Elect*, Inhalation Specialty Section, Society of Toxicology
2002-2005	*Member*, Program Committee for Annual Meeting, Society of Toxicology
2006-2009	*Member*, Planning Committee, Occupational and Environmental Health Subassembly, American Thoracic Society
2009-2012	*Member,* Membership Committee, Society of Toxicology
2013-2015	*Member,* Awards Committee, Society of Toxicology
2017	*Member*, Awards Committee, ACGIH

Editorial Positions

2007-present Associate Editor – Environmental Health Perspective

Ad hoc reviewer for:

1990-present
American Journal of Critical Care and Respiratory Disease
American Journal of Cell and Molecular Biology
American Journal of Pathology
American Journal of Physiology
Applied Occupational and Environmental Hygiene
Cancer Cell
Cell Biology and Toxicology
Chest
Environmental Health Perspectives
Environmental Research
European Respiratory Journal
Inhalation Toxicology
Journal of Endotoxin Research
Journal of Nanotoxicology
Journal of Toxicology
Journal of Toxicology and Environmental Health
Lung
New England Journal of Medicine
Particle & Fiber Toxicology
Physiological Genomics
Toxicology
Toxicology and Applied Pharmacology
Toxicological Science
Toxin Reviews

Teaching Experience

1990-2007 *Lecturer* - Principles of Toxicology; Organ Toxicology, Department of Environmental Medicine, graduate students

1990-2006	*Coordinator* - Weekly Seminars in Pulmonary Toxicology, Department of Environmental Medicine, graduate students and postdocs
1992	*Course developer* - Molecular Biology Techniques in Pulmonary Toxicology, Department of Environmental Medicine, Summer I, graduate students
1996-2004	*Lecturer* - Toxicology, NYU, undergraduate and graduate students
2001-present	Director, NYU's NIEHS T32 Training Grant
2011-present	*Developer/Coordinator* –Weekly exposure assessment journal club
2011-present	*Course Developer* – Methods in Environmental Sampling
2015	*Course Developer* – Nanotechnology and Toxicology

Students under direct supervision:

PhD

Ruzmyn Vilcassim, Doctoral Degree, NYU Department of Environmental Medicine; Thesis title: Comparison of the cardiopulmonary effects of air pollution in students who travel abroad, 2014-present.

Eric Saunders, Doctoral Degree, NYU Department of Environmental Medicine; Thesis title: Clearance and translocation of silver nanoparticles are dependent on dissolution and protein transport, 2011-2015. Senior toxicologist, Chemtura, CT

Mary Popovech, Doctoral Degree, NYU Department of Environmental Medicine; Thesis title: Nanoparticles and oxidative stress, 2009-2014. Toxicologist, Exxon-Mobil, NJ

Jaime Mirowsky, Doctoral Degree, NYU Department of Environmental Medicine; Thesis title: Cardiopulmonary health effects of traffic-related air pollutants, 2008-2013, Postdoc, EPA, RTP.

Christina Hickey, Doctoral Degree, NYU Department of Environmental Medicine; Thesis title: Comparative toxicity of ambient particulate mater, 2008-2012. Toxicologist, Firmenich Inc.

Jessica Lyon, Doctoral Degree, NYU Department of Environmental Medicine; Thesis title: Innate and environmental factors in monoallelic gene expression, 2008-2012. Regulatory Scientist, Morgan, Lewis & Bockius LLP.

Lauren Tarrantino, Doctoral Degree, NYU Department of Environmental Medicine; Thesis title: Genetic susceptibility to beryllium, 2003-2008.

Elizabeth Vancza, Doctoral Degree, NYU Department of Environmental Medicine; Thesis title: Interaction of air pollution and allergic asthma, 2003-2009, Senior Toxicologist, Safebridge Consulting.

Scott Wesselkamper - Doctoral Degree, NYU Department of Environmental Medicine; Thesis title: Molecular mechanisms of tolerance to inhaled toxicants, 2001; EPA, Cincinnati.

Wei Yi Su - Doctoral Degree, NYU Department of Environmental Medicine; Thesis title: Effects of ozone and acid aerosol exposures on surfactant associated protein A in the lung, 1993; Executive Director, Regulatory Affairs, Estee Lauder.

MS

Juehui Li, Masters Degree, NYU Department of Environmental Medicine; Thesis title: Particle removal efficiency of face masks worn in Beijing, 2015-2016.

Grace Pan, Masters Degree, NYU Department of Environmental Medicine; Thesis title: Health effects of mainstream and secondhand hookah smoke, 2013-2015.

Kevin Corbett, Masters Degree, NYU Department of Environmental Medicine; Thesis title: Particle characterization of e-cigarette vapor, 2013-2015

Ruzmyn Vilcassim, Masters Degree, NYU Department of Environmental Medicine; Thesis title: Carbon black and PM2.5 in NYC subways, 2012-2014.

Marissa Papaccioli, Masters Degree, NYU Department of Environmental Medicine; Thesis title: Yeast gene sensitivity to ambient pollutants, 2008-2009. Clinical Research Coordinator, Memorial Sloan-Kettering.

Tau Hur - Masters Degree, NYU Department of Environmental Medicine; Thesis title: Organ response of metallothionein and heme oxygenase due to inhaled endotoxin, 1992; Pulmonary Physician, Taiwan.

Sean Thomas - Masters Degree, NYU Department of Environmental Medicine; Thesis title: Metals in ambient PM, 1995; MD, Ophthalmology.

Paul Decker - Masters Degree, NYU Department of Environmental Medicine; Thesis title: Occupational exposure to heavy metals in pressure-treated wood dust, 1996; Certified Industrial Hygienist, Director of Safety, Novartis.

Students trained during research rotation:
Rona Baruch, Asaya Ayser, Venu Khandavalli, Lata Koshy, Pamela Tijerini

Minority/high school/undergraduate students:
Eric Thomas, Raylene Sanchez, Efrem Kleinman, Christopher Gordon, Nicholas Halzack, Dan Kirlin, Jonathan Frey, Colin Gordon, Michael Popovech.

In advisory function:
Ph.D. Thesis Committees: Jeff Duffy, Trish Weideman, Tim McGovern, Ilona Jaspers, Zhao Long Gong, Jonathan Eckard, Zhanpeng Yuan, Rita Yusuf, Claudio Sorrentino, Catherine Vega, Chun Li Wu, Alice Ng, Gi Soo Kang, Patricia Gillespie, Ariel Spiro-Cohen, AJ Cuevas,

Eric Liberda, Kevin Cromar, Lars Perlmut, Michelle Hernandez, Joshua Vaughan, Dana Lauterstein, Xun Che, Liyan Hu, Kirtan Kaur.

Major Research Interests

1) Genetic susceptibility to inhaled gases and particles – use of classic mouse genetic models of human disease and computational genomics to identify potential candidate genes that contribute to complex traits of pathogenesis
2) Occupationally and environmentally induced lung disease – identify causative agents in mixtures that produce pulmonary disease and establish threshold concentrations, if any, of response to particles and gases
3) Mainstream and secondhand smoke from alternative tobacco products

Grants Received

T. Gordon, Principal Investigator

Current:

NIEHS, Co-PI; "Air Quality, Child, and Adult Health in Homes where Hookahs are Smoked" - R21 ES026996; 4/17-3/19.

NIEHS, "Training Program in Environmental Toxicology"- 5 T32 ES007324-15; 8/15 – 9/20; $1,000,000.

NCI, "Adverse Effects of Mainstream Tobacco-Based Hookah Smoke in Young Adults" - 3 P30 CA016087-33S1 (Supplement); 4/14 – 3/17; $397,000.

Deputy Director, NIEHS Center of Excellence, "Research in Environmental Health Sciences"; 1964-2009; $1,100,000; Max Costa, P.I.

T. Gordon, Co- Investigator

NHLBI, "Microbial Triggers and Molecular Mechanisms of Th17 Mediated Airway Inflammation"; 1 R01HL125816-01A1 (Koralov, PI); 08/15-05/20.

NIH/NIDCR, "Modulation of oral microenvironment by E-cigarette aerosol mixtures"; R01 DE025992-01 (Saxena, PI); 04/16-03/20.

NIH/NHLBI, "RAGE Mediates LPA Induced Pulmonary Inflammation"; R01HL119326-01A1 (Nolan, PI); 09/15-06/20.

Prior:

NIEHS, “The interaction of diet, air pollution, and cardiovascular disease in NHANES”; 2012-2015; $375,000.

NIEHS, “Acute and Chronic In vivo Effects of Engineered Nanomaterials”; 1U01ES020126; 2010-2015; $1,375,000.

NIOSH/CDC, “Differential toxicity of beryllium materials”; 2/07-1/13; $237,000.

NIOSH/CDC, “Strategies for Setting Occupational Exposure Limits for Engineered Nanomaterials.”
2012; $20,000 (conference grant).

Health Effects Institute, “In Vitro Cellular Exposures and in Vivo Aspiration Exposures in Mice to Coarse, Fine, and Ultrafine PM”; 2009-13; $847,000.

U.S. Environmental Protection Agency, "Coarse particle toxicity”; 3/08-2/11; $1,200,000.

U.S. Environmental Protection Agency, "Early life stage toxicity of manufactured nanoparticles in fish”; 1/07-12/09; $375,000.

Department of Energy, “Development of biomarkers for chronic beryllium disease”; 9/08-8/10; $300,000.

U.S. Environmental Protection Agency, "Role of particle agglomeration in nanoparticle toxicity”; 10/05-9/08; $375,000.

National Institute of Environmental Health Sciences, R0-1 ES 011473, "Genetic susceptibility to chronic beryllium disease"; 4/03 - 4/07; $1,267,394.

Department of Energy, “Transgenic mouse models of chronic beryllium disease”; 9/04-8/07; $98,350.

U.S. Environmental Protection Agency, "Genetic basis of the increased susceptibility of children to inhaled pollutants”; 2/03-1/07; $749,175.

National Institute of Occupational Health and Safety, RO1 #OH 03044, "Pulmonary effects of machining fluid aerosols"; 9/93 - 9/04; $326,000.

Undersea and Hyperbaric Medical Society, “Genetic basis of the complications of HBO therapy”, 1/02-12/02; $5,000.

Independent Lubricant Manufacturers Association, "Influence of dynamic changes in chemical and microbiological characteristics on metal working fluid toxicity"; 10/01-9/01; $54,000.

U.S. Environmental Protection Agency, "Health effects of ambient particulate matter in controlled human exposures"; 6/99-8/01; $390,000.

National Institute of Environmental Health Sciences, R0-1 ES 08410, "Bioavailability of heavy metals in pressure treated wood dust"; 12/96 - 11/98; $434,172.

U.S. Environmental Protection Agency, "Mechanism of PM-induced acute health effects"; 10/97 - 9/00; direct costs - $664,653.

Health Effects Institute, "Adverse health effects of ambient PM10 in compromised animal models"; 7/95 - 12/97; direct costs - $628,338.

National Institute of Environmental Health Sciences, R0-3 ES08625, "Role of ambient particulate matter in chronic bronchitis"; 10/96-9/97; direct costs - $50,000.

National Institute of Environmental Health Sciences, Research Career Development Award, KO-4 ES 00256, , "Inhaled pollutants - Mechanisms of injury and adaptation"; 3/93 - 2/98; $319,000.

National Institute of Environmental Health Sciences, Center of Excellence grant; pilot project, "Bioavailability of heavy metals in pressure treated wood dust"; 6/96 - 5/97; $10,000.

National Institute of Environmental Health Sciences, "Research supplements for underrepresented minorities"; 7/91-9/94; $6,000.

National Institute of Environmental Health Sciences, RO1 #ES 04947, "Mechanisms of airway responses to organic dusts"; 7/89 - 6/94; $612,948.

National Heart, Lung, and Blood Institute, New Investigator Research Award. (R23 Grant), #HL35222, "Mechanisms of granulocyte-mediated airway injury"; 12/85 - 11/88; $107,144.

T. Gordon, Co-Investigator

Prior:

Co-Investigator, HEI, “Contribution of PM components to adverse health effects”; 2006-2010; $4,000,000; Mort Lippmann, P.I.

Co-Investigator, NIEHS R0-1; Diesel exhaust particles and mucosal immunity”; 2006-2010; Joan Reibman, P.I.

Co-Investigator, U.S. Environmental Protection Agency, "PM Center"; 6/99 - 5/05; $1,000,000; Mort Lippmann, P.I.

Co-Investigator, Phillip Morris Corp., "Effects of prenatal exposure to cigarette smoke on tumor surveillance mechanisms in the developing offspring"; 08/02 - 07/05; $179,688; Judy Zelikoff, P.I.

Co-Investigator, NIH, "Aerosolized cationic lipid/p53 gene therapy in patients with lung cancer"; 7/01 - 6/04; $1692,911; Roman Perez-Soler, P.I.

Co-Investigator, NIEHS, "c-Jun N-terminal kinase pathway in silica-induced apoptosis"; 9/97 - 9/02; Kam-Meng Tchou-Wong, P.I.

Co-investigator, Health Effects Institute, "Ozone and allergic asthma"; 2/95 - 1/98; $450,000; Richard Schlesinger, P.I.

Co-investigator, National Institute of Occupational Health and Safety, RO-1 #OH 02987, "Metal fume fever"; 9/92 - 9/95; $645,000; William Beckett, P.I.

Co-investigator, Center for Indoor Air Research Contract #92-04, "Respiratory toxicology of kerosene heater emissions"; 1/92 - 12/94; $460,000; Lung Chi Chen, P.I.

National Institute of Environmental Health Sciences, PO-1 #ES02429, Program Project Grant, "Toxicology of combustion generated acid aerosols"; Principal Investigator on Biochemistry Project; $440,000; 12/88 - 11/91; Mary Amdur, P.I.

Boards and Community Organizations

2001-2002	Member, Town of Woodbury committee assigned to incorporate new air pollution code
1995-2001	Member, then Chairman, of Citizen Advisory Panel facilitating communication between Nepera Chemical Co. and local communities

Other - Invited Speaker/Symposium Chair

1997 - present

Invited Speaker, "Mechanisms of the Lung Inflammatory and Granulomatous Response to Metal Working Fluids: Insight from Experimental Models", Metal Working Fluids Symposium II, September, 1997, Detroit, MI.

Invited Speaker, "Hematologic and cardiovascular effects of acute exposure to concentrated ambient PM", International Symposium on Health Effects of PM in Ambient Air, April, 1997, Prague, Czech Republic.

Invited Speaker, "Cardiovascular and pulmonary effects of concentrated ambient PM", 6th European Meeting of Environmental Hygiene, June, 1997, Graz, Austria.

Symposium Chairman, Genetic determinants of susceptibility to inhaled pollutants", March, 1997, SOT Annual Meeting.

Invited Speaker, "Cardiopulmonary effects of ambient PM", Johns Hopkins University, Department of Environmental Health, 1998.

Invited Speaker, "The biological effects of endotoxin", University of Alberta, Canada, 1998.

Invited Speaker, "Cardiopulmonary effects of ambient PM", University of Alberta, Canada, 1998.

Invited Speaker, "Models of asthma/allergy" in Animal Models of Cardiopulmonary Disease, a Symposium, March, 1999, SOT Annual Meeting.

Roundtable Co-Chairman, The Use of Inhalation vs. Instillation Methods to Assess Pulmonary Toxicity, March, 1999, SOT Annual Meeting.

Chairman/Organizer – Postgraduate course on Mammalian Genetics, 1999, ATS Annual Meeting.

Invited Speaker, "Comparison of clinical studies and animal data", 2000, Hannover, Germany.

Invited Speaker, "Hypersensitivity pneumonitis and metal working fluids", Bioaerosols Conference, 2000, NIOSH, Morgantown, WV.

Co-Chair/Invited Speaker, "Mechanisms of the lung inflammatory and granulomatous response to metal working fluids: Insight from experimental models", Symposium, 2000, ATS Annual Meeting.

Invited Speaker, "Metal exposure and toxicity of the respiratory tract" in Metals and the Lung, a Continuing Education Course, March, 2000, SOT Annual Meeting.

Conference Moderator, "TDI – Occupational exposure limits", 2001, Cincinnati, OH.

Symposium Chairman, Genetic Susceptibility, March, 2001, SOT Annual Meeting.

Symposium Co-Chairman, Environment Influences on the Development and Severity of Allergic Asthma, March, 2001, SOT Annual Meeting.

Invited Speaker, "Tolerance: Physiology to genes", Johns Hopkins University, Department of Environmental Health, 2001.

Session Chairman, Health effects of mineral oil mist and metal working fluids symposium, October, 2002, Cincinnati, OH.

Session Chairman, Cardiopulmonary models of susceptibility to ambient particulate matter, 4th PM Colloquium, 2002, Pittsburgh, PA.

Invited Speaker, "Genetic susceptibility to adverse effects in the lung", Yale School of Medicine, Division of Occupational Medicine, 2002, New Haven, CT.

Workshop Chairman, 4th Annual EPA Particulate Matter Center Directors' meeting, 2003, Rochester, NY.

Symposium, Co- Chairman and Invited Speaker, Occupational Lung Disease in Response to Mixed Exposures, March, 2003, SOT Annual Meeting.

Leader/Organizer, International, multi-Center study on the adverse effects of ambient particles (US, Netherlands, and Germany), 12/03 to present.

Invited Speaker/Discussant, Health Effects of Particles from Motor Engine Exhaust and Ambient Air Pollution, March, 2004, Bilthoven, Netherlands.

Organizer, "International workshop on the design and analysis of experimental studies using particulate matter", May, 2004, Boston.

Co-Chair/Invited Speaker, "Linking health effects to PM components, size, and sources", Symposium, 2005, SOT Annual Meeting.

Invited Speaker, 8th International Particle Symposium, October, 2005, U.S. EPA, RTP

Invited Speaker, German MAK 50th anniversary symposium, October, 2005, Bonn, Germany.

Invited Speaker, Duke University, Interdepartmental Toxicology Lecture Series, September, 2005, Durham.

Invited Speaker, Society of Tribologists and Lubrication Engineers, May, 2006, Calgary, Alberta

Invited Speaker, 10th International Inhalation Symposium, May, 2006, Hannover, Germany

Invited Speaker, "Occupational exposure limits - Worldwide", Yale School of Medicine, Division of Occupational Medicine, May, 2006, New Haven, CT.

Invited Speaker, "Toxicological Profiles of Ambient PM and Gases", Symposium, 2006, SOT Annual Meeting.

Co-Chair/Invited Speaker, "Genetics of Lung Disease: From Mouse to Man", Symposium, 2006, ATS Annual Meeting.

Co-Chair/Invited Speaker, "Interpretation of Epidemiologic Studies of Multipollutant Exposure and Health Effects", Conference, 2006, EPA.

Invited Speaker, "Committee on Beryllium Alloy Exposures", DOE/NRC Workshop, 2007.

Invited Speaker, "Genetics and age in response to inhaled pollutants", Rutgers University, EOHSI, 2008.

Invited Speaker, "Non-neoplastic responses of A/J mice", Symposium, 2008, American College of Toxicology.

Invited Speaker, "Coarse PM", U.S. EPA, 2013.

Invited Speaker, "Coarse PM", Michigan State University, 2013.

Invited Speaker, "Benzene TLV", Brazilia, Brazil, International Symposium on Benzene, 2013.

Invited Speaker, "Updates to the TLV Process", Michigan NORA Symposium, 2013.

Invited Speaker, "The role of susceptibility factors in the response to the environment", U of Colorado, 2014.

Invited Speaker, "The role of susceptibility factors in the response to the environment", Pacific Northwest National Laboratories, 2014.

Invited Speaker, "The effect of secondhand hookah smoke on workers", World Tobacco Conference, Abu Dhabi, 2015.
Rapporteur, "The adverse health effects of smoke from fires", SOT annual meeting, 2015.

Invited Speaker, "ACGIH's TLV Committee", NIVA Occupational Health Course in Sweden, 2015.

Invited Speaker, "The adverse effects of alternative tobacco products", Karolinska Institute, Stockholm, 2015.

Invited Speaker, "The adverse effects of inhaled nanoparticles", West Virginia University, 2015.

Invited Speaker, "Inter-individual responses to toxicants – occupational perspective", NIEHS Inter-individual Factors Symposium, Washington, DC, 2015

Keynote Speaker, "Updates to ACGIH's TLV Process", Occupational Roundtable Annual Meeting, New Brunswick, NJ, 2015.

Invited Speaker, "The adverse effects of hookah smoke", American College of Toxicology Annual Meeting, Summerlin, NV, 2015.

Bibliography

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Costa DL, Gordon T. Air Pollution. In: Klaassen CD, (ed). Casarett and Doull's Toxicology. Macmillan, NY, NY, 2013.

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Education

Post-Doctoral Fellow (1984), Environmental Science and Public Policy, Harvard School of Public Health. Advisors: Professors Donald Hornig, Marc Roberts, and Howard Raiffa.

Ph.D. in Urban and Public Affairs (1983), The Heinz School, Carnegie-Mellon University.
Dissertation: "Automobile Safety: An Investigation of Occupant-Protection Policies."
Committee: Professors M. Granger Morgan, Steven Garber and Alfred Blumstein.

M.A. in Public Affairs (1980), Duke University.
Thesis: "The Value of a Life: What Difference Does It Make?"
Advisor: Professor James W. Vaupel.

B.A. with Honors in Economics and Politics (1978), Wake Forest University.
Honors Paper: "A Cost-Benefit Analysis of the 55 MPH Speed Limit."
Honors Paper: "A Theory of Criminal Punishment."
Advisor: Professor Jack Fleer.

Recent Positions

Dean, School of Public and Environmental Affairs, Indiana University, Bloomington and Indianapolis, Indiana, 2008 to present

Leads innovative, two-campus $50-million professional school with programs in arts administration, criminal justice, environmental science and policy, health care management, non-profit management, and public affairs. Orchestrated strategic planning processes with faculty, staff, students, alumni and donors, leading to publication of "SPEA 2015" and "SPEA 2020." Accomplishments to date: (1) hired thirty new tenure-line faculty on the two campuses (Bloomington and Indianapolis); (2) raised $17 million in philanthropic support from individuals, corporations, and foundations; (3) Master's in Public Affairs Program (Bloomington) rose to #2 out of 266 programs in the 2012 *U.S. News and World Report* national survey; (4) launched the "Indiana Futures Project" through the School's Public Policy Institute, a community-based deliberation prior to Indiana's state-level elections in November 2012; and (5) tripled the rate of student enrollment in overseas study programs, including new SPEA programs in Barcelona, Beijing, Berlin, Croatia, Hanoi, Kenya, London, Moscow, Pamplona, Siberia and Speyer; (6) launched SPEA Connect, the first fully on-line MPA program offered by a top graduate program in public affairs; (7) expanded by 75% (to more than 1500) the number of

undergraduate majors on the Bloomington campus; (8) secured new laboratory space for SPEA's environmental science faculty while renovating existing space to meet the needs of public affairs faculty and staff on both campuses. A $12 million addition to the main SPEA building, named after former Treasurer Secretary Paul O'Neill, has been approved by the IU Trustees.

Dean, The Pardee RAND Graduate School, RAND Corporation, Santa Monica, California, 2006 to 2008

Led innovative policy-analysis Ph.D. program based on apprenticeship relationships with RAND researchers. Responsible for curricula, faculty oversight, student recruitment and placement, fundraising, commencement exercises and disciplinary issues. Streamlined the core curriculum, established new analytic concentrations, expanded recruitment of female and minority students, added a weeklong workshop on American culture for international fellows, and revamped the dissertation process to enable students to start the dissertation process earlier. Raised $3.4 million in philanthropic gifts from individuals and corporations to support scholarships, dissertations and other educational expenses.

Administrator, Office of Information and Regulatory Affairs, US Office of Management and Budget, Executive Office of the President, Washington, D.C., 2001 to 2006

Oversaw for President George W. Bush federal regulatory policy, statistical policy and information policy. As Senate-confirmed political appointee, directed a staff of 50 career policy analysts with backgrounds in science, engineering, economics, statistics and law. Strengthened the role of benefit – cost considerations in federal regulation while establishing new information-quality procedures in the federal government. Simplified hundreds of regulations and helped design valuable new rules on clean air, auto fuel economy and food safety.

Founding Director, Center for Risk Analysis, Harvard School of Public Health, Boston, MA, 1989 to 2001

Created mission-oriented Center with programs in automotive safety, environmental health, and medical technology. Raised over $10 million in governmental and private support. Financed eight new faculty positions, new course development, and numerous doctoral students.

Deputy Chairman, Department of Health Policy and Management, Harvard School of Public Health, Boston, MA, 1987 to 1992

Supported Department Chairman in curriculum reform, faculty recruitment and evaluation, budgeting and student recruitment and placement.

Staff Associate, Committee on Risk and Decision Making, National Research Council/National Academy of Sciences, Washington D.C., 1979 to 1981

Supported Study Director and Committee Chairman in preparation of an NAS report on the future of risk analysis in national policy.

Academic Appointments

Professor of Public Affairs (with tenure), School of Public and Environmental Affairs, Indiana University, Bloomington and Indianapolis, IN (2008 to present).

Professor of Policy Analysis, Pardee RAND Graduate School, Santa Monica, CA (2006 to 2008).

Professor of Policy and Decision Sciences (with tenure), Department of Health Policy and Management, Harvard School of Public Health, Boston, MA (1991 to 2003).

Associate Professor of Policy and Decision Sciences, Department of Health Policy and Management, Harvard School of Public Health, Boston, MA (1988 to 1991).

Assistant Professor of Policy and Decision Sciences, Department of Health Policy and Management, Harvard School of Public Health, Boston, MA (1985 to 1988).

Assistant Professor, School of Urban and Public Affairs, Carnegie-Mellon University, Pittsburgh, PA (1984 to 1985).

Doctoral Students and Fellows

Adam Abelkop (Ph.D.)	Jill Morris (Ph.D.)
Jessica Alcorn (Ph.D.)	Doreen Neville (Sc.D.)
Sandra Baird (Fellow)	Naveed Paydar (Ph.D.)
Agi Botos (Ph.D.)	Susan Putnam (Sc.D.)
Phaedra Corso (Ph.D.)	Alon Rosenthal (Sc.D.)
Joshua T. Cohen (Ph.D.)	Dana Gelb Safran (Sc.D.)
Alison Taylor Cullen (Sc.D.)	Mary Jean Sawey (Fellow)
Diana Epstein (Ph.D.)	Maria Segui-Gomez (Sc.D.)
George Gray (Fellow)	Joanna Siegel (Sc.D.)
Sara Hajiamiri (Ph.D.)	Andrew Smith (Sc.D.)
Evridiki Hatziandreu (Sc.D.)	Tammy Tengs (Sc.D.)
Neil Hawkins (Sc.D.)	Kimberly Thompson (Sc.D.)
David Holtgrave (Fellow)	Edmond Toy (Ph.D.)
Nancy Isaac (Fellow)	Eve Wittenberg (Ph.D.)
Bruce Kennedy (Fellow)	Zach Wendling (Ph.D.)
Michelle Lee (Ph.D.)	Scott Wolff (Sc.D.)
Younghee Lee (Ph.D.)	Fumie Yokota (Ph.D.)
Ying Liu (Ph.D.)	Yu Zhang (Ph.D.)

Extramural Grant Support from the Federal Government

Principal Investigator. Evaluation of Countermeasures to Reduce Drinking and Driving. U.S.

Centers for Disease Control. $75,000. 1990-91.

Co-Investigator. Harvard Injury Control Research Center. U.S. Centers for Disease Control. $2.0 million per year. 1990-94.

Principal Investigator. The Determinants of Lifesaving Investments. U.S. National Science Foundation. $150,000. 1993-95.

Principal Investigator. Harvard Injury Control Research Center. U.S. Centers for Disease Control. $1.2 million per year. 1995-97.

Principal Investigator. Community-Based Intervention to Encourage Rear Seating of Young Child Passengers. U.S. Centers for Disease Control. $200,000. 1998-00.

Awards

Elected Fellow, National Academy of Public Administration (2009).

Distinguished Lifetime Achievement Award, Society for Risk Analysis (2008).

Co-Recipient (with Ryan Keefe and Jay Griffin) of the annual Best Paper Award in Risk Analysis (2008), vol. 28.

Alumni Merit Award, Carnegie Mellon University (2002).

Annual Public Service Award for Achievements in Risk Communication to the American People, Annapolis Center, Annapolis, Maryland (1998).

Award for Outstanding Service in Helping to Develop and Support the National Agenda for Injury Control, U.S. Centers for Disease Control (April 25, 1991).

Outstanding Oral Presentation, "The Case for Motor Vehicle Injury Control", Society for Automotive Engineers, Industry-Government Meetings (May 16, 1991).

Co-Recipient (with Steven Garber) of the annual Herbert Salzman Award for the "Outstanding Paper" in Volume 3 of the Journal of Policy Analysis and Management (1984).

Service

Member, Committee on Preparing the Next Generation of Policy Makers for Science-Based Decisions. National Research Council/National Academy of Sciences (March 2014 to June 30, 2016).

Director, NSF International, Ann Arbor, MI (2013 to present).

Expert Witness, Boies, Schiller, Flexner, Table Saw Safety (2009 to 2013).

Faculty Advisor to IU Ballroom Dance Club (2011 to present).

Faculty Advisor to IU Debate Team (2009 to present).

Member, International Advisory Board of Germany's Helmholtz-Programme "Technology, Innovation and Society" (2010 to present).

Member, Administrative Conference of the United States (2011 to 2012).

Chairperson, Regulatory Occupations Evaluation Committee (ROEC), State of Indiana (2010 to present).

Member, The B. John Garrick Foundation for the Advancement of the Risk Sciences, Advisory Board (2010 to present).

Member, Dow AgroSciences Advisory Committee (2010 to 2013).

Member, American Chemistry Society (2008 to present).

Member, Board of Scholars, American Council for Capital Formation (1995 to 2000 & 2007 to present).

Member, Scientific and Technology Council, International Risk Governance Council, Lausanne, Switzerland (2008 to present).

Member, Board of Directors, International Risk Governance Council, Geneva, Switzerland (2006 to 2008).

Member, Committee on the Status and Future of Federal e-Rulemaking (2008).

Member of the Scientific Advisory Panel, Green Chemistry Initiative, State of California (2007 to 2008).

Member, Public Health Policy Advisory Board (1997 to 2001).

Member, National Council on Radiation Protection and Measurement (1997 to 2001).

Member, Editorial Board, Risk: Health, Safety and Environment (1990 to 2001).

Member, Editorial Board, Journal of Risk Research (1990 to 2001).

Member, Editorial Board, Risk Analysis: An International Journal (1989 to 2001, 2008 to present).

Member, Editorial Board, Injury Control and Safety Promotion (1999).

Member, Editorial Board, Accident Analysis and Prevention: An International Journal (1990 to 1999).

Member, Editorial Board, Journal of Benefit-Cost Analysis (2001 to present).

Elected President, Society for Risk Analysis (1995 to 1996).

Member, Ad Hoc Committee on Risk Analysis, Advisory Body to the President of the National Academy of Sciences (1994).

Member, Board of Visitors, Wake Forest University (1991 to 1994).

Member, Committee to Review the Structure and Performance of the Health Effects Institute, Board on Environmental Studies and Toxicology, National Research Council (1992 to 1993).

Member, Motor Vehicle Safety Research Advisory Committee, U.S. Department of Transportation, Washington, D.C. (1990 to 1993).

Member, Highway Safety Study, Strategic Transportation Research Committee, Transportation Research Board, (1989 to 1991).

Member, Committee to Identify Measures that May Improve the Safety of School Bus Transportation, Transportation Research Board, (1987 to 1988).

Books

John D. Graham, Laura Green, and Marc J. Roberts, In Search of Safety: Chemicals and Cancer Risk, Harvard University Press, Cambridge, MA, 1988.

John D. Graham (ed.), Preventing Automobile Injury: Recent Findings of Evaluation Research, Auburn House Publishing Company, Dover, MA, 1988.

John D. Graham, Auto Safety: Assessing America's Performance, Auburn House Publishing Company, Dover, MA, 1989.

John D. Graham (ed.), Harnessing Science for Environmental Regulation, Praeger, Westport, CT, 1991.

John D. Graham and Jonathan B. Wiener (eds.), Risk versus Risk: Tradeoffs in Protecting Health and the Environment, Harvard University Press, Cambridge, MA, 1995.

John D. Graham (ed.), The Role of Epidemiology in Regulatory Risk Assessment, Elsevier Science, Amsterdam, NL, 1995.

John D. Graham and Jennifer K. Hartwell (eds.), The Greening of Industry: A Risk Management Approach, Harvard University Press, Cambridge, MA, 1997.

John D. Graham, Bush on the Home Front: Domestic Policy Triumphs and Setbacks, Indiana University Press, Bloomington, IN, 2010.

Kristin S. Seefeldt and John D. Graham, America's Poor and the Great Recession, Indiana University Press, Bloomington, IN, 2013.

Eberhard Bohne, John D. Graham, Jos C.N. Raadschelders in collaboration with Jesse Paul Lehrke, Public Administration and the Modern State: Assessing Trends and Impact, Palgrave Macmillan, Houndsmills, Basingstoke, Hampshire, 2014.

Adam Abelkop, John D. Graham, and Todd Royer, Persistent, Bioaccumulative, and Toxic (PBT) Chemicals, CRC Press, Boca Raton, FL, 2015

John D. Graham, Obama on the Home Front: Domestic Policy Triumphs and Setbacks, Indiana University Press, Bloomington, IN, in press.

Published Papers and Reports (* indicates peer reviewed)

1. James W. Vaupel and John D. Graham, "Egg in Your Bier?" Public Interest, Winter 1980, 3-17.

2.* John D. Graham and James W. Vaupel, "The Value of a Life: What Difference Does It Make?" Risk Analysis, Volume 1, 1981, 89-95; reprinted with revision, What Role for Government? eds., Richard Zeckhauser and Derek Leebauert, Durham, NC: Duke University Press, 1983, 176-186; reprinted, Risk Benefit Analysis in Water Resource Planning and Management, ed., Yacov Y. Haimes, New York: Plenum Press, 1981, 233-244.

3.* John D. Graham, "Some Explanations of Disparities in Life Saving Investments", Policy Studies Review, Volume 1, 1982, 692-704.

4.* John D. Graham, "On Wilde's Theory of Risk Homeostasis", Risk Analysis, Volume 2, 1982, 235-237.

5. John D. Graham and Patricia Gorham, "NHTSA and Passive Restraints: A Case of Arbitrary and Capricious Deregulation", Administrative Law Review, Volume 35, 1983, 193-252.

6. John D. Graham, "Automobile Crash Protection: Institutional Responses to Self-Hazardous Behavior", Risk Analysis, Institutions, and Public Policy, ed., Susan G. Hadden, Associated Faculty Press, 1984, 39-59.

7.* John D. Graham and Steven Garber, "Evaluating the Effects of Automobile Safety Regulation", Journal of Policy Analysis and Management, Volume 3, No. 2, 1984, 206-224.

8.* John D. Graham and Max Henrion, "A Probabilistic Analysis of the Passive-Restraint Question", Risk Analysis, Volume 4, No. 1, 1984, 25-40.

9. Robert W. Crandall and John D. Graham, "Automobile Safety Regulation and Offsetting Behavior: Some New Empirical Estimates", American Economic Review, Volume 74, No. 2, May 1984, 328-331.

10.* John D. Graham, "Technology, Behavior, and Safety: An Empirical Study of Automobile Occupant-Protection Regulation", Policy Sciences, Volume 17, 1984, 141-151.

11. John D. Graham, "The Failure of Agency-Forcing: The Regulation of Airborne Carcinogens Under Section 112 of the Clean Air Act", Duke Law Journal, February 1985, 100-150; selected for republication in Land and Environment Law Review, ed., Stuart L. Deutsch, 1986.

12. John D. Graham, "Secretary Dole and the Future of Automobile Airbags", Brookings Review, Summer 1985, 10-15.

13. John D. Graham, Howard Raiffa, and James W. Vaupel, "Science and Analysis: Roles in Risk and Decision Making", Risk Evaluation and Management, eds., Vincent Covello, Joshua Menkes, and Jeryl L. Mumpower, New York: Plenum Press, 1986, 503-518.

14.* John D. Graham and Younghee Lee, "Behavioral Response to Safety Regulation: The Case of Motorcycle Helmet-Wearing Legislation", Policy Sciences, Volume 19, 1986, 253-273.

15.* John D. Graham, "Cancer in the Courtroom: Risk Assessment in the Post-Benzene Era", Journal of Policy Analysis and Management, Volume 6, No. 3, 1987, 432-438; reprinted in Environmental Risk Management: Is Analysis Useful? Air Pollution Control Assoc., Pittsburgh, PA, 1986, 98-104.

16. John D. Graham, "Application of Decision Analysis to Mental Health", Medical Care, Volume 25, 1987, 585-586.

17.* Evridiki Hatziandreu, John D. Graham, and Michael A. Stoto, "AIDS and Biomedical Research Funding: A Comparative Analysis", Reviews of Infectious Diseases, Volume 10, No. 1, 1988, 159-167.

18.* William N. Evans and John D. Graham, "Traffic Safety and the Business Cycle", Alcohol, Drugs, and Driving: Reviews and Abstracts, Volume 4, 1988, 31-38.

19. John D. Graham, Neil Hawkins, and Marc J. Roberts, "Expert Scientific Judgment in Quantitative Risk Assessment", Carcinogen Risk Assessment: New Directions in Qualitative and Quantitative Cancer Risk Assessment, eds., Ronald W. Hart and Fred D. Hoerger, Banbury Reports 31, New York: Cold Spring Harbor Laboratory, 1988, 231-244.

20. John D. Graham, Book Review: "Assessing OSHA's Future", Journal of Policy Analysis and Management, Volume 7, No. 7, 1988, 742-743.

21.* Neil C. Hawkins and John D. Graham, "Expert Scientific Judgment and Cancer Risk Assessment: A Pilot Study of Pharmacokinetic Data", Risk Analysis, Volume 8, No. 4, 1988, 615-625.

22.* John S. Evans, Neil S. Hawkins, and John D. Graham, "Uncertainty Analysis and the Value of Information: Monitoring for Radon in the Home", Journal of the Air Pollution Control Association, Volume 38, 1988, 1380-1385.

23.* Milton C. Weinstein, John D. Graham, Joanna E. Siegel, and Harvey V. Fineberg, "Cost Effectiveness Analysis of AIDS Prevention Programs: Concepts, Complications, and Illustrations" in AIDS: Sexual Behavior and Intravenous Drug Use, eds., C. F. Turner et al., National Research Council, Washington, D.C., 1989, 471-499.

24. Alon Rosenthal, Mary Jean Sawey, and John D. Graham, "Incinerating Municipal Solid Waste: A Health Benefit Analysis of Controlling Emissions", Contract Report, U.S. Congressional Research Service, Library of Congress, Washington, DC, April 21, 1989.

25.* Robert C. Crandall and John D. Graham, "The Effect of Fuel Economy Standards on Automobile Safety", Journal of Law and Economics, Volume 32, 1989, 97-118.

26.* John D. Graham, "Communicating About Chemical Hazards", Journal of Policy Analysis and Management, Volume 8, No. 2, 1989, 307-313.

27. * Joanna Siegel, John D. Graham, and Michael A. Stoto, "Allocating Resources Among AIDS Research Strategies", Policy Sciences, Volume 23, 1990, 1-23.

28.* Scott K. Wolff, Neil C. Hawkins, Susan M. Kennedy, John D. Graham, "Selecting Experimental Data for Use in Quantitative Risk Assessment: An Expert-Judgment Approach", Journal of Toxicology and Industrial Health, Volume 6, 1990, 275-291.

29.* Steven Garber and John D. Graham, "The Effects of the New 65 MPH Speed Limit on Rural Highway Fatalities: A State-by-State Analysis", Accident Analysis and Prevention, Volume 22, 1990, 137-149.

30. Mary Jean Sawey, David R. Holtgrave, and John D. Graham, "The Potential Health Benefits of Controlling Hazardous Air Pollutants", Villanova Environmental Law Journal, Volume 1, 1990, 473-490. Adapted from Congressional Research Service Report for Congress, "Health Benefits of Air Pollution Control: A Discussion", February 27, 1989.

31. John D. Graham and David R. Holtgrave, "Coke Oven Emissions: A Case Study of Technology- Based Regulation", Risk: Issues in Health and Safety, Volume 1, 1990, 243-272. Adapted from a Report to the U.S. Congressional Research Service Report, September 20, 1989.

32. John D. Graham, "Cancer Risk Estimation and Prevention" in Air Pollution and Human Cancer, ed., L. Tomatis, European Society of Oncology, Springer-Verlag, Berlin, 1990, 75-84.

33.* William N. Evans and John D. Graham, "An Estimate of the Lifesaving Benefit of Child Restraint Use Legislation", Journal of Health Economics, Volume 9, 1990, 121-142.

34. Carol S. Shepherd and John D. Graham, "The Economic Costs of Injuries to Truck Occupants", Report to the National Highway Traffic Safety Administration, Harvard Injury Control Center, April 1990.

35.* George M. Gray and John D. Graham, "Risk Assessment and Clean Air Policy", Journal of Policy Analysis and Management, Volume 10, 1991, 286-295.

36.* John D. Graham and David R. Holtgrave, "Predicting EPA's Forthcoming CO Standards in Light of New Clinical Evidence", Risk Analysis, Volume 11, 1991, 325-332.

37.* William N. Evans, Doreen Neville, and John D. Graham, "General Deterrence of Drunk Driving: Evaluation of Recent American Policies", Risk Analysis, Volume 11, No. 2, 1991, 279-289.

38.* William N. Evans and John D. Graham, "Risk Reduction or Risk Compensation? The Case of Mandatory Safety Belt Use Laws", Journal of Risk and Uncertainty, 1991, 61-73.

39. Robert W. Crandall and John D. Graham, "New Fuel Economy Standards?" The American Enterprise, Volume 2, March/April 1991, 68-69.

40.* John D. Graham, "Product Liability and Motor Vehicle Safety" in The Liability Maze: The Impact of Liability Law on Safety and Innovation, eds., P. W. Huber and R.E. Litan, Brookings Institution, Washington, D.C., 1991, 120-190.

41.* M.A. Ibrahim, G.G. Bond, T.A. Burke, P. Cole, F.N. Dost, P.E. Enterline, M. Gough, R.S. Greenberg, W.E. Halperin, E. McConnell, I.C. Munro, JA. Swenberg, SH. Zahm,

and J.D. Graham, "Weight of the Evidence on the Human Carcinogenicity of 2, 4-D", Environmental Health Perspectives, Volume 96, 1991, 213-222.

42. John D. Graham, "Improving Chemical Risk Assessment", Regulation, Fall 1991, 14-18.

43. John D. Graham and George M. Gray, "Air Toxics: Characterizing the Risks", Toxic Air Pollutants from Mobile Sources, Proceedings of a U.S. EPA/A & WMA International Specialty Conference, Air & Waste Management Association, Pittsburgh, PA, 1992, 43-52.

44.* John D. Graham, "The Safety Risks of Proposed Fuel Economy Legislation", Risk: Issues in Health and Safety, Volume 3, Spring 1992, 95-126.

45. Alon Rosenthal, George M. Gray, and John D. Graham, "Legislating Acceptable Cancer Risk from Exposure to Toxic Chemicals", Ecology Law Quarterly, Volume 19, No. 2, 1992, 269-362; reprinted in An Environmental Law Anthology, eds., Robert Fischman, Maxine Lipeles and Mark Squillace, Anderson Publishing Company, Cincinnati, Ohio, 1996, 391-413.

46. John S. Evans, John D. Graham, George M. Gray, Adrienne Hollis, Barry Ryan, Andrew Smith, and Alison Taylor, "Summary of Workshop to Review an OMB Report on Regulatory Risk Assessment and Management", Risk: Issues in Health and Safety, Volume 3, No. 1, Winter 1992, 71-83. Condensed from "OMB vs. the Agencies: The Future of Cancer Risk Assessment", Workshop to Peer Review the OMB Report on Risk Assessment and Risk Management, Harvard Center for Risk Analysis, June 1991.

47.* John D. Graham, Bei-Hung Chang, and John S. Evans, "Poorer is Riskier", Risk Analysis, Volume 12, No. 3, 1992, 333-337.

48.* John D. Graham, Katherine D. Walker, Maurice Berry, Elizabeth F. Bryan, Michael A. Callahan, Anna Fan, Brent Finley, Jeremiah Lynch, Thomas McKone, Haluk Ozkaynak, Ken Sexton, "Role of Exposure Databases in Risk Assessment", Archives of Environmental Health, Volume 47, No. 6, 1992, 408-420.

49. John D. Graham, "A Public Health View of Environmental Regulation", Maine Policy Review, Volume 1, No. 2, 1992, 34-38.

50.* William N. Evans, John D. Graham, and Doreen Neville, "Toward Humility in Statistical Interpretation", Risk Analysis, Volume 13, No. 1, 1993, 21-22.

51.* John D. Graham, "Injuries from Traffic Crashes: Meeting the Challenge", Annual Review of Public Health, Volume 14, 1993, 515-543.

52.* Bei-Hung Chang and John D. Graham, "A New Method for Making Interstate Comparisons of Highway Fatality Rates", Accident Analysis and Prevention, Volume 25, No. 1, 1993, 85-90.

53. George M. Gray, Joshua T. Cohen, and John D. Graham, "The Challenge of Risk Characterization: Current Practice and Future Directions", Environmental Health Perspectives Supplements, Volume 101 (Suppl. 6), 1993, 203-208.

54. John D. Graham, "An Economic Perspective on Air Bag Regulation for Canada", Chronic Diseases in Canada, Volume 14, No. 4 (Suppl.) 1993, sl25-sl28.

55. John D. Graham, "The Economics of Controlling Outdoor and Indoor Air Pollution" in Indoor and Outdoor Air Pollution and Human Cancer, ed., U. Veronesi, European School of Oncology, Springer-Verlag, Berlin, 1993, 149-162.

56. Susan W. Putnam and John D. Graham, "Chemicals vs. Microbials in Drinking Water: A Decision Sciences Perspective", Journal of the American Water Works Association, Volume 85, 1993, 57-61.

57. John D. Graham, "Incorporating Scientific Judgment into Quantitative Risk Assessment", The Toxicology Forum, Winter 1993, 51-62.

58. George M. Gray and John D. Graham, "Intuitive Toxicology: Comments on Public Perceptions and the Role of Institutional Affiliation in Expert Opinions", Comments on Toxicology: A Journal of Critical Discussion on the Current Literature, Volume 4, 1993, 501-504.

59.* Susan W. Putnam and John D. Graham, "Formaldehyde Science: From the Laboratory to the Regulatory Arena" in Keeping Pace with Science and Engineering, ed., Myron F. Uman, National Academy Press, Washington, D.C., 1993, 189-220.

60. Jane Hoppin, P. Barry Ryan, and John D. Graham, Risk Assessment in the Federal Government: Questions and Answers, Harvard Center for Risk Analysis, Boston, MA, 1993.

61. John D. Graham, "The Fate of the Maximally Exposed Individual Under the 1990 Amendments to the Clean Air Act", a paper presented to the Committee on Risk Assessment Methodology, National Research Council, National Academy of Sciences, Washington, D.C., August 1993.

62. John D. Graham, "Making Sense of Risk", AG in Perspective, Volume 1, No. 1, September 1993.

63.* John Evans, John Graham, George Gray, and Robert Sielken, Jr., "A Distributional Approach to Characterizing Low-Dose Cancer Risk", Risk Analysis, Volume 14, No. 1, 1994, 25-34.

64.* Dana Gelb Safran, John D. Graham, and J. Scott Osberg, "Social Supports as a Determinant of Community-Based Care Utilization Among Rehabilitation Patients", Health Services Research, Volume 28, No. 6, 1994, 729-750.

65. Susan W. Putnam and John D. Graham, "Environmental Regulation", Essay in The Encyclopedia of the Environment, Boston: Houghton Mifflin Company, 1994, p. 224.

66. John D. Graham, "Synopsis of the BELLE Conference on Chemicals and Radiation" in Biological Effects of Low Level Exposures: Dose-Response Relationships, ed., E.J. Calabrese, Lewis Publishers, Ann Arbor, MI, 1994, 271-274.

67. John D. Graham and March Sadowitz, "Superfund Reform: Reducing Risk through Community Choice", Issues in Science and Technology, Summer, 1994, 35-40.

68. John D. Graham, "Hammers Don't Cut Wood: We Need Pollution Prevention and Comparative Risk Assessment" in Worst Things First? The Debate over Risk-Based National Environmental Priorities, eds., Adam M. Finkel and D. Golding, Johns Hopkins University Press, 1994, 229-236.

69.* John S. Evans, George M. Gray, Robert L. Sielken, Jr., Andrew E. Smith, Ciriaco Valdez Flores, and John D. Graham, "Use of Probabilistic Expert Judgment in Uncertainty Analysis of Carcinogenic Potency", Regulatory Toxicology and Pharmacology, Volume 20, 1994, 15-36.

70. John D. Graham, "The Risk Not Reduced", New York University Environmental Law Journal, Volume 3, No. 2, 1994, 382-404.

71.* Nancy E. Isaac, Bruce Kennedy, and John D. Graham, "Who's in the Car? Passengers as Potential Interveners in Alcohol-Involved Fatal Crashes", Accident Analysis and Prevention, Volume 27, No. 2, 1995, 159-165.

72. John D. Graham, "The Future of Risk Regulation" in Strategies for Improving Environmental Quality and Increasing Economic Growth, eds., Charles E. Walker, Mark A. Bloomfield, and Margo Thorning, Center for Policy Research, American Council for Capital Formation, Washington, D.C., 1995, 3-18. Reprinted in: John D. Graham, "The Future of Risk Regulation", Environmental Engineer, Volume 31, No. 2, 1995, 22-33.

73. Katherine D. Walker, March Sadowitz, and John D. Graham, "Confronting Superfund Mythology: The Case of Risk Assessment and Management" in Analyzing Superfund: Economics, Science, and Law, eds., Richard L. Revesz and Richard B. Stewart, Resources for the Future, Washington, D.C., 1995, 25-53. Originally presented at the New York

University School of Law Conference, Superfund Reauthorization: Theoretical and Empirical Issues, December 3, 1993.

74.* March Sadowitz and John D. Graham, "A Survey of Residual Cancer Risks Permitted by Health, Safety and Environmental Policy", Risk: Issues in Health, Safety and Environment, Winter 1995, 17-35.

75. John D. Graham, "Edging Toward Sanity in Regulatory Risk Reform", Issues in Science and Technology, Summer 1995, 61-66.

76.* Tammy O. Tengs, Miriam E. Adams, Joseph S. Pliskin, Dana Gelb Safran, Joanna Siegel, Milton C. Weinstein, and John D. Graham, "Five Hundred Life-Saving Interventions and Their Cost-Effectiveness", Risk Analysis, Volume 15, No. 3, 1995, 369-389.

77. John S. Evans , John D. Graham, and George M. Gray, "A Distributional Approach to Characterizing Low-Dose Cancer Risk" in Low-Dose Extrapolation of Cancer Risks: Issues and Perspectives, eds., Stephen Olin, William Farland, Colin Park, Lorenz Rhomberg, Robert Scheuplein, Thomas Starr, and James Wilson, ILSI Press, Washington, D.C., 1995, 253-274.

78. Harvard Group on Risk Management Reform, ed., John D. Graham, "Reform of Risk Regulation: Achieving More Protection at Less Cost", Human and Ecological Risk Assessment, Volume 1, No. 3, 1995, 183-206.

79. John D. Graham, "Historical Perspective on Risk Assessment in the Federal Government", Toxicology, Volume 102, 1995, 29-52.

80.* Evi J. Hatziandreu, Jeffrey J. Sacks, Ruth Brown, William R. Taylor, Mark L. Rosenberg, and John D. Graham, "The Cost Effectiveness of Three Programs to Increase Use of Bicycle Helmets Among Children", Public Health Reports, Volume 110, No. 3, 1995, 251-259.

81. John D. Graham, Comparing Opportunities to Reduce Health Risks: Toxin Control, Medicine and Injury Prevention, National Center for Policy Analysis, Washington, D.C., 1995.

82. John D. Graham and Richard R. Monson, "Benzene and Leukemia: Time for a Reassessment?" a report for the Western States Petroleum Association, Glendale, CA, 1995.

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Executive Courses

Course Director, Risk Analysis, Office of Continuing Education, Harvard School of Public Health (1991 to 2001).

Course Director, Risk Communication, Office of Continuing Education, Harvard School of Public Health (1995 to 2001).

Teaching Experience

Quantitative Policy Analysis, Graduate Level, Harvard School of Public Health, 1985 to 1990.

Methods of Cost-Benefit Analysis and Cost-Effectiveness Analysis for Health and Medicine, Graduate Level, 1991 to 2000.

Principles of Risk Analysis, Executive Education, Harvard School of Public Health, 1992 to 2000.
Principles of Risk Communication, Executive Education Harvard School of Public Health (Boston and Brussels), 1998 to 2000.

Introduction to Policy Analysis, Graduate Level, Pardee RAND Graduate School, 2006 to 2008.

Hazard Management in the U.S. and Europe, IU Overseas Study Course, Undergraduate Level (King's College – London), Indiana University, 2009 to 2014.

Case Studies in Policy Analysis, Undergraduate Level, Indiana University, 2012.

Introduction to National and International Policy, Undergraduate Level, Indiana University, 2013 to 2014.

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John D. Graham, "Think, Don't Leap on Health Hazards", Newsday, November 26, 1997, p. A48.

John D. Graham, "Sen. Collins Right on Need to Reform Federal Regulations", Portland Press Herald, April 28, 1998, p. 12.

John D. Graham, "Environmental Policy: Five Themes for the Future", Environmental Management, January 2000, pp. 36-37.

John D. Graham, "Fueling Opportunity", Washington Times, May 19, 2006.

John D. Graham, "Regulatory Reform on Both Sides of the Atlantic", Washingtonpost.com, August 15, 2006.

John D. Graham, "Steer a Smarter Course Than Specific Mileage Goals", Detroit Free Press, March 16, 2007.

John D. Graham, "Green But Unsafe", Wall Street Journal, Europe Edition, April 18, 2007.

John D. Graham and Laura Cavagnaro, Commentary: "Save Big 3 by Making Buyers See Green for Fuel-Sipping Cars", Detroit Free Press, March 11, 2009.

John D. Graham, "Obama's Auto Pitfalls", The Journal of the American Enterprise Institute, August 16, 2009.

John D. Graham, "President Obama Can Shore Up His Popularity by Pushing Immigration Reform", appeared in 33 different newspapers including Taiwan News//Taipei, May 1, 2010; Fresno Sunday Bee, May 2, 2010; Contra Costa Sunday Times, May 9, 2010.

John D. Graham, "Small Cars and Personal Responsibility", The New York Times, May 27, 2010.

John D. Graham, "Can Obama Learn from Bush's Domestic Playbook?" The Washington Post, Political Bookworm by Steven Levingston, May 14, 2010. *http://voices.washingtonpost.com/political-bookworm/2010/05/can_obama_learn_from_bushs_dom.html*

Denvil R. Duncan and John D. Graham, "Replacing the Gasoline Tax with a Road User Fee", The Ripon Forum, Vol. 47, No. 3, Summer 2013, p. 22.

Congressional and Administrative Testimony

John D. Graham, Testimony on "Clean Air Act Amendments of 1990", S.816: The Toxics Release Prevention Act of 1989, Subcommittee on Environmental Protection, Committee on Environment and Public Works, U. S. Senate, Washington, D.C., 101st Congress, Second Session, 1989.

John D. Graham, "Recommendations for Improving Cancer Risk Assessment", comments submitted to the National Academy of Sciences, California's Environmental Protection Agency and the U. S. Environmental Protection Agency, July 1, 1992.

John D. Graham, Testimony on S. 3373, "The Bullet, Death, and Family Dissolution Act", Subcommittee on Social Security and Family Policy, Finance Committee, U. S. Senate, Washington, D.C. 102nd Congress, Second Session, October 23, 1992.

John D. Graham, Comments submitted to Ms. Dorothy Strunk, OSHA, regarding Risk-Risk Analysis, October 23, 1992.

John D. Graham, Comments submitted to Mr. Orron Kee and Mr. Barry Felrice, NHTSA, regarding CAFÉ and Safety, January 4, 1993.

Susan Putnam, John D. Graham, George Gray, Sandy Baird, Katy Walker, and Kim Thompson, Comments on EPA's Integrated Risk Information System, submitted to the U. S. Environmental Protection Agency, April 15, 1993.

John D. Graham, Testimony on "Reform of the Delaney Clause", Subcommittee on Department Operations and Nutrition, Committee on Agriculture, U. S. House of Representatives, Washington, D.C., 103rd Congress, First Session, July 14, 1993.

John D. Graham, Testimony on "Reform of the Delaney Clause", Joint Hearing, House Subcommittee on Health and Environment and Senate Committee on Labor and Human Resources, Washington, D.C., 103rd Congress, First Session, September 21, 1993.

John D. Graham, Testimony on "The Role of Risk Analysis in Environmental Policy Making", Committee on Energy and Natural Resources, U. S. Senate, Washington, D.C., 103rd Congress, Second Session, November 9, 1993.

John D. Graham, Testimony on “The Role of Risk Assessment in Environmental Protection”, Subcommittee on Transportation and Hazardous Materials, Committee on Energy and Commerce, U. S. House of Representatives, Washington, D.C., 103rd Congress, Second Session, November 17, 1993.

John D. Graham, "The Role of Risk Analysis in Environmental Protection”, Subcommittee on Environment, Energy, and Natural Resources, Subcommittee on Legislation and National Security, Committee on Government Operations, U. S. House of Representatives, Washington, D.C., 103rd Congress, Second Session, February 1, 1994.

John D. Graham, Testimony on Title III, H.R. 9, "Risk Assessment and Cost-Benefit Analysis of New Regulations”, Committee on Science, U. S. House of Representatives, Washington, D.C., 104th Congress, First Session, January 31, 1995.

John D. Graham, Testimony on Title III, H.R. 9, "Risk Assessment and Cost-Benefit Analysis of New Regulations”, Committee on Commerce, U. S. House of Representatives, Washington, D.C., 104th Congress, First Session, February 2, 1995.

John D. Graham, Testimony on S. 291, "Regulatory Reform Act of 1995”, Governmental Affairs Committee, U. S. Senate, Washington, D.C., 104th Congress, First Session, February 15, 1995.

John D. Graham, Testimony on S. 123, S. 229, S. 333, and S. 343, "Impacts of Regulatory Reform on Environmental Law”, Committee on Environment and Public Works, U. S. Senate, Washington, D.C., 104th Congress, First Session, March 22, 1995.

John D. Graham, Statement to the National Transportation Safety Board, Supplemental Restraint Panel, Washington, D.C., March 17, 1997.

John D. Graham, Statement to the National Transportation Safety Board, Effectiveness Panel, Washington, D.C., March 19, 1997.

John D. Graham, Testimony on S. 981, "Regulatory Improvement Act of 1997, " Committee on Governmental Affairs, U. S. Senate, Washington, D.C., 105th Congress, First Session, September 12, 1997.

John D. Graham, Testimony on “The Role of Risk Science in Decision Making”, Committee on Science, U. S. House of Representatives, Washington, D.C., 105th Congress, June 10, 1998.

John D. Graham, Testimony on the “Regulatory Improvement Act of 1999” (S. 746), Committee on Governmental Affairs, U. S. Senate, Washington, D.C., April 21, 1999.

John D. Graham, Testimony on "Reauthorization of the Clean Air Act”, Committee on Governmental Affairs, U. S. Senate, Washington D.C., October 14, 1999.

John D. Graham, Testimony on “Biotechnology in the Year 2000 and Beyond”, U. S. Food and Drug Administration, Washington, D.C., November 30, 1999.

John D. Graham, Testimony on “Comparative Risk Assessment and Environmental Decision Making”, Committee on Environment and Public Works, U. S. Senate, July 27, 2000.

John D. Graham, Testimony on “Cost-Justifying Regulations: Protecting Jobs and the Economy by Presidential and Judicial Review of Costs and Benefits”, Subcommittee on Courts, Commercial and Administrative Law, House Judiciary Committee, U.S. Congress, May 4, 2011.

John D. Graham, Testimony on “How A Broken Process Leads to Flawed Regulations”, OMB-OIRA Oversight Hearing, Committee on Oversight and Government Reform, House of Representatives, United States Congress, September 14, 2011.

John D. Graham, Testimony on the “Office of Information and Regulatory Affairs: Federal Regulations and Regulatory Reform under the Obama Administration”, Committee on the Judiciary, House of Representatives, United States Congress, March 21, 2012.

John D. Graham, Testimony on “Regulatory Aspects of Trans-Atlantic Trade and Investment Partnership (TTIP)”, U.S.-EU Free Trade Agreement, Committee on Trade, European Parliament, Brussels, Belgium, October 14, 2013.

John D. Graham, Testimony on “Secret Science Reform Act of 2014”, Committee on Science, Space and Technology, Secret Science Reform Act of 2014, U.S. House of Representatives, Washington, D.C., February 11, 2014.

John D. Graham, Testimony on “The First Step to Cutting Red Tape: Better Analysis”, Joint Economic Committee, U.S. Congress, Washington, D.C., April 30, 2014.

John D. Graham, Testimony on “Examining Federal Rulemaking Challenges and Areas of Improvement Within the Existing Regulatory Process”, Subcommittee on Regulatory Affairs and Federal Management, Committee on Homeland Security and Governmental Affairs, United States Senate, Washington, D.C., March 19, 2015.

John D. Graham, Testimony on “Surface Transportation Reauthorization: Performance, not Prescription”, Subcommittee on Surface Transportation, Committee on Commerce, United States Senate, Washington, DC., March 24, 2015.

John D. Graham, Testimony on “A Regulatory Budget and the U.S. Economy, Committee” on the Budget, United States Senate, Washington, D.C., December 9, 2015.

Personal Facts

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Education: B.S. (Biology), Illinois Institute of Technology (IIT), 1973.
M.S. (Environmental Engineering), IIT, 1974.
Ph.D. (Environmental Engineering in Civil Engineering), University of Illinois, Urbana, Illinois, 1978.

Academic Appointments

2005-- :	Head, Department of Civil, Architectural and Environmental Engineering
2003–2005:	Interim Head, Department of Civil, Architectural and Environmental Engineering
2003--:	Research Professor, Department of Emergency Medicine, Drexel University College of Medicine
2002–:2005	Director of Environmental Engineering and member of Department Executive Committee
1991–: :	Betz Chair Professor of Environmental Engineering, Drexel University.
1989-1990:	Acting Chairman, Pritzker Department of Environmental Engineering, Illinois Institute of Technology
1988-1989:	Visiting Professor of Environmental Engineering, University of Illinois at Urbana-Champaign
1981-1990:	Assistant Professor (1981-83), Associate Professor (1983-87), Professor (1987-90) Illinois Institute of Technology
1978-1981:	Assistant Professor of Environmental Engineering in the Department of Chemical and Environmental Engineering, (1979-1981), Acting Director of Environmental Engineering Programs, Rensselaer Polytechnic Institute

Professional Memberships

American Chemical Society; American Association for the Advancement of Sciences; American Society for Engineering Education; American Statistical Association; American Society for Microbiology; American Water Works Association (Life Member); American Society of Civil Engineers; Association of Environmental Engineering and Science Professors; International Water Association; Sigma Xi; Society for Risk Analysis; Water Environment Federation; American Academy of Environmental Engineers

Honors and Awards

Recipient, 1984 AAAS-USEPA Summer Environmental Science and Engineering Fellowship.
Octave Chanute Award (Outstanding Paper), Western Society of Engineers, 1984.
Charles Ellet Award (Outstanding Young Engineer), Western Society of Engineers, 1985.
Listed in American Men and Women of Science (1994)
Listed in Who's Who in Science and Engineering (1996)
Listed in Who's Who in the East (1997)
Listed in Who's Who in Medicine and Healthcare (1997)
Listed in Who's Who in America, 51st edition (1996)
Listed in Who's Who in the World (2001)
Professional Research Award, Pennsylvania Water Environment Association (1997)
American Academy of Microbiology, Elected as Fellow (1997)
Frontiers in Research Award, Association of Environmental Engineering and Science Professors (sponsored by

Malcolm Pirnie, Inc) (2002).
American Association for the Advancement of Science, Elected as Fellow (2002)
Society for Risk Analysis, Elected as Fellow (2002)
University of Illinois at Urbana-Champaign, Department of Civil and Environmental Engineering, Distinguished Alumnus Award (2003)
International Ozone Association, Harvey M. Rosen Memorial Award (best paper in Ozone Science and Engineering for 2001-3) (2003).
National Academies (National Academy of Sciences, National Academy of Engineering, Institute of Medicine, National Research Council): designated as a lifetime National Associate (2004).
American Water Works Association, advisor to 2nd Place Academic Achievement Award Winner (Christopher Crockett—PhD dissertation) (2005).
American Water Works Association, Water Science and Research Division, best paper award ("Risk Assessment of Waterborne Coxsackievirus") (2005).
American Academy of Environmental Engineers, Board Certified Environmental Engineering Member (BCEEM), elected by eminence (2007)
American Society of Civil Engineers, elected Fellow (2010)
International Water Association, elected Fellow (2011)
Association of Environmental Engineering and Science Professors, elected Fellow (inaugural class) (2013)
Society for Risk Analysis, Distinguished Achievement Award (2016)
John Leal Award, American Water Works Association (2017)
Athalie Richardson Irvine Clarke Prize (administered by the National Water Research Institute) (2017)

Workshops & Continuing Education Attended

American Council on Education workshop for Department/Division Chairs and Deans, February 2006, San Diego.
Peter Seldin Workshop on Preparing a Leadership Portfolio, March 2007, Philadelphia.

Funded Research Projects

Co-principal Investigator "Hazardous Waste Processing and Disposal Practices–Best Technology." New York State Environmental Facilities Corporation (1979 for $25,000).
Co-principal Investigator "The Potential for the Application of Resource Recovery Practices in the Hazardous Waste Processing and Disposal Industry." New York State Environmental Facilities Corporation (1979 for $25,000).
Principal Investigator, "Microbiological Alterations in Water Quality in Distribution Systems and Granular Activated Carbon." U.S. Environmental Protection Agency (1980-2 for $113,000).
Principal Investigator, "Trace Metal Speciation". U.S. Environmental Protection Agency–Industrial Waste Elimination Research Center (1980-1982 for $113,000).
Co-principal Investigator "Evaluation of High-Performance Phosphorus Control POTW's in the Great Lakes Basin." U.S. Environmental Protection Agency (1981-1982 for $88,850).
Principal Investigator "Preparation of a Chapter on Chlorination-Dechlorination and Miscellaneous Halogens." U.S.Environmental Protection Agency via a subcontract from Oklahoma State University (1982-1985 for $82,000).
Principal Investigator "Metal Speciation and Separation." U.S. Environmental Protection Agency–Industrial Waste Elimination Research Center (1982-1983 for $119,000).
Principal Investigator "Wastewater Treatability Study." Modine Manufacturing Company (1982-1983 for $28,000).
Principal Investigator "Evaluation of Microbial Dynamics in the Calumet River and Downstream Waters." Metropolitan Sanitary District of Greater Chicago (1983-1985 for $22,800).
Co-principal Investigator, "Metal Speciation Kinetics." U.S.Environmental Protection Agency – Industrial Waste Elimination Research Center (1984 - 1988 for $500,000).
Principal Investigator, "Indefinite Delivery Contract for Research Support in Environmental Engineering" – US Army Corps of Engineers, Construction Engineering Research Laboratory (1985 - 1987, $1,900,000).
Co-Principal Investigator, "Characterization of Diffusion of Solutes Through Compacted Clays" – Milligan Venture Fund Grant (IIT – 1986-1987 for $10,000).
Principal Investigator, "Wastewater Treatability Study" – Morton Thiokol, Morton Chemical Division ($25,000 1986-1987).
Co-principal Investigator, "Waste to Energy Recovery of Refuse as an Alternative to Landfill in Illinois", Illinois Department of Energy and Natural Resources ($139,000, 1987- 1989).

Principal Investigator, “Effects of Changing Disinfection Practices on Receiving Water Quality”, Metropolitan Sanitary District of Greater Chicago ($97,000, 1987-1990).
Principal Investigator, “Beneficial Co-Utilization of Solvents and Plastic Scrap Wastes”, Illinois Hazardous Waste Research and Information Center ($6300, 1987).
Principal Investigator, “Disinfection of Microbial Biofilms”, American Water Works Service Co., ($30,400, 1987-8).
Principal Investigator, “Analysis of Giardia Disinfection Kinetics”, USEPA Office of Drinking Water ($15,000, 1987).
Co-Investigator, “Analysis of Performance of Superfund and SARA”, Coalition on Superfund, (1988-89, $250,000).
Principal Investigator, “Analysis of Proposed Sludge Regulations”, Metropolitan Water Reclamation District of Greater Chicago, (1989, $20,000).
Principal Investigator, “Equilibria of Mixed Metal Precipitates”, IWERC (USEPA) (1990, $55,000).
Principal Investigator, “Statistical Analysis of Waste Generation by Electroplaters and Metal Finishers”, Metropolitan Water Reclamation District of Greater Chicago, (1990, $9500).
Principal Investigator, “Analysis of Disinfection Survey Results”, American Water Works Association, (1990, $15,000).
Principal Investigator, “Development of Novel Models for Describing Multiple Toxicity Effects”, Air Force Office of Scientific Research, (1991-94, $173,925).
Principal Investigator, “Development and Validation of Rational Kinetic Approaches for Predicting Full-Scale Disinfection Performance”, American Water Works Association Research Foundation (1991-1994, $260,000).
Principal Investigator, “Analysis of Groundwater Disinfection Survey Results”, American Water Works Association (1991-2, $5000).
Co-Principal Investigator, “Microbial Risk Assessment”, American Water Works Association Research Foundation (1993-1995, subcontract from University of South Florida, $90,000).
Principal Investigator, “Review of Factors Affecting Metal Fate and Transport in Saline Waters”, Dupont Corporation (1992, $12,500).
Principal Investigator, “Effect of Level of Response on Toxicity of Mixtures”, Air Force Office of Scientific Research (AASERT Program) (1993-1994, $51,000).
Principal Investigator, “Review of Models for Chemical Fate and Transport”, Betz Laboratories Inc. (1993-94, $39,000)
Principal Investigator, “Disinfection of Water Mains”, American Water Works Association Research Foundation (1993-1996, $250,000).
Principal Investigator, “Monitoring for Giardia and Cryptosporidium”, Philadelphia Water Department (1994-95, $45,000).
Principal Investigator, “Models for Chemical Fate and Transport in Waste Treatment”, Betz Laboratories Inc. (1995, $45,000).
Principal Investigator, “Inactivation of Giardia by Ozone and Combined Chlorine”, Montgomery-Watson Americas (1995, $50,000).
Principal Investigator, “Risk Assessment from Sewage Discharges in Mamala Bay, HI”, Subcontract from University of Arizona (Mamala Bay Commission), 1995, $35,000.
Principal Investigator, “Risk Assessment of Heterotrophic Organisms in Point of Use Devices”, Subcontract from University of South Florida (Water Quality Association), 1995-1996, $15,000.
Principal Investigator, “Electroporation and Electroporation Aided Disinfection of Cryptosporidium and Giardia”, National Science Foundation, 1995-1998, $190,000.
Principal Investigator, “Estimation of Disinfection Efficiency of Philadelphia Water Department Plants for Protozoa”, Philadelphia Water Department, 1996-1997, $46,000.
Principal Investigator, “Review of Health, Environmental Effects, and Efficacy of Chlorination for Wastewater Disinfection and Cooling Water”, Chlorine Institute, Inc., 1996, $45,000.
Principal Investigator, “Development of Integrated Program for Chemical Fate and Transport in Waste Treatment”, Betz Laboratories Inc. (1996-1997, $45,000).
Co-Principal Investigator, “Literature Review on Cryptosporidium Removal in Water Treatment”, Chlorine Chemistry Council, 1996, $16,000 (with Gordon Finch).
Co-Principal Investigator, “Extension of Quantitative Microbial Risk Assessment Methods to Foodborne Pathogens”, International Life Sciences Institute, 1997-1998, $85,000 (with Joan Rose and Charles Gerba).
Principal Investigator, “Disinfection of Protozoa”, Philadelphia Water Department, 1997-8, $50,000.

Co-Principal Investigator, "Critical Review Of Existing Data On Physical And Chemical Removal Of Cryptosporidium In Drinking Water", AWWA Research Foundation, 1997-2000 (with Gordon Finch), $150,000.

Co-Principal Investigator, Update The AWWARF Report On Experimental Methodologies For The Determination Of Disinfection Effectiveness To Include Cryptosporidium Disinfection Protocols", 1997-8 (with Gordon Finch), $25,000.

Co-Investigator, "Protocol for Cryptosporidium Risk Communication to Drinking Water Utilities", AWWA Research Foundation, 1998-1999 (with Mitchell Small, Baruch Fischoff et al., total contract $195,843).

Co-Investigator, "Disinfection of Emerging Pathogens", AWWA Research Foundation, 1998-2000 (with J. Jacangelo, C.P. Gerba), $250,000.

Co-Investigator, "Microbial Benefits from Laundry Sanitizers", Procter & Gamble Company, 1998, $25,000.

Co-Principal Investigator, "Compilation and Kinetic Analysis of Data for Ozone Inactivation of Cryptosporidium", International Ozone Association, 1998-1999 (with G. Finch, J. Jacangelo), $23,000 (Drexel share).

Principal Investigator, "Is Disinfection a Function of Initial Microorganism Concentration?", AWWA Research Foundation, 1999-2001, $127,000.

Principal Investigator, "Survey on Drinking Water Disinfection", American Water Works Association, 1998-1999, $25,000.

Co-Investigator, "Synergistic Inactivation of Cryptosporidium Oocysts in Natural Waters", AWWA Research Foundation, 1999-2001 (with Gordon Finch, Mike Belosevic), $77,000 (Drexel share).

Principal Investigator, Peer Review of Class A Sludge Designation Petition, Metropolitan Water Reclamation District of Greater Chicago, 1999-2000, $20,000.

Principal Investigator, Assessment of EPA Pathogen Equivalency Committee, US EPA, 2000, $15,000.

Principal Investigator, "Use of Microbial Risk Modeling to Determine the Benefits of Topical Antimicrobial Products", Soap and Detergent Association, 2000-2002 (with Joan Rose and Charles Gerba), $163,000.

Principal Investigator, "Disinfection of Protozoa", Philadelphia Water Department, 2000-2001, $50,000

Principal Investigator, "Evaluation of the Analytical Capabilities, Today and Near Future, for the Monitoring of Drinking Water for Accidental or Intentional Contamination", Philadelphia Water Department, 2002-2003, $100,000.

Principal Investigator, "Building Biodecontamination: A Process Engineering Approach", National Science Foundation, 2003-2005, $99,500 (with B. Farouk).

Principal Investigator, "Workshop on Advancing the Quality of Water (AQWA)", National Science Foundation, 2003-2004, $99,000.

Principal Investigator, "Delaware Valley Water Source Tracking Effort (DeVaWaSTE)", Philadelphia Water Department, 2004-2011, $400,000.

Principal Investigator, "Analysis of Data on Microbial Persistence With Antimicrobial Hand Products", Soap and Detergent Association, 2004, $20,000.

Principal Investigator, "Activated Ozone for Water Disinfection", H2O3, Inc., 2004, $35,000.

Principal Investigator, "Assessment of Physical Scale Models for Development of Room Decontamination Design Criteria", funded via National Bioterrorism Civilian Medical Response Center (CIMERC), 2004-5, $55,000.

Principal Investigator, "Wastewater Disinfection Strategies for the Metropolitan Water Reclamation District of Greater Chicago", CTE Engineering, 2004-5, $75,000.

Principal Investigator, "Expert Review of EPA Recreational Water Criteria – Scientific Basis", Metropolitan Water Reclamation District of Greater Chicago, 2005, $22,500.

Co-Principal Investigator, "CLEANER Project Office", National Science Foundation, 2005-8, $250,000 (Drexel share), $3,000,000 total (lead institution: University of Illinois at Urbana-Champaign).

Co-Principal Investigator and Co-Director, "Center for Advancing Microbial Risk Assessment (CAMRA)", US EPA and US Department of Homeland Security (Cooperative Center of Excellence), 2005-2013, $2,200,000 (Drexel share), $10,000,000 total funding (lead institution: Michigan State University).

Principal Investigator, "The Drexel University GAANN Fellowship Program: Educating Renaissance Engineers", 2006-11 ($510,000).

Principal Investigator, "Risk Assessment from Wet Weather Flows", Philadelphia Water Department, 2007-2012, $1,500,000.

Principal Investigator, "Expert Assistance with UV Disinfection Design at Chicago North Side Water Reclamation Plant", 2012-13, $55,000.

Co-Principal Investigator, Development of a Risk Management Strategy for Legionella in Recycled Water Systems, WateReuse Foundation, 2013-5 (via subcontract from American Water), $50,000 (Drexel Share)

Principal Investigator, Application of the Bioluminescent Saltwater Assimilable Organic Carbon Test as a Tool for Identifying and Reducing Reverse-Osmosis Membrane Fouling in Desalination, WateReuse Foundation, 2012-14, $248,000

Principal Investigator, Development of a Metamodel for Wastewater Disinfection by Peracetic Acid, Peroxychem (formerly FMC Corporation), 2013-16, $100,000.

Principal Investigator, RAPID: Collaborative Research: Survival of Ebolavirus in the Water Environment: Surrogate Development and Disinfection Effectiveness, NSF, 2015-16, $40,000.

Principal Investigator, Water Environment Research Foundation, Evaluation of Risk to Wastewater Collection Operators from disposal of hospital wastewater from Ebola patients, $25,000, 2015-16

Publications & Presentations

Books and Other Major Works

1) Recovery, Recycle and Reuse of Industrial Waste, K. E. Noll, C.N. Haas, C. Schmidt and P. Kodukula, Lewis Publishers, Chelsea MI (1985).
2) Process Design Manual for Wastewater Disinfection, coauthored by C.N. Haas. US EPA Center For Environmental Research Information, Cincinnati (1986).
3) Experimental Methodologies for the Determination of Disinfection Effectiveness, C.N. Haas, J.C. Hornberger, U. Anmangandla, M. Heath and J. Jacangelo. AWWA Research Foundation and American Water Works Association, Denver CO (1993).
4) Hazardous and Industrial Waste Treatment, (1995) Prentice-Hall, C.N. Haas and R. Vamos.
5) Development and Validation of Rational Design Methods of Disinfection (1995), AWWA Research Foundation, C.N. Haas, J. Joffe, J.C. Hornberger, U. Anmangandla, M. Heath and J. Jacangelo.
6) Benefits and Risks of Wastewater Chlorination (1997), The Chlorine Institute Inc. (Washington DC), Pamphlet 157, 193 pages, C.N. Haas, A. Fazil and A. Khan.
7) Benefits and Risks of Cooling Water Chlorination (1997), The Chlorine Institute Inc. (Washington DC), Pamphlet 158, 188 pages, C.N. Haas, A. Fazil and A. Khan.
8) Integrated Disinfection Design Framework (1998), AWWA Research Foundation and American Water Works Association, Denver CO, W.D. Bellamy, G.R. Finch and C.N. Haas.
9) Development of Disinfection Guidelines for the Installation and Replacement of Water Mains, AWWA Research Foundation, Denver CO, C.N. Haas, R.B. Chitluru, M. Gupta, W.O. Pipes, and G.A. Burlingame. (1998)
10) Quantitative Microbial Risk Assessment, C.N. Haas, J.B. Rose and C.P. Gerba, John Wiley (NY) (1999). (translated into Japanese)
11) Methodologies for the Determination of Disinfection Effectiveness, AWWA Research Foundation, C.N. Haas and G.R. Finch, Denver CO (2001).
12) Data Review on the Physical/Chemical Removal of Cryptosporidium, AWWA Research Foundation, C.N. Haas, K. French, G.R. Finch and R.K. Guest, Denver CO (2001).
13) Inactivation of Waterborne Emerging Pathogens by Selected Disinfectants, AWWA Research Foundation, J.G. Jacangelo, N.L. Patania, R.R. Trussell, C.N. Haas and C. Gerba, Denver CO (2002).
14) Effect of Initial Microbial Concentration on Disinfection Efficiency, AWWA Research Foundation, C.N. Haas and B. Kaymak, Denver CO (2002).
15) Quantitative Microbial Risk Assessment, C.N. Haas, J.B. Rose and C.P. Gerba, John Wiley (NY) 2nd ed. (2014).

Peer Reviewed Publications

1) "Oxygen Uptake Rate as an Activated Sludge Control Parameter." Journal of the Water Pollution Control Federation, 51, 938-943 (1979), Charles N. Haas.
2) "Physiological Alterations of Vegetative Microorganisms Resulting From Aqueous Chlorination." Journal of the Water Pollution Control Federation, 52, 1976-1989 (1980), C.N. Haas and R.S. Engelbrecht.
3) "Chlorine Dynamics During Inactivation of Coliforms, Acid-Fast Bacteria and Yeasts." Water Research, 14, 1749-1757 (1980), C.N. Haas and R.S. Engelbrecht.
4) "A Mechanistic Kinetic Model for Chlorine Disinfection." Environmental Science and Technology, 14, 339-340 (1980), C.N. Haas.
5) "Application of Predator–Prey Models to Disinfection." Journal of the Water Pollution Control Federation, 53, 378-386 (1981), C.N. Haas.

6) "Rational Approaches in the Analysis of Chemical Disinfection Kinetics." Chapter in W. Cooper (ed.) Chemistry in Water Reuse. Vol. 1, pp. 381-399. Ann Arbor Science Publishers, Inc. (1981), C.N. Haas.
7) "Practical Mixed Culture Processes." Advances in Fermentation Processes, 4, 1-29 (1980), C.N. Haas, H.R. Bungay and M.L.Bungay.
8) "Biological Process Diffusional Limitations." Journal of the Environmental Engineering Division, ASCE, 107, 269-273 (1981), C.N. Haas.
9) "Repeated Exposure of Escherichia coli to Free Chlorine: Production of Strains Possessing Altered Sensitivity." Water, Air and Soil Pollution,16, 233-242 (1981), C.N. Haas and E.C. Morrison.
10) "Sodium Alterations of Chlorine Equilibria: Quantitative Description." Environmental Science and Technology, 15, 1243-1244 (1981), C.N. Haas.
11) "Evaluation of the m-SPC Method as a Substitute for the Standard Plate Count in Water Microbiology." Journal of the American Water Works Association, 74, 322 (1982), C.N. Haas, M.A. Meyer and M.S. Paller.
12) "Enhancement of Chlorine Inactivation of E. coli by Sodium Ions." Water Chlorination Environmental Impact and Health Effects, volume 4, book 2, pp1087-96, edited by R.L. Jolley, Ann Arbor Science (1983), C.N. Haas and M. Zapkin.
13) "The Ecology of Acid-Fast Organisms in Water Supply, Treatment and Distribution Systems." Journal of the American Water Works Association, 75, 139-44 (1983), C.N. Haas, M.A. Meyer and M.S. Paller.
14) "Estimation of Risk Due to Low Doses of Microorganisms: A Comparison of Alternative Methodologies." American Journal of Epidemiology, 118,573-82 (1983), C.N. Haas.
15) "The Utility of Endotoxins as a Surrogate Indicator in Potable Water Microbiology." Water Research, 17, 803-7 (1983), C.N. Haas, M.A. Meyer,M.S. Paller and M.A. Zapkin.
16) "Effect of Effluent Disinfection on Risks of Viral Disease Transmission via Recreational Exposure." Journal of the Water Pollution Control Federation. 55, 1111-6 (1983), C.N. Haas.
17) "Engineering at the Microorganism Scale." Advances In Fermentation Processes, 6, 149-73 (1983), H.R. Bungay, M.L. Bungay and C.N. Haas.
18) "Microbial Dynamics in GAC Filtration of Potable Water." ASCE Journal of Environmental Engineering, 109, 956-61 (1983), C.N. Haas, M.A. Meyer and M.S. Paller.
19) "Application of Ion Exchangers to Recovery of Metal from Semiconductor Wastes." Reactive Polymers, 2, 61-70 (1984), C.N. Haas and V. Tare.
20) "Microbial Alterations in Water Distribution Systems and Their Relationship to Physical-Chemical Characteristics." Journal of the American Water Works Association, 75, 475-481 (1983), C.N. Haas, M.A. Meyer and Marc S. Paller.
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Presentations

1) "Amino Acids, Aquatic Bacteria and Diatoms: Possible Methods of Interaction." Presented at the 67th Annual Meeting of the Illinois State Academy of Sciences, Springfield, May, 1974.
2) "Physiological Alterations of Vegetative Microorganisms Resulting from Aqueous Chlorination," presented at the Research Symposium during the 51st annual meeting of the Water Pollution Control Federation, Houston, October,1978.
3) "Physiological Basis for Chlorination," presented at a seminar of the Department of Civil Engineering, Syracuse University, November, 1978.
4) "Mechanistic Aspects of Disinfection Kinetics," presented at a seminar of the Department of Biomedical Engineering, Rensselaer Polytechnic Institute, Troy, NY, April, 1979.
5) "Mode of Microbial Inactivation by Chlorine", presented at the National Conference on Environmental Engineering, American Society of Civil Engineers, San Francisco, July, 1979.
6) "Rational Analysis of Ultraviolet Disinfection Kinetics," presented at the National Conference on Environmental Engineering, American Society of Civil Engineers, San Francisco, July, 1979.

7) "Rational Analysis of Microbial Regrowth." Presented at the 178thNational Meeting of the American Chemical Society, Division of Environmental Chemistry, Washington, DC, September, 1979.
8) "A Quantitative Model of Post-Disinfection Microbial Dynamics." Presented at the Research Symposium during the 52nd Annual Meeting of the Water Pollution Control Federation, Anaheim, October, 1979.
9) "Rational Approaches in the Analysis of Chemical Disinfection Kinetics," Presented at the 179th National Meeting of the American Chemical Society, Division of Environmental Chemistry, Symposium on Chemistry and Chemical Analysis of Water/Wastewater Intended for Reuse, Houston, March, 1980.
10) "Repeated Exposure of E. coli to Free Chlorine: Production of Strains With Differential Resistance," Presented at the 80th Annual Meeting of the American Society of Microbiology, Miami, May, 1980.
11) "Acid-Fast Bacteria and Yeast as Indicators of Disinfection Efficiency." Invited Presentation before the Interstate Seafood Seminar, Ocean City, MD, October, 1980.
12) "Theory of Alternate Disinfectants." Invited presentation at the Seminar on Current Topics in Water Supply, New York State Section of the American Water Works Association, Ossining, NY, November, 1980.
13) "The Practical Importance of Understanding Disinfection Mechanisms." Presented at the 81st Annual Meeting of the American Society for Microbiology, Dallas, March, 1981.
14) "Effects of Various Additions on the Inactivation of E. coli by Chlorine. Presented at the 81st Annual Meeting of the American Society for Microbiology, Dallas, March, 1981.
15) "Statistical Analysis of New York State Department of Environmental Conservation Lake George Bacteriological Sampling Data." Presented at the 1st Symposium of the Lake George Research Group, Lake George, NY, April, 1981.
16) "Enhancement of Chlorine Inactivation of E. coli by Sodium Ions." Presented at the 4th Water Chlorination Conference, Monterey, CA, October, 1981.
17) "Practical Considerations in the Use of Halogen Disinfectants." Invited Presentation to the Second National Symposium on Municipal Wastewater Disinfection, sponsored by the U.S. EPA, Orlando, FL, January,1982.
18) "Application of Ion Exchange to Recovery of Metals from Semiconductor Wastes." Presented at the NATO Advanced Studies Institute on Mass Transfer and Kinetics of Ion Exchange, Maratea, Italy, June, 1982.
19) "Estimation of Recreational Disease Risk due to Disinfection: Illinois–A Case Study." Presented at the 55th Annual Conference of the Water Pollution Control Federation, St. Louis, October, 1982.
20) Seminars presented during a visit to the Italian National Research Council, Water Research Institute, Bari, Italy, June, 1982:
    "Rational Analysis of Chlorination Kinetics."
    "Use of Computer Equilibrium Models for Assessment of Industrial Waste Chemistry."
    "Novel Precipitation processes for Metal Recovery from Semiconductor Wastes."
    "Application of Ion Exchange to Recovery of Metals from Semiconductor Wastes."
    "Solid Phase Differential Reactor Studies on Adsorption in Air and Water."
21) Seminar presented to the Italian National Research Council, Water Research Institute, Rome, Italy, June 1982:
    "Metal Removal and Recovery Processes: Experimental Results and Equilibrium Calculations."
22) "Relating Microbial Changes in Water distribution to Physical-Chemical Water Quality." Presented at the 74th Annual Conference, Illinois Section, American Water Works Association, Chicago, March 1983.
23) "Direct Differential Reactor Studies of Adsorption from Liquid and Gaseous Solutions." Presented at the Engineering Foundation Conference on Fundamentals of Adsorption, Upper Bavaria, West Germany, May, 1983.
24) "Water and Wastewater Disinfection." Seminar presented at IBM Corp., East Fishkill, NY, June 1983.
25) "Kinetic Limitations on the Recovery of Metals From Wastewater by Precipitation." Presented at the American Institute of Chemical Engineers National Meeting, Denver, August 1983.
26) "Microbial Risk Assessment." Invited Presentation at the Water Pollution Control Federation, Preconference Workshop on Wastewater Disinfection Alternatives, Atlanta, October, 1983.
27) "Engineering Waterborne Disease Reduction: How Much Is Enough?" Speech before the Western Society of Engineers, Chicago, November, 1983.
28) "Is Wastewater Disinfection Necessary?" Presentation to the Illinois Association of Environmental Professionals, April 1984.
29) "Sensitivity of Vegetative Protozoa to Free and Combined Chlorine." Presented at the 5th Conference on Water Chlorination: Environmental Impact and Health Effects, Williamsburg, VA, June, 1984.
30) "Influence of Sodium Potassium an Lithium on Hypochlorite Solution Equilibria." Presented at the 5th Conference on Water Chlorination: Environmental Impact and Health Effects, Williamsburg, VA, June, 1984.

31) "Scientific Principles of Disinfection" and "Need Assessments for Disinfection." Presented at the University of Wisconsin-Milwaukee Engineering Extension Program on Disinfection of Water and Wastewater, May,1984.
32) "An Engineers View of Economic Incentives for Hazardous Waste Management." Seminar presented to the Institute of Environmental Studies, Drexel University, Philadelphia, August 1984.
33) "Effect of Cessation of Chlorination on Receiving Water Microbiology." Presented at a seminar of the Research and Development Department, Metropolitan Sanitary District of Greater Chicago, October 1984.
34) "Hazardous Waste Management Challenges." Invited plenary presentation to the Annual Meeting of the Illinois Public Health Association, Peoria, April, 1985.
35) "Steps Towards a Rational Kinetic Model of Wastewater Chlorination", seminar presentation, Department of Civil and Sanitary Engineering, Michigan State University, April, 1985.
36) Presentation on potential risk avoidance due to earlier intervention in a Salmonella outbreak before the Illinois House of Representatives Committee on State Government Administration and Regulatory Reform June, 1985.
37) "Development of Acid Fast and Yeast Organisms as New Indicators of Disinfection Efficiency", seminar presented to the Department of Microbiology and Immunology, University of Arizona, Tucson, August, 1985.
38) "Is Wastewater Disinfection Worth the Cost?", seminar to the School of Civil Engineering, Purdue University, March 1986.
39) "Recovery, Recycle and Reuse of Industrial Wastes", Presented at a program on Wastewater Pretreatment and Toxicity Control, University of Wisconsin Extension at Milwaukee, March, 1986.
40) "Chlorine Residual", presented at the WPCF Conference on Analytical Techniques in Pollution Control, Denver, May 1986.
41) "On the Poisson Assumption for Analysis of MPN Results", presented at the American Water Works Association Annual Meeting, Denver, June, 1986.
42) "Kinetics of Cadmium and Copper Hydrolysis", International Association on Water Pollution Research and Control, Biennial Conference, Rio de Janeiro, Brazil, August, 1986.
43) "Wastewater Disinfection: Concepts and Practices", R.S. Engelbrecht and C.N. Haas, invited paper, Second Joint Seminar on Wastewater Treatment Technology, Japan Sewage Works Association/Water Pollution Control Federation, Hiroshima City, Japan, November, 1986.
44) "Relationship Between Disinfection Mechanism and Disinfection Kinetics", invited paper, Seminar on Water and Wastewater Disinfection, American Society of Microbiology Annual Meeting, Atlanta, GA, March 1987.
45) "Disinfection Methods and Regulatory Changes", invited presentation to the Illinois Association of Water Pollution Control Operators, Springfield, IL, April, 1987.
46) "Further Studies on Hypochlorite Ion Pair Chemistry and Disinfection Efficiency", 6th Water Chlorination Conference, Oak Ridge TN, May, 1987.
47) "Inherent Experimental Variability", invited presentation at the American Water Works Association pre-conference seminar on "Assurance of Adequate Disinfection: ct or not ct", Kansas City, June, 1987.
48) "Wastewater Chlorination and Dechlorination", invited presentation to the Michigan Section, American Water Works Association, Ann Arbor, February 1988.
49) Invited presentations before a seminar sponsored by the Michigan Water Pollution Control Association on Wastewater Disinfection: Public Health Related Issues: "Effect of Effluent Disinfection on Risks of Viral Disease Transmission via Recreational Water Exposure" and "Water Pollution Control Federation Disinfection Committee: Report Status", Ann Arbor, May 1988.
50) Invited speaker "Comparative Aspects of Solid Waste Management", seminar on "Recycling and Solid Waste Disposal" sponsored by the University of Illinois, Rockford, June 1988.
51) "Statistics of Microbial Disinfection", International Association on Water Pollution Research and Control Biennial Meeting, Brighton, UK, July 1988.
52) "Maximum Likelihood Analysis of Giardia Disinfection by Chlorine", First Biennial Water Quality Symposium: Microbiological Aspects, Banff, Alberta, August 1988.
53) "Maximum Likelihood Analysis of Disinfection Kinetics", seminar to the Environmental Engineering Program, Department of Civil Engineering, University of Illinois at Urbana-Champaign, February 1989.
54) "Multicomponent Interactions In Environmental Engineering", seminar to the Institute of Environmental Studies, Drexel University, April 1989.
55) "Chlorination/Dechlorination for New Disinfection Criteria", invited presentation at the Water Pollution Control Federation preconference workshop, San Francisco, October 1989.
56) "Fundamental Considerations in Development of Solvent Dissolution Processes for Plastics", presented at the 6th International Conference on Solid Waste Management and Secondary Materials", Philadelphia, December 1990.

57) "Failure of Chick's Law in Batch to CSTR Extrapolation of Chlorine Disinfection of Escherichia coli", presented at the Annual Conference of the American Water Works Association, Philadelphia, June, 1991.
58) "Occurrence of Pathogens and their Associated Risk", invited paper, Regulating Drinking Water in the 1990's, sponsored by the Northeast Regional Environmental Public Health Center, April, 1991, Amherst MA.
59) "Status of Chlorammination", invited paper, Preconference Seminar on Water Quality Effects of Chlorammination, AWWA Annual Meeting, June 1991, Philadelphia, PA.
60) "Binary and Ternary Equilibria of Ion Exchange", 46th Purdue Industrial Waste Conference, May 1991, West Lafayette IN.
61) "Equilibrium of Mixed Solid Phases", 46th Purdue Industrial Waste Conference, May 1991, West Lafayette IN.
62) "Biological Sulfide Prestripping for Metal and COD Removal", Annual Conference of the Water Pollution Control Federation, October 1991, Toronto, Canada.
63) "Comparative Performance of Interval Estimators for Virtually Safe Dose", Annual Meeting of the Society for Risk Analysis, December 1991, Baltimore.
64) "Nonideal Interactions in Metal Separations in Environmental Engineering", seminar to the Department of Chemical Engineering, Drexel University, January 27, 1992.
65) "Risk Assessment of Infectious Disease from Waterborne Exposures", seminar to the Department of Bioscience and Biotechnology, Drexel University, April 2, 1992.
66) "New Approaches for the Analysis of Mixture Toxicity Data", presented at the 16th Biennial Conference of the International Association on Water Pollution Research and Control, Washington D.C., May 1992.
67) "Occurrence of Microorganisms", invited presentation to the Netherlands Public Health Institute, Bilthoven, June 1992.
68) "Microbial Risk Assessment", invited presentation to the Netherlands Public Health Institute, Bilthoven, June 1992.
69) "Quantifying Microbial Risk", invited presentation at the First International Conference on the Safety of Water Disinfection: Balancing Chemical and Microbial Risks, Washington D.C., August 1992.
70) "Trends in Environmental Protection", invited presentation at the 6th environmental affairs conference, Betz Laboratories Inc., Trevose PA, September 1992.
71) "Microbial Risk Assessment for Drinking Water", poster by C.P. Gerba, Joan Rose and C.N. Haas, Society for Risk Analysis Annual Conference, San Diego CA, December 1992.
72) "The Risk of Illness from Drinking Water", seminar to the Department of Civil and Architectural Engineering and the Environmental Studies Institute, Drexel University, January 1993.
73) "Microbial Risk Assessment of Drinking Water", seminar to the Department of Environmental and Occupational Health and the Department of Civil Engineering and Mechanics, University of South Florida, Tampa, March 1993.
74) "Testing for the Presence of Interactive Toxic Effects: A New Quantitative Procedure Based on Isobole Analysis", presented at the Eastern North America Regional (ENAR) Meeting of the Biometric Society/American Statistical Association/ Institute of Mathematical Statistics, Philadelphia, PA, March 1993, with Bruce A. Stirling.
75) "Nonideal Interactions in Metal Separation Processes", seminar to the Department of Civil Engineering, University of Delaware, March 1993.
76) "The Effect of Free Chlorine, Preformed Monochloramine, Chlorine+ Preammoniation and Ozone on Giardia muris Cyst Viability", presented at the Annual Conference of the Pennsylvania Section of AWWA, April 1993, with Joel Hornberger, Uma Anmangandla and Josh Joffe.
77) "The Necessity for Wastewater Disinfection", invited presentation at the American Society for Microbiology conference on "Water Quality in the Western Hemisphere", San Juan PR, April 1993.
78) "Modeling the Risk of
", D.E. Friedman, C.N. Haas and J.B. Rose, poster presentation at the American Society for Microbiology conference on "Water Quality in the Western Hemisphere", San Juan PR, April 1993.
79) "What We Think We Know and What We Think We Don't Know About Chlorination and Dechlorination", presented at the Water Environment Federation Specialty Conference on Wastewater Disinfection, May 1993, Whippany NJ.
80) "Pathogen Risks and Treatment Options", presented at the AWWA Preconference Seminar on Groundwater Disinfection, San Antonio, Texas, June 1993.
81) "Monte Carlo Methods in Risk Assessment", seminar presented at Roy F. Weston Co., West Chester PA, June 1993.

82) "Application of Risk Assessment to Standard Setting for Closed Life Support Systems", C.P. Gerba, C.N. Haas and J.B. Rose, presented at the 23rd International Conference on Environmental Systems, Colorado Springs, CO, July 1993.
83) "Verification of a Mechanistic Kinetic Model for Chloroform Formation from a Model Precursor During Water Chlorination", C.N. Haas and K. Topudurti, presented at the National Meeting of the American Chemical Society, Chicago IL, August 1993.
84) Invited discussion, "Health Effects of Water Reuse", presented at the Water Environment Research Foundation Assessment Workshop on "Water Reuse Assessment", WEF Annual Conference, Anaheim CA, October 1993, C.N. Haas.
85) "Simplified Method for Microscopic Determination of Giardia Disinfection Efficiency", C.N. Haas, J.C. Hornberger, U. Anmangandla and J. Joffe, AWWA Water Quality Technology Conference, Miami FL, November 1993.
86) "Bench to Pilot Scale Up: Impact on Microbial Inactivation", Mark S. Heath, Joseph G. Jacangelo and C.N. Haas, AWWA Water Quality Technology Conference, Miami FL, November 1993.
87) "Microbiological Issues", invited presentation to the US EPA Federal-State Toxicology and Risk Assessment Committee, Washington DC, December 1993.
88) Invited presentations to faculty and administration at University of Texas-El Paso: "Environmental Science and Engineering at Drexel University" and "Future Trends in Environmental Protection", November 1993.
89) "Estimating Risk from Waterborne Microorganisms", presented at the Annual Meeting of the Society for Risk Analysis, Savannah GA, December 1993.
90) "Microbial Risk Assessment", seminar presented to the USDA, Agricultural Research Service, Eastern Regional Research Center, Philadelphia, February 1994.
91) "Waterborne Microbial Diseases", invited presentation to AWWA – USEPA Workshop on Information Collection Rule, Washington DC, March 1994.
92) "Relevance of UIUC Disinfection Research to Current Problems", invited presentation, UIUC-CERL Symposium on Molecular Biology in Environmental Engineering, in Honor of Richard S. Engelbrecht, Champaign-Urbana IL, March 1994.
93) "Can Chlorine be Eliminated from Water Treatment?", invited seminar, MIT Program in Technology and Public Policy, May 1994.
94) "Reconciliation of Microbial Risk Assessment and Epidemiology: The Case of the Milwaukee Outbreak", AWWA Annual Conference, June 1994, New York City.
95) "The Risk of Infectious Disease from Drinking Water", seminar to the Department of Civil and Environmental Engineering, Rensselaer Polytechnic Institute, July 1994.
96) "The Relationship Between Endemic and Epidemic Disease Risk", presented at the biennial meeting of the International Association on Water Quality, Budapest Hungary, July 1994.
97) "Application of Reaction Engineering Approaches to Disinfection Process Design", seminar to the Department of Civil Engineering, University of Illinois at Urbana-Champaign, August 1994.
98) "Some Observations on Cryptosporidium Risk", invited presentation, "Water for Healthy Living: A Workshop on Public Decisions about Cryptosporidium", sponsored by AWWA, Washington DC, September 1994.
99) "Dose-Response Relationships and Community Risk", invited presentation, "Symposium on Waterborne Cryptosporidium", sponsored by the Centers for Disease Control and Prevention, Atlanta GA, September 1994.
100) "Cryptosporidium in Water: What is the Problem?", presented at the Pennjerdel Water Supply Committee meeting, Philadelphia, October 1994.
101) "Waterborne Diseases: Who is at Risk", presented at the AWWA Water Quality Technology Conference, San Francisco CA, November 1994, CP Gerba, JB Rose and CN Haas.
102) "Chlorine Ban Proposals from the Viewpoint of Water and Wastewater Treatment", invited presentation, Symposium on the Future Uses of Chlorine: The Role of the University, Massachusetts Institute of Technology, November 1994.
103) "Application of Reaction Engineering Approaches to Disinfection Process Design", seminar to Texas A&M University, Department of Civil and Ocean Engineering, August 1995.
104) "Statistical Analysis of Microbial Data", presented to the AWWA Technical Action Workgroup on Disinfection and Microbials, Washington DC, September 1995.
105) "Understanding the Behavior of Giardia and Cryptosporidium in an Urban Watershed: Explanation and Application of Techniques to Collect and Evaluate Monitoring Data", presented at the AWWA Water Quality Technology Conference, New Orleans, November 1995. CS Crockett and CN Haas.

106) "Generalized Independence And Additivity: Two Approaches To Quantitatively Describing Non-Ideal Toxic Behavior Of Chemical Mixtures", presented at the Society for Risk Analysis Annual Meeting, Honolulu, December 1995, CN Haas, S. Kersten, K. Cidambi and MJ Frank.
107) "Quantitative Microbial Risk Assessment: Review of Principles and Application to Recreational Settings", seminar to the University of Hawaii Water Resources Institute, December 1995.
108) "Principles of Microbial Risk Analysis", presented to the US Department of Agriculture, Office of Risk Assessment and Cost-Benefit Analysis, April 10, 1996.
109) "Dose Response Assessment for Infectious Microorganisms", invited presentation, Annual Meeting – American Society for Microbiology, New Orleans, May 23, 1996.
110) "Risk of Chemical Mixtures: Novel Methods", seminar to Procter and Gamble Co., Cincinnati OH, November 12, 1996 (with audio feed to P&G Europe).
111) "Novel Quantitative Approaches for Chemical Mixtures", seminar to Department of Environmental Systems Engineering, Clemson University, April 4, 1997.
112) "The Role of Risk Assessment in Setting US Drinking Water Standards". Nishihara Invited Lecture delivered to:
    Hokkaido University (Japan) – Environmental Engineering program
    Tokyo University – Department of Urban and Environmental Engineering
    Nishihara Sanitation Company
    Nihon University – Department of Civil Engineering
    Japan Ministry of Health – Membrane 21 Conference
    September 1-15, 1997.
113) "What we Think We Know and What We Think We Don't Know about Chlorination-Dechlorination", presented at the preconference workshop on Disinfection, Water Environment Federation Technical Conference, October 18, 1997, Chicago.
114) "Risk of HIV to Wastewater Operators". Presentation at the 70th Annual Water Environment Federation Technical Conference, October 23, 1997, Chicago.
115) "Correlations and Copulas in Monte Carlo Analysis". Platform-Poster at the Annual Meeting of the Society for Risk Analysis, Washington DC, December 10, 1997.
116) "Risk Assessment for Household Sanitation", seminar to Procter and Gamble Co., Cincinnati OH, February 19, 1998.
117) "Risk Based Criteria for Pathogens in Drinking Water: Has the Time Come?", Seminar to the Department of Civil and Environmental Engineering, University of Delaware, March 27, 1998.
118) "Back to the Future: Engineering Safe Water and Safe Food in the 21st Century", Invited Lecture, Villanova University Chapter of Sigma Xi, April 3, 1998.
119) "Benefits of Employing a Disinfectant Residual", invited presentation at the AWWA/IWSA Conference on Disinfectant Residuals, April 26, 1998, Philadelphia PA. Also presented in Mulheim, Germany, October 2, 1998.
120) "Predicting Disinfection Performance In Continuous Flow Systems From Batch Disinfection Kinetics", presented at the biennial Conference of the International Association on Water Quality, June 1998, Vancouver BC (Canada).
121) "Frameworks for Assessing Reliability of Multiple, Independent Barriers in Potable Water Reuse", presented at the biennial Conference of the International Association on Water Quality, June 1998, Vancouver BC (Canada).
122) "A Quantitative Risk Assessment Model For Listeria monocytogenes And E. coli O157:H7", presented at the International Association of Milk, Food and Environmental Sanitarians, Nashville TN, August 1998/
123) "Epidemiology, Microbiology and Risk Assessment of Waterborne Pathogens Including Cryptosporidium", invited presentation – Conference on the National Food Safety Initiative: Implications for Microbial Data Collection, Analysis and Application, Arlington VA, October 15, 1998.
124) "What Is Disinfection?", presented at AWWA Preconference Workshop, November 1, 1998, San Diego CA.
125) "Risk Based Criteria for Pathogens in Drinking Water: Has the Time Come?", seminar to Department of Civil Engineering, San Diego State University, December 2, 1998, San Diego CA.
126) "Predicting Disinfection Performance in Continuous Flow Systems from Batch Disinfection Kinetics", seminar to the Department of Environmental Science and Engineering, University of North Carolina at Chapel Hill, November 11, 1998.
127) "Back to the Future: Engineering Safe Water and Safe Food in the 21st Century", presented to the Philadelphia Chapter of the Society for Risk Analysis, March 23, 1999.

128) “The Future of Drinking Water Science [and Engineering]”. Invited presentation – EPA/AWWA Conference on Drinking Water: 2025. June 14, 1999, Washington DC.
129) “Watershed Management for Pathogen Control”. Invited presentation – New York State Energy Research and Development Agency Conference on Management of Small Reservoirs. June 16, 1999, Albany NY.
130) “Formulation and Validation of a Dose Response Model for Escherichia coli O157:H7”, presented at the International Symposium on Waterborne Pathogens, AWWA, Milwaukee WI, August 31, 1999.
131) “Inactivation of Legionella pneumophila by Free Chlorine”, presented at the International Symposium on Waterborne Pathogens, AWWA, Milwaukee WI, August 31, 1999.
132) “Predicting Disinfection Performance in Continuous Flow Systems from Batch Disinfection Kinetics”, seminar to the Department of Civil & Environmental Engineering, New Jersey Institute of Technology, September 22, 1999.
133) “Risk Based Criteria for Pathogens in Drinking Water: Has the Time Come?”, seminar to the Department of Civil and Environmental Engineering, Princeton University, October 20, 1999.
134) “Community Level Impacts of Waterborne Infections”, presented at the annual meeting of Society for Risk Analysis, Atlanta, December 7, 1999.
135) “Dermal Microbial Risk Assessment: Impact Of Germicidal Soap On Risk Of Infection From Staphylococcus aureus”, presented at the annual meeting of the Society for Risk Analysis, Atlanta, December 6, 1999.
136) “Microbes and Monte Carlo”, presented at the annual meeting of the American Association for Advancement of Science, Washington DC, February 22, 2000.
137) “Statistical Modeling in Drinking Water Production”, invited presentation, IWA Workshop of Modeling Conventional Drinking Water Treatment Processes, Mar 16, 2000, Delft, The Netherlands.
138) “Dose Response Models”, invited presentation, WHO-FAO Workshop on Microbial Risk Assessment, Utrecht, The Netherlands, June 13, 2000.
139) “Probabilistic Modeling of Drinking Water Treatment”, seminar to the Department of Civil and Environmental Engineering, Duke University, September 7, 2000.
140) “Microbial Risk Factors: How We Got Here and Alternative Futures”, invited presentation, AWWA Water Quality Technology Conference, Salt Lake City, November 7, 2000.
141) “Progress and Data Gaps in Quantitative Microbial Risk Assessment”, invited presentation at the 2001 Asian Water Quality Conference, Fukuoka, Japan, September 12, 2001.
142) “Progress and Data Gaps in Quantitative Microbial Risk Assessment”, invited presentation to the Department of Urban and Environmental Engineering, University of Tokyo, Japan, September 18, 2001.
143) “Decontamination Using Chlorine Dioxide”, Testimony before the US House of Representatives, Committee on Science, hearing on “The Decontamination of Anthrax and Other Biological Agents”, November 8, 2001, Washington DC.
144) “Bioterrorism 101”, Invited presentation, Lehigh University chapter of Sigma Xi, November 28, 2001.
145) “The Role of Risk Analysis in Understanding Bioterrorism”, invited plenary address, Society for Risk Analysis Annual Meeting, Seattle WA, December 3, 2001.
146) “The Risk of Inhalation Exposure to Anthrax Spores”, seminar to the School of Environmental Science, Engineering and Policy, Drexel University, February 15, 2002.
147) “Disinfection Modeling”, invited presentation, WEF Disinfection Specialty Conference, St. Petersburg FL, February 17, 2002.
148) “Microbial Dose-Response Models”, presented at a short course on microbial risk assessment offered by the University of Ottawa to personnel from Food Canada and Health Canada, March 1, 2002, Ottawa, Canada.
149) “Chemical and Biological Terrorism and Higher Education”, presented at a workshop organized by the Association of Independent Colleges and Universities of Pennsylvania, Harrisburg PA, March 7, 2002.
150) Invited Distinguished Public Health Scientist Lecture, “The Role of Risk Assessment in Responding to the Threat of Anthrax”, Johns Hopkins University, Bloomberg School of Public Health, Baltimore, May 16, 2002.
151) “Risk Assessment, Bioterrorism and the Food Industry”, invited presentation, First International Conference on Microbial Risk Assessment: Food, College Park MD, July 25, 2002.
152) “Quantitative Assessment Of Benefits From Using Topical Antimicrobial Hand Products: Case Study On E. coli Risk From Handling Raw Beef”, Society for Risk Analysis Annual Meeting, New Orleans, December 9, 2002.
153) “Towards a Fourth Generation in Water (Chemical) Disinfection Process Design”, seminar presented to the Department of Civil and Environmental Engineering, Tulane University, December 10, 2002.
154) “Risk Assessment, Bioterrorism and the Food Industry”, seminar to the Eastern Regional Research Center, USDA, Wyndmoor PA, January 10, 2003.

155) “Pathogens: Understanding Risks and Control”, invited presentation – Symposium on Drinking Water and Health, sponsored by Philadelphia Suburban Water and Drexel University, Philadelphia, March 25, 2003.
156) “Chemical and Biological Threats”, presented at a workshop on Community Infrastructure Protection, Pennoni Associates, March 26, April 2, April 30 and May 7, Wilmington DE, Mt. Laurel NJ, Harrisburg PA and Philadelphia (2003).
157) “How Much is Enough to Protect Public Health: Statistical and Sampling Size Considerations for Environmental Sampling”, invited presentation, Annual Meeting of the American Society for Microbiology, Washington DC, May 21, 2003.
158) “Overview of Risk Assessment Concepts and Methodologies”, invited presentation, Workshop on Quantifying The Health Risk from Water Recycling Schemes, Brisbane, Australia, September 3, 2003.
159) “Quantitative Microbial Risk Assessment and Uncertainty Analysis”, invited presentation, Workshop on Quantifying The Health Risk from Water Recycling Schemes, Brisbane, Australia, September 3, 2003.
160) “Numerical Investigation of the Effects of Reactor Configuration on the Efficacy of Microbial Inactivation”, presented at the WEF Annual Conference, October 2003, Los Angeles CA.
161) “Quantitative microbial risk assessment+20: victories, challenges and a look forward”, seminar to the Harvard Center for Risk Analysis, October 31, 2003, Boston MA.
162) “Risk Assessment”, presented at workshop on “Reclaimed Water: Whose Water is it?”, AWWA WQTC Conference, November 2, 2003, Philadelphia.
163) “Selection of an Appropriate Batch Inactivation Model – Why it Matters”, presented at the WQTC Conference, Philadelphia, November 2003.
164) “Arrivederci “Minimal Infectious Dose”: Have We Learned the Lesson Yet?:, presented at the 2003 Annual Meeting of the Society for Risk Analysis, Baltimore, December 7, 2003.
165) “Emission Rates of Biological Aerosols during the Land Application of Biosolids? Presented at the 2003 Annual Meeting of the Society for Risk Analysis, Baltimore, December 9, 2003.
166) “Disinfection 2020 (20/20)”, Seminar presented to the Department of Civil Engineering, Villanova University, March 18, 2004.
167) “Disinfection 2020 (20/20)”, Seminar presented to the Department of Civil and Environmental Engineering, University of Cincinnati, June 4, 2004.
168) “Quantitative Microbial Risk Assessment: An Introduction”, invited presentation, 5th Annual Environmental Health Conference of the Association of Schools of Public Health, July 12, 2004 , University of Minnesota.
169) “Quantitative microbial risk assessment+20: victories, challenges and a look forward”, seminar to the Department of Soil, Water and Environmental Science, University of Arizona, Tucson, October 25, 2004.
170) “Arrivederci “Minimal Infectious Dose”: Have We Learned the Lesson Yet?”, invited presentation – Workshop on Microbial Risk Assessment, US EPA – National Exposure Research Laboratory, Cincinnati OH, November 18, 2004.
171) “Reducing Waterborne Infectious Disease”, seminar presented to the Department of Environmental Health Science, University of Michigan School of Public Health, November 29, 2004.
172) “Chemical Terrorism Against Food and Water Supplies”, Symposium on Toxic Industrial Chemicals and Toxic Industrial Materials, sponsored by ATSDR and American Society for Medical Toxicology, Drexel University, June 13, 2005.
173) “Simulation of Anthrax Spore Transport and Inactivation in a Room: Scaling Analysis”, S Soni, B Farouk and CN Haas, Proceedings of the 2005 ASME International Mechanical Engineering Congress and Exposition, November 5-11, 2005 Orlando FL.
174) “Human and Animal Health Risks Associated With Biosolids”, C.N. Haas, presented at the annual meeting of the American Society for Microbiology, Orlando FL, May 23, 2006.
175) “Thresholds: (Lack of) Evidence for their Existence, and What We Would See if They Were Significant”, invited presentation – Upstate NY Chapter of the Society for Risk Assessment, October 13, 2006.
176) “Animal Dose Response Data for Predicting Risk of BT Events: Preliminary Thoughts on Validation Using the 2001 AMI Incident as a Case Study”, presented at the annual meeting of the Society for Risk Analysis, December 2006.
177) “Basic Microbial Dose Response”, C.N. Haas, presented at the annual meeting of the American Society for Microbiology, May 20, 2007, Toronto.
178) “Developing Unifying Principles in Microbial Risk Assessment”, presented at the annual meeting of the American Society for Microbiology, May 22, 2007, Toronto.
179) “E coli O157:H7 – What we Know about Assessing its Risk to Human Health”, presented at the annual meeting of the American Society for Microbiology, May 23, 2007, Toronto.

180) "Evolution of Disinfection of Water", presented at the annual meeting of the American Society for Microbiology, June 2008, Boston.
181) "100 Years of Disinfection", presented at the biennial conference of the International Water Association, Vienna, September 2008.
182) "Bioterrorism as a "New" Environmental Engineering Challenge", Invited presentation to the 3rd International Workshop on Environmental and Health Risk for Sustainability, University of Tohoku, Sendai, Japan, February 2, 2009.
183) "Basic Microbial Dose Response", presented at the biennia conference of the International Water Association, Montreal, September 2010.
184) "Statistical factors to consider in establishing risk based pathogens criteria for recreational water", Invited presentation – Gulf Coast Governors Conference on Gulf of Mexico Pathogens, Sarasota FL, September 2010.
185) "A Path to Fundamental Based Optimal Process Design in Environmental Engineering by Computer Experiments and Metamodels?" Seminar to the Department of Civil & Environmental Engineering, Temple University, October 2010.
186) "Animal and Human Dose-Response Models for prominent *Brucella* species", Presentation at Annual Conference of Society for Risk Analysis (by Sondra Teske, post-doc), Salt Lake City, December 2010.
187) "Dose-Response Model of Rocky Mountain spotted fever for humans", Presentation at Annual Conference of Society for Risk Analysis (by Sushil Tamrakar, PhD student), Salt Lake City, December 2010.
188) "Dose Response Using Animal Data", Invited presentation to the FDA Workshop on Listeriosis, Washington DC, March 2011.
189) "Risk Informed Response Plans for *B. anthracis*", invited presentation to the Armed Forces Public Health Conference, Newport News, March 2011.
190) "Re-envisioning a more sustainable urban water cycle", Invited presentation at Peking University in Szenzhen, April 2011.
191) "Introduction to QMRA", presentation at the biennial conference of the Association of Environmental Engineering and Science Professors, Tampa, July 2011.
192) "Quantifying Risks from Exposure to inhaled Microorganisms", Invited presentation, 2012 Bioaerosol Symposium, Yonsei University, Seoul, Republic of Korea, May17, 2012.
193) Organized and Chaired Symposium on "Quantitative Microbial Risk Assessment (QMRA) – Progress, Applications and the Future" at the 2012 World Congress on Risk, Sydney, Australia, July 19, 2012.
194) "Assessing Risk from Waterborne Microorganisms: from *Bacillus coli* to atgcaagtta", Invited keynote address, International Conference on Assessing Pathogen Fate, Transport and Risk in Natural and Engineered Water Treatment, Banff, Alberta, Canada, September 25, 2012.
195) "Wastewater microbiological monitoring as a health sentinel", invited presentation, Symposium on Wastewater Microbiological Monitoring, Tohoku University, Sendai, Japan, October 20, 2012.
196) "US policies in Climate Change; the role of science and technology", invited presentation, Fifth Congress on the State of the Environment: Extreme weather management and health, Interamerican University of Puerto Rico, San Germain PR, February 11, 2016.
197) "Quantitative Microbial Risk Assessment of *Legionella* and *Mycobacterium* in Harvested Rainwater", presented (by Kerry Hamilton), Society for Risk Analysis, San Diego, December 13, 2016.
198) "Presidential Roundtable: Post-Election Prospects and Challenges for Risk Policy", paper on Safe Drinking Water and Clean Water Acts, Society for Risk Analysis, San Diego, December 12 2016.
199) "Risks from Ebola Virus Discharge from Hospitals for Sewer Workers", presented (by Taylor Rycroft), Society for Risk Analysis, San Diego, December 14, 2016.
200) "Water Disinfection: From Laboratory Bench to Full Scale. Where We Are and Where We Need to Go.", presented at the American Chemical Society, San Francisco, April 3, 2017.
201) "Exposure to *Salmonell*a sp. and *H. pylori* from lettuce irrigated with contaminated water", Presented at the biennial meeting of the Association of Environmental Engineering and Science Professors, Ann Arbor MI, June 22, 2017.

Non-Reviewed Publications

1) "Chemical Basis for Interaction Between Aquatic Bacteria and Phytoplankton," Final Report to the National Science Foundation, Student Originated Studies Program (1973).
2) "Soluble Phase Chemistry of Trace Metal Transport Through Secondary Wastewater Treatment Systems," M.S. Thesis, Department of Environmental Engineering, Illinois Institute of Technology (1974).

3) "Heavy Metals Transport Through Municipal Sewage Treatment Plants." Proceedings, 2nd National Conference on Complete Water Reuse (1975). With J.W. Patterson and P. Shimada.
4) Discussion on "Temperature-Toxicity Model for Oil Refinery Waste." Journal of the Environmental Engineering Division, Proceedings ASCE, 101,446 (1975).
5) "New Microbial Indicators of Disinfection Efficiency." Annual Report to the U.S. Army Medical Research and Development Command (1975). With R.S. Engelbrecht et al.
6) "Inactivation of New Indicators of Disinfection Efficiency, Part I. Free Available Chlorine Species Kinetics." Proceedings, 96th Annual Meeting, American Water Works Association (1976). With F. Surucu.
7) Discussion on "Cyanophage Analysis as a Biological Pollution Indicator—Bacterial and Viral." Journal of the Water Pollution Control Federation, 49, 1913 (1977).
8) "Acid-Fast Bacteria and Yeasts as Disinfection Indicators: Enumeration Methodology." Proceedings, 5th Water Quality Technology Conference, AWWA. (1977). With R.S. Engelbrecht.
9) "New Microbial Indicators of Disinfection Efficiency." U.S. EPA Environmental Protection Technology Series 600/2-77- 052 (1977). With R.S. Engelbrecht et al.
10) "Mechanism of Inactivation of New Indicators of Disinfection Efficiency by Free Available Chlorine." Ph.D. Thesis, Department of Civil Engineering, University of Illinois at Urbana-Champaign (1978).
11) "Literature Review—Disinfection." Journal of the Water Pollution Control Federation, 50, 1134 (1978), with J. Gould.
12) "The Future of Chlorination." Rensselaer Fresh Water Institute at Lake George Newsletter, 8 #3 (1978).
13) "Acid-Fast Bacteria and Yeasts as Indicators of Disinfection Efficiency." US With R.S. Engelbrecht, et al.
14) Discussion on "Effects of Chlorination on Differentiated Coliform Groups." Journal of the Water Pollution Control Federation, 51, 2961(1979).
15) "Literature Review—Disinfection." Journal of the Water Pollution Control Federation, 51, 123 (1979). With J. Gould.
16) "Mode of Microbial Inactivation by Chlorine." Proceedings of the ASCE Environmental Engineering Specialty Conference, pp646-52 (1979). With R.S. Engelbrecht.
17) "Rational Analysis of Ultra-Violet Disinfection Reactors." Proceedings of the ASCE Environmental Engineering Specialty Conference, pp540-7 (1979). With G. P. Sakellaropoulos.
18) Discussion on "Kinetics of Bacterial Deactivation with Chlorine." Journal of the Environmental Engineering Division, ASCE, 105, 1198 (1979).
19) "Hazardous Waste Processing and Disposal Practices—Best Technology." Report to the New York State Environmental Facilities Corporation (1979). With W.W. Shuster, et al.
20) "The Potential for the Application of Resource Recovery Practices in the Hazardous Waste Processing and Disposal Industry." Report to the New York State Environmental Facilities Corporation (1979). With W.W. Shuster, et al.
21) "Literature Review-Disinfection." Journal of the Water Pollution Control Federation, 52, 1224 (1980 with J. Gould.
22) "Literature Review—Disinfection." Journal of the Water Pollution Control Federation, 53, 789 (1981), with J. Gould.
23) "What are Hazardous Wastes?" In R.L. Robbins (ed.) Limiting Liability for Hazardous Wastes, Chicago-Kent College of Law (1981).
24) "Technical Arguments Against the Adoption of Changes in the Illinois Wastewater Fecal Coliform Standards." Paper submitted to the Illinois Pollution Control Board (1981).
25) "Practical Considerations in the Use of Halogen Disinfectants." In A.D. Venosa (ed.), Proceedings of the Second National Symposium on Wastewater Disinfection, U.S. Environmental Protection Agency, EPA600/9-83-009 (1983).
26) "Literature Review—Disinfection." Journal of the Water Pollution Control Federation, 54, 646 (1982). With J.J. McCreary.
27) "Evaluation of High-Performance Phosphorus Control POTW's in the Great Lakes Basin." Final Report to the US EPA. With J.W. Patterson et al.(1982).
28) "Management of Hazardous Wastes: An Illinois Perspective." Report to the Illinois Institute of Natural Resources, With J.W. Patterson (1982).
29) "Microbiological Alterations in Water Quality in Distribution Systems and Granular Activated Carbon." Final Report to the US EPA. With M.A. Meyer et al. (1983).
30) "Incentives for the Treatment and Disposal of Hazardous Wastes by Alternative Methods." Report to the US EPA and the American Association for the Advancement of Sciences (1984).

31) "Wastewater Disinfection-A Review of the Technical and Legal Aspects in Illinois." Metropolitan Sanitary District of Greater Chicago, Department of Research and Development, Report 84-17 (1984). With C. Lue-Hing et al.
32) "Computer Applications to Chemical Equilibria in Modeling and Simulation of Aqueous Environment." Proceedings of the 2nd International Conference on Computer Aided Analysis and Design in Civil Engineering (1985). With V. Tare.
33) "Risks Associated with Viruses in Drinking Water", Proceedings of the Third Conference on Progress in Chemical Disinfection, p460-8 (1986), C.P. Gerba and C.N. Haas.
34) "Effects of Ceasing Chlorination on Selected Indicator Populations Downstream of Metropolitan Chicago's Major Wastewater Treatment Facilities", Metropolitan Sanitary District of Greater Chicago, Department of Research and Development, Report 87-17 (1987). With S. Sedita and C. Lue-Hing.
35) "Methods and Monitoring – Statistical Approaches", Chapter 20 in Drinking Water Microbiology: Progress and Recent Developments, G.A. McFeters[ed.], Springer-Verlag, New York (1990). C.N. Haas and B. Heller.
36) "Development and Testing of a Methodology to Identify, ex post facto, the Determinants of Remedial Actions at Superfund Sites", Center for Hazardous Waste Management, IIT/IITRI (1989). With G. Paulson et al.
37) "User Manual for the Computer Program WASTE (Waste Alternative Solutions to Evaluate) [and accompanying software]. Report to the Illinois Department of Energy and Natural Resources, J.W. Van Nortwick, C.N. Haas and R. Porter (1989).
38) "Editorial: Acting in the Face of Uncertainty", Journal of the Water Pollution Control Federation, 62, 2, 115 (1990).
39) Discussion on "Analysis of Inactivation of Giardia lamblia By Chlorine", Journal of Environmental Engineering, 115, 1, 1210-2 (1990).
40) "Editorial: Let's Surprise Rip Van Winkle", Research Journal of the Water Pollution Control Federation, 63, 5, 755 (1991).
41) "Demand Exceeds Supply for Environmental Engineers", Engineering Horizons, Fall (1992), pp27-28.
42) Invited Book Review, "Taste and Odor Problems Associated with Chlorine Dioxide", Environmental Progress,, 13(1):F10-11 (1994).
43) "The Risk of Over reliance on Risk Assessment", Water Environment Research, 67, 1, 3 (1995).
44) "Waterborne Diseases – Who is at Risk?", Proceedings of the 1994 AWWA Water Quality Technology Conference, II:57-71, CP Gerba, JB Rose and CN Haas (1995).
45) "Risk Assessment in Microbial Water Quality Criteria", Australian Water and Wastewater Association Journal, November/December, pps 18-20, CN Haas (1995).
46) "Microbial Risk Assessment: A New Tool in Water Quality Management", CP Gerba, JB Rose and CN Haas, Proceedings of the 6th International Conference for "Ecology and Environmental Quality", June/July 1996, Jerusalem.
47) "Linking Microbiological Criteria for Foods with Quantitative Risk Assessment", Chapter 14 in JJ Sheridan, RL Buchanan and TJ Montville (eds.), HAACP: An Integrated Approach to Assuring the Microbiological Safety of Meat and Poultry, Food and Nutrition Press, Trumball CT (1996).
48) "Quantitative Microbial Risk Assessment for Reclaimed Water", Proceedings – WaterTech, 1996 Annual Conference of the Australian Water and Wastewater Association, Sydney, May 1996, pp254-260. CP Gerba, JB Rose and CN Haas.
49) "Microbial Risk Assessment: A New Tool in Water Quality Management", Preservation of Our World in the Wake of Change, (Y Steinberger, ed.), VIA/B:732-735 (1996).
50) "Main Disinfection – Why Do it the Way We Do?", Opflow, 22(9):1,4 (1996), GA Burlingame, CN Haas and WO Pipes.
51) "Viewpoint: Acceptable Microbial Risk", Journal of the American Water Works Association, 88(12):8 (1996), CN Haas.
52) "Risk Assessment of HIV in Wastewater Collection and Treatment Systems", CN Haas, pages 103-108, in HIV in Wastewater, WEF Monograph (C. Lue-Hing, P. Tata and L. Casson eds.), Alexandria VA (1999).
53) "Disinfection in the 21st Century", Journal of the American Water Works Association, 92(2):72-3 (2000), C.N. Haas.
54) "Editorial: Environmental Engineering and Bioterrorism?", Journal of Environmental Engineering, 128(5):397 (2002), C.N. Haas.
55) "Toxic and Contaminant Concerns Generated by Hurricane Katrina", The Bridge (published by the National Academy of Engineering), Spring 2006, p5-13, D.D. Reible, C.N. Haas, J.H. Pardue, and W.J Walsh.

56) "WATERS Network – Transforming the Way the United States Assesses Water Quality and Manages This Valuable and Threatened Resource", WATER21 (International Water Association), Paula Estornell, Charles N. Haas, Barbara Minsker, Jerald L. Schnoor and Jami L. Montgomery, April 2007..

Student Advising

Rensselaer Polytechnic Institute

Year	Degree	Student	Title
1979	M.Eng.	P.A. Sajous	Oxygen Uptake Rate as a Control of Activated Sludge Process
1979	M.Eng	E.C. Morrison	Altered Sensitivity to Chlorine in E. coli.
1980	M.S.	P.A. Hughes	Laboratory Investigation of the Activated Sludge Process with Alum Addition for the Removal of Trace Metals.
1980	M.S.	C.A. Weitz, Jr.	Ultraviolet Reactor Design Using Hydraulic Parameters.
1982	M.Eng.	M.A. Zapkin	Inactivation of Escherichia coli by Chlorine in the Presence of Various Additives.

Illinois Institute of Technology

Year	Degree	Student	Title
1981	M.S.	L.M. Mele	Surface Water Hydrology of Coal Refuse Disposal Sites.
1982	M.S.	R. Garunas	Acid Waste Gas Biodesulfurization: An Alternative to Chemical Sulfur Recovery Processes.
1982	M.S.	K.A. Lavelle	Desulfobacter Biocatalyzed Reduction of Gypsum Wastes: Applications to Phosphoric Acid Manufacturing.
1983	M.S.	S.B. Karra	Kinetic Limitations on the Recovery of Metals From Wastewater by Precipitation.
1984	M.S.	K. Khater	Inactivation of Tetrahymena pyriformis By Monochloramine.
1984	M.S.	T. Jamrock	Effect of Time and Temperature on the E.P. Toxicity Test.
1984	M.S.	A. Wojtas	Inactivation of Tetrahymena pyriformis By Free Chlorine.
1984	M.S.	D.M. Brncich	The Determination of Stability Constants for Na, Li, and K Ion Pairs with Ocl
1984	M.S.	N. Horowitz	The Effect of Organic Ligands on the Adsorption of Cadmium Onto Kaolinite.
1984	M.S.	B. Kaplan	The Influence of Humic Acid on Solubility and Air-Water Partitioning of Toluene.
1984	M.S.	J. Macak	The Use of Coal Ash Mixtures as a Final Cover in the Reclamation of Landfills.
1985	M.S.	G. Vanderlaan	Feedstock Chemicals and the Hazard Ranking System Data Base.
1985	M.S.	M. Karalius	Inactivation of Escherichia coli by Chlorine in the Presence of K+ and Li+ Ions.
1985	M.S.	Robert Renaud	Investigation of Thiosulfate and other Dechlorinating Agents.
1985	M.S.	John Sheerin	Magnitude and Decay of Fecal Coliforms in Chlorinated and Non Chlorinated Wastewater Discharges.
1985	M.S.	J.R. O'Donnell	Spectrophotometric Determination of KD for the LiOCl, NaOCl and KOCl Ion Pairs.
1986	M.S.	Paul Bitter	Analysis of Five Nutrient Effects on the Growth of Microorganisms in the City of Chicago Drinking Water Supply.
1986	M.S.	Bon Mui	Distribution of Coliforms in Lake Michigan.
1986	M.S.	R. J. Vamos	Kinetics of Cadmium Complexation Reactions with Chloride and Hydroxide
1986	M.S.	C. D. Trivedi	Inactivation of Escherichia coli by Free Chlorine and Monochloramine in the Presence of Potassium Ions.
1986	M.S.	Andrew Kling	Energy Waste in Aeration Processes.
1986	M.S.	Angela Podesta	A Rapid Membrane Filter Technique For the Concentration of

			Plankton in Finished Drinking Water.
1987	M.S.	Paul Favara	Metal Removal in SBR Systems Treating Hazardous Waste Leachate.
1987	M.S.	H. D.-Markazi	Effect of Ethylene Glycol on Transport of Chloride thru Landfill Liner Material.
1988	M.S.	C. Brougnier	Co-Disposal of Plastics and Solvent Wastes as Residual Fuel.
1988	Ph.D.	K.V. Topudurti	Transfer of Chlorine from Monochloramines and Organochloramines to a THM Precursor.
1988	M.S.	Marc Bonem	Plant Deposition of Nitrogen Dioxide (co advised).
1990	Ph.D.	Yao Kouome	CSTR Microbial Inactivation by Free and Combined Chlorine.
1990	Ph.D.	C. Polprasert	Biological Sulfide Production for Heavy Metal Removal.
1990	Ph.D.	Richard Vamos	Binary and Ternary Equilibria of Cation Exchange.
1990	M.S.	Chi Lo	Assessment of Solid Waste Generation Patterns and Potential for Recycling on the IIT Campus.
1990	M.S.	P. Cunningham	Carcinogenic Risk Assessment: A Monte Carlo Study of Methods for Determining Confidence Limits on the Virtually Safe Dose
1991	Ph.D.	J. VanNortwick	Mixed Metal Precipitation
1991	M.S.	B. Bush	Carcinogenic Risk Assessment: Calculating Confidence Limits on the Virtually Safe Dose

Drexel University

Year	Degree	Student	Title
1992	M.S. (Env. Sci.)	Bruce Stirling	Biological Responses to Mixtures
1993	M.S. (Env. Eng.)	Joel Hornberger	Development of a Standard Method for the Determination of Disinfection Effectiveness Against Giardia Cysts
1993	M.S. (Env.Eng.)	Uma Anmangandla	Regression Analysis of Disinfection Kinetics
1994	M.S. (Env.Eng.)	Sean Kersten	Analysis Of Binary Toxic Mixtures Using A Model Of Independence
1995	M.S. (Env. Eng)	Kaushik Cidambi	Analysis Of Binary Toxic Mixtures Using A Generalized Additivity Model
1995	M.S. (Env.Eng)	Chris Crockett	Determination of Sources and Impacts of Giardia and Cryptosporidium in a Major Metropolitan Watershed
1996	PhD (Env Eng)	Jin Anotai	Effect of Calcium Ion on Chemistry and Disinfection Efficiency of Free Chlorine at pH 10
1996	M.S. (Env.Eng.)	Shubhangi Desai	Kinetics of Inactivation of G. muris by Monochloramine
1996	M.S. (Env.Eng.)	Aamir M Fazil	A Quantitative Risk Assessment Model for Salmonella
1996	M.S. (Env.Eng.)	R.B. Chitluru	Chlorination Kinetics for Water Main Associated Organisms
1996	M.S. (Env Sci)	J.L. Gambetese	Fate Modeling of Organic Compounds in Wastewater Treatment Plants: A Comprehensive Analysis of WATER7 and WATER8
1996	Ph.D.(Env Eng)	James Hagan	An Examination of Acute Environmental Toxicity of Pharmaceutical Compounds Using Quantitative Structure-Activity Relationships
1996	M.S. (Env Eng)	Josh Joffe	Data Analysis for Disinfection Kinetics Modeling.
1997	M.S. (Env Eng)	Joe Nattress	Benchmarking Giardia and Cryptosporidium Inactivation at the Philadelphia Water Department
1998	M.S. (Env Eng)	Dhumal Aturaliye	Electroporation Assisted Disinfection of Giardia and Cryptosporidium
1998	M.S. (Env Sci)	Aadithya Thayyar-Madabusi	A Quantitative Risk Assessment Model for Listeria monocytogenes and Escherichia coli O157:H7.
1999	Ph.D. (Env. Eng)	Mukul Gupta	Epidemiological Modeling of Waterborne and Foodborne Outbreaks
1999	MS (Env Eng)	Kathy French	Modeling Cryptosporidium Removal in Drinking Water by Physical Processes

1999	MS (Env Eng)	Chad Pindar	Clostridium perfringens as an Indicator for Cryptosporidium During Electroporation Assisted Disinfection
1999	MS (Env Eng)	Paul Batman	Water matrix effects on protozoan inactivation in chlorine-chloramine disinfection processes
1999	MS (Env Eng)	Dora D'Andrea	Inactivation efficiency of Mycobacterium by free chlorine
1999	MS (Env Sci)	Joseph Dmochowski	Benchmarking and modeling the inactivation of Legionella pneumophila using chlorine and chloramines
2000	MS (Env Eng)	Jason Sites	Analysis of Giardia Inactivation and Cryptosporidium Viability/Infectivity Assays in Various Disinfection Schemes
2001	PhD (Env Eng)	Paula R. Klink	Ion exchange on a chelating resin: multicomponent equilibrium predictions using binary data
2002	MS (Env Eng)	Jason Marie	Use of Microbial Risk Modeling to Determine the Benefit of Topical Antimicrobial Products
2002	PhD (Env Eng)	Dennis Greene	Numerical Simulation of Chlorine Disinfection Processes in Non-Ideal Reactors
2003	PhD (Env Eng)	Baris Kaymak	Effect of Initial Microorganism Concentration on Disinfection Efficiency by Chlorine.
2004	PhD (Env Eng)	Lijie Li	Effects of Initial Microbial Density on Disinfection Efficiency in a Continuous Flow System and Validation of Disinfection Batch Kinetics in a Continuous Flow System
2004	PhD (Env Eng)	Christopher Crockett	The Concentration and Resuspension of Cryptosporidium Oocysts by Sediments
2005	MS (MechE)	Sankalp Soni	Simulation of Contaminant Dispersal in An Apartment Building" (co-advised with Baki Farouk)
2005	PhD (Env Eng)	Thomas W. Armstrong	A quantitative microbial risk assessment model for human inhalation exposure to Legionella
2006	PhD (EnvEng)	Timothy A. Bartrand	High-Resolution Experimental and Numerical Analysis of Fine Bubble Ozone Contactors (co advised with Baki Farouk)
2006	MS (EnvEng)	Bishel B. Baby	A Dose-Response Analysis for Plague bacterium: Yersinia pestis
2007	PhD (EnvEng) (co advised)	Lynn A Arlauskas-Dekleva	1-Hydroxyanthraquinone: Activity in Paracoccus denitrificans and Potential Application for Biomass Reduction in Wastewater Treatment Facilities.
2008	MS (Env Eng)	Robert Praga	Water exposure and health impacts of recreational waters in an urban watershed
2009	PhD (EnvEng)	Joanna M. Pope	Tracking the Sources of Fecal Contamination in the Wissahickon Creek Watershed using Phenotypic and Genotypic Analytical Methods
2009	PhD (EnvEng)	Mark Weir	Development of Physiologically Based Pathogen Transport and Kinetics Model for Inhalation of Bacillus anthracis Spores
2010	PhD (EnvEng)	Shamia Hoque	Development of Computational Fluid Dynamics based Multiple Linear and Neural Network Metamodels for Bioaerosol Fate and Transport in Indoor Environments
2010	PhD (EnvEng)	Paula Estornell	Sustainable Development: Which Policy Process – Autocratic or Democratic- Leads to More Durable Policy and Environmental Outcomes?
2010	PhD (EnvEng)	Yin Huang	Incorporating Time to Response into Dose-Response Models Used in Quantitative Microbial Risk Assessment
2011	PhD (EnvEng)	Sushil Tamrakar	Dose-Response Models of Rickettsiae and Other Biological Agents of Concern
2011	MS (EnvEng)	Adam Erispaha	Modeling of Trihalomethane Formation Based on Consensus of Existing Empirical Models
2013	PhD (EnvEng)	Michael Ryan	Microbial Source Tracking of Human and Animal Waste Pollution of Diverse Watersheds and of Green Infra-

			structures using Molecular Methods
2013	PhD (EnvEng)	Neha Sunger	Quantitative Health Risk Assessment of Recreational Water Users in Philadelphia
2015	PhD (EnvEng)	Lauren Weinrich	The Impact of Assimilable Organic Carbon on Biological Fouling of Reverse Osmosis Membranes in Seawater Desalination
2016	MS (EnvEng)	Taylor Rycroft	Risks from Pathogen Discharge from Hospitals to Sewer Workers: Quantitative Microbial Risk Assessments for *Ebolavirus* and *Mycobacterium avium* Complex
2017	PhD (EnvEng)	Kerry Hamilton	Quantitative Microbial Risk Assessment for sustainable water resources
2017	PhD (EnvEng)	Bidya Prasad	Incorporating the Host-Pathogen Kinetics of Time-Dose-Response into Epidemic Outbreaks

Student Research In Progress at Drexel University:

Degree	Student	Topic
PhD (EnvE)	Paul Kohl (2013-)	Energy Recovery from Wastewater Flows
PhD (MechE)	Wangshu Wei (2014)	Metamodels from CFD Analysis of Disinfection Contactors (co-advised with B. Farouk)

Teaching Experience

Rensselaer Polytechnic Institute

Undergraduate
- Unit Processes
- Thermodynamics
- Environmental Engineering Laboratory
- Chemistry for Environmental Engineers

Graduate
- Advanced Aquatic Chemistry
- Biological Treatment

Illinois Institute of Technology

Undergraduate
- Water & Wastewater Treatment
- Introduction to Environmental Engineering

Graduate
- Environmental Chemistry
- Biochemical Engineering
- Physical Treatment
- Sanitary Design
- Hazardous Waste Engineering
- Industrial Waste Treatment Criteria
- Groundwater Contamination
- Data Analysis

Drexel University (* - Undergraduate Course)

Undergraduate
- Environmental Engineering I
- Unit Operations Laboratory
- Reaction Kinetics & Mass Transfer
- Bioterrorism (Special Topics)
- Professional Practice in Environ. Eng.
- Environmental Engineering Laboratory I, II
- Introduction to Environmental Engineering
- Water & Wastewater Design III

Graduate
- Unit Operations: Biological
- Chemistry of the Environment
- Risk Assessment
- Advanced Environmental Chemistry
- Unit Operations: Physical-Chemical
- Topics in Environmentrics
- Hazardous Waste & Groundwater Treatment
- Biostatistics
- Environmental Impacts
- Sanitary Microbiology

Service on External Graduate Student Committees

Alexa Oblensky, University of North Carolina at Chapel Hill, Department of Environmental Science and Engineering (advisor – Phil Singer), 2002-2006.

Benjamin Tanner,, University of Arizona, Department of Soil, Water and Environmental Sciences (advisor – Ian Pepper), 2003-2004.

James Brooks, University of Arizona, Department of Soil, Water and Environmental Sciences (advisor – Ian Pepper), 2003-2004.

Domenico Santoro, Polytechnic of Bari at Taranto (Italy), Faculty of Environmental Engineering (external examiner and collaborator; advisor – Lorenzo Liberti), 2004-2005.

Post-Doctoral Scholars Advised

Vinod Tare (PhD – IIT Kanpur) – 1985-87
Timothy Bartrand (PhD – Drexel Univ.) – 2007-8
Sharon Nappier (PhD – Johns Hopkins) – 2008 – 2009
Toru Watanabe (Japan Society for Promotion of Science sponsored; PhD Tohoku Univ.) – 2008-2009
Sondra Teske (PhD – Univ. of Arizona) – 2009 –2012
Michael Ryan (PhD – Drexel University) – 2013--2014

Professional Activities

Editorial Boards

Founding Editor in Chief - Quantitative Microbiology (Kluwer), 1998-2001
Applied and Environmental Microbiology (Editorial Board, 1988-1994)
Water Environment Research (Board of Editorial Review, 1989-1995; Chair 1991-1995)
Ozone Science & Engineering (Editorial Board, 1999 - 2001)
Journal of Medical Risk (Editorial Board, 2003-)
Risk Analysis (Associate Editor – Microbial Risk, 2006-)

Panels and Seminars Chaired

Organized and Chaired a Seminar on "Mode of Action of Halogen Disinfectants Used in Water and Wastewater Treatment" at the Annual Meeting of the American Society for Microbiology, Dallas, March, 1981.

Organized and Chaired a Session on "Disinfection and Chemical Oxidation" at the Annual Meeting of the American Institute of Chemical Engineers, New Orleans, November, 1981.

Organized and Chaired a Session on "Potpourri: Industrial and Toxic Wastes" at the National Meeting of the American Institute of Chemical Engineers, Cleveland, August, 1982.

Organized and Co-Chaired a Session on "Recovery of Metal Values From Industrial Wastes" at the National Meeting of the American Institute of Chemical Engineers, Denver, August 1983.

Invited Chairman on "Disinfection of Wastewater Effluents" NSF State of the Art Conference on Disinfection of Wastewater Effluents and Sludges, Miami, May 1984.

Organized and Chaired a Preconference Workshop on "Alternative Wastewater Disinfection Processes: Design and Operation", WPCF, Los Angeles, October 1986.

Organized and Chaired a Preconference Workshop on "Emerging Issues in Effluent Disinfection", WPCF Preconference Workshop, Philadelphia, October 1987.

Co-Organized and Co-Chaired a Preconference Seminar on "Practical Experience with Ozone for Organics Control and Disinfection", AWWA, Cincinnati, June 1990.

Co-Organized and Co-Chaired a Preconference Seminar on "Water Quality Changes from Chloramination", AWWA, Philadelphia, June 1991.

Co-Organized and Co-Chaired a Preconference Seminar on "Meeting Disinfection Byproducts Standards", AWWA, Vancouver, June 1992.

Organized opening general session, “When is Wastewater Disinfection Necessary?” at WEF Specialty Conference on Wastewater Disinfection, Whippany NJ, May 1993.

Co-Organized Preconference Seminars on “Disinfection: The New Basics” and “When is Groundwater Disinfection Necessary”, AWWA, June 1993, San Antonio.

Co-Organized Symposium on “Microbial Risk Assessment in Water and Food” at the Annual Conference, Society for Risk Analysis, Savannah GA, December 1993.

Organized a Workshop on Microbial Risk Assessment of Food, Society for Risk Analysis, Washington DC, December 1997.

Co-Organized Disinfection Specialty Conference, Water Environment Federation, Baltimore MD, April 19-22, 1998.

Program Committee, AWWA/IWSA Conference "Protecting Water Quality in the Distribution System: What is the Role of Disinfectant Residual", Philadelphia, April 26-28, 1998.

Organized NSF supported expert workshop on Advancing the Quality of Water (AQWA), Chapel Hill NC, March 10–12, 2004.

Co-Organized WEF/AWWA/IWA Disinfection Specialty Conference, Pittsburgh PA, February 4-7, 2007

Professional Society Activities

American Society of Civil Engineers,
- Environmental Engineering Division.
  - Member, Task Committee on Disinfection Risk Assessment 1981-1985.
  - Water Supply and Resource Management Committee
    - Chairman, Task Committee on Control of Microbes in Drinking Water, 1989-90
- Member, Executive Committee, Department Heads Council (2011-)

American Water Works Association
- Member, Research Division Committee on Disinfection, 1980-1992.
- Member, Water Quality Division Committee on Disinfection, 1982-present.; Chairman, 1989-1994
- Member, Water Quality Division Committee on Organisms in Water, 1983-1987.
- Member, Water Quality Division Committee on Status of Waterborne Diseases in the US and Canada, 1987-1995
- Member, Student Activities Committee, 1984-1990.
- Illinois Section Student Activities Committee, Member, 1981-1990; Chairman, 1983-1986.

American Water Works Association Research Foundation (AWWARF)
- member, various project advisory committees (1993-current)

Association of Environmental Engineering and Science Professors
- Chairman, Committee to revise recruitment brochure, 1981-1983.
- Member, Board of Directors, 2001-2004
- Treasurer and Member of the Executive Committee, 2002–2004
- Chairman, Conference Planning Committee, 2003-present

International Water Association
- USA National Committee
  - delegate (from ASM) 1988-2000.
  - Chairman 1994 - 2000
- Chairman, USANC Membership Committee, 1991-1993.
- Program Committee for 1998 (Vancouver), 2000 (Paris), 2001 (Berlin) and 2002 (Melbourne) Conferences, 1996-2001.

Water Environment Federation
- Director-at-Large, 2004-2006.
- Member, Research Committee, 1978-1982.
- Member, Research Committee Task Force on Toxic Substances, 1980-1982.
- Member, Committee on Disinfection, 1980-1988, 1991-present.
  - Vice-Chairman, 1982-1985.
  - Chairman, 1985-1988.
- Member, Research Symposium Subcommittee of the Program Committee, 1984-1986.
- Member, Illinois Association Student Activities Committee, 1981-1990.
- Member, Technical Practices Committee Task Force on Disinfection, 1982-1985.
- Chairman, Specialty Conference Planning Committee: Microbial Aspects of Surface Water Quality, 1988-1989.
- Member, Board of Editorial Review for the Research Journal, 1989-1995.
  - Chairman, 1992-1995.
- Co-Chairman, Third Specialty Conference on Disinfection (Baltimore, April 1998)

Water Environment Federation Research Foundation
- member, Project Subcommittee (UV Disinfection) - Sept 1996-1998

member, Project Subcommittee (Water Reuse) - Oct. 1997-2001
member, Board of Directors – 2006-2009

Standard Methods for the Examination of Water and Wastewater
Chairman, Joint Task Group on Chlorine Residual, 1984-1992.
Member, Joint Task Group on Chlorine Demand, 1988-1994.

Society for Risk Analysis, Councilor (member, Board of Directors), 2000–2003

American Association for the Advancement of Science, Division Y (General Interest)
Electorate Nominating Committeee (2002-2005).
Chair-Elect (2008-9)
Chair (2009-2010)

American Society for Microbiology
Public and Scientific Affairs Board, Committee on Environmental Microbiology, Member (2003-2010)

Continuing Education Programs

Seminar on Current Topics in Water Supply, New York State Section of the American Water Works Association, Ossining, NY, November, 1980.

Limiting Liability for Hazardous Wastes, a continuing education program for lawyers, sponsored by the Chicago-Kent College of Law, Chicago, November, 1981, was also a member of the program Steering Committee.

WPCF Preconference Workshop on Wastewater Disinfection Alternatives, Atlanta, October 1983, Co-organizer and participant.

University of Wisconsin-Milwaukee, Engineering Extension. Disinfection of Water and Wastewater, May 1984.

WPCF Preconference Workshop on Disinfection Risk Assessment, New Orleans, September 1984, Co- organizer and participant.

University of Wisconsin-Milwaukee, Engineering Extension. Disinfection of Wastewater, May 1985.

University of Wisconsin-Milwaukee, Engineering Extension. Wastewater Pretreatment and Toxicity Control, March, 1986.

University of Wisconsin-Milwaukee, Engineering Extension. Disinfection of Water, June 1986.

WPCF Preconference Workshop on Design and Operation of Alternative Disinfection Systems, Los Angeles, October, 1986, Organizer and participant.

WPCF Preconference Workshop on Emerging Issues in Effluent Disinfection. Philadelphia, October, 1987, Organizer and participant.

WPCF Specialty Conference on Microbial Aspects of Surface Water Quality, Chicago, May 1989, Organizer.

WPCF Preconference Workshop on Changing Standards for Effluent Disinfection, San Francisco, October 1989.

California Business Law Institute, Environmental Regulation in Illinois, participant, November 1989.

University of Wisconsin-Madison, Engineering Extension. Disinfection of Wastewater, October 1989, October 1990.

University of Wisconsin-Madison, Engineering Extension. Disinfection of Water, November 1989.

International Association of Milk, Food and Environmental Sanitarians, Co-Organized Workshop on Microbial Risk Assessment of Foods, Pittsburgh, July 1995.

WEF Specialty Conference on Disinfection, Baltimore MD, April 1998, co-organized.

AWWA/IWSA Symposium on Disinfection Residuals, Philadelphia PA, April 1998, member - planning committee.

University Service

Rensselaer Polytechnic Institute

RPI Department of Chemical and Environmental Engineering Committee on Graduate Students, Member, 1978-1981.

Planning Committee for the UPS Conference, RPI Fresh Water Institute, 1979.

Member, RPI Biohazard Safety Committee, 1979-1981.

Advised RPI Safety Manager on Chemical Waste Disposal Practices, 1980-1981.

Illinois Institute of Technology

Member, IIT Graduate Study Committee, 1981-90.

Chairman, Departmental Faculty Search Committee, 1982-1984, 1987, 1990.

Member, Armour College Committee on Promotion and Tenure, 1984-1986.

Member, Institute Library Planning Committee, 1983-88.
IIT Faculty Senate, Recording Secretary, 1984-1986.
Corresponding Secretary, 1987-1988.
Member, New Business Committee, and IIT Projects Manager, Center for Hazardous Waste Management, 1987-89.
Member, Search Committee for Dean of Armour College of Engineering, 1987-1988.
Member, Department Chairman Search Committee, 1988-9.
Member, IIT Faculty Council, 1989-90
Chairman, Academic Affairs Committee, 1989-90

Drexel University

University
Faculty Senate
Member 1991-1992, 1994-1997
Vice Chair, 1994-1995
Chair, 1995-1996
Member, University Appeals Committee, 1991-94, 2013-2016
Member, Search Committee for Associate Director of Enrollment Management (Graduate/Part Time), 1992
Chairman, University Biosafety Committee, 1996-1998.
University Assessment Committee (preparation for Middle States visit), 1998-2001
Member
Co-chair, Research & Graduate Task Force
Chairman, Search Committee for a Director of SESEP, 2000-2002
Member, Law School Development Committee, 2004-5.
Co-Director, Drexel Engineering Cities Initiative (DECI), 2008-2010
Member, Vice Provost for Research Search Committee, 2009-10
Member, Academic Excellence Award Committee, 2009-10
Member, Dean of Public Health Search Committee, 2012-2013

College/School
Chairman, BS Environ. Eng. Curriculum Development Committee, 1993.
Chairman, Environmental Policy Faculty Search Committee, 1997.
Member, The Drexel Engineering Curriculum Revision Committee, 2005-2007.

Department
Chairman, Environmental Studies Institute Curriculum Committee, 1991-1994
Chairman, Civil and Architectural Engineering Department Graduate Committee, 1991-1992
Member, Civil and Architectural Engineering Department Committee on Laboratory Renovation, 1993-4.
Member, Search Committee, Architectural Engineering Faculty, 1993-1994.
Member, Search Committee, Environmental Engineering Faculty, 1996.
Member, Search Committee, Environmental Chemistry Faculty, 1993-1994, 1996
Chairman, SESEP Faculty Search Committee, 1997-1998.
Chairman, SESEP Curriculum Committee, 1999-2002
Chairman, ABET Preparation for Initial BS EnvE Accreditation, 1999-2002
Chair, Midterm Review Committees for Assistant Professors Lordgooei and Wartman, 2002.
Member, Departmental Promotion Committee for Associate Professor Welty, 2002.
Member, Department Head Search Committee, 2002-2003.
Member, CAEE Department Undergraduate Curriculum Committee, 2002-2005
Member CAEE Department Graduate Committee, 2003-2005
Chair, CAEE Department Faculty Search Committee, 2003-2004

Consulting Activities

Energy & Resource Recovery Corporation (Subsidiary of Alpha Portland Industries)--performed a regulatory analysis and preliminary feasibility study for the use of hazardous wastes and spent solvents as supplemental fuel in cement kilns, 1979.

New York State Department of Civil Service - served as a member of oral examination panels for the positions of Associate Sanitary Engineer and Associate Air Pollution Control Engineer, March through May, 1981.

Patterson Associates, Inc.

–preparation of a state-of-the-art report on hazardous wastes in Illinois, Illinois Institute of Natural Resources, May through October, 1981.

–determination of hazardous waste production potential and management options for the forging industry, June through October, 1981.

–analysis of a the waste management profile for a large, privately held, conglomerate, November, 1986.

K.A. Steel Chemicals, Inc. --preparation of a technical document and testimony against the proposed changes in the Illinois wastewater fecal coliform standards, October 1981 through February, 1982.

PEER Consultants, Inc. -- reviewed draft US EPA report entitled "User Guide for Evaluating Remedial Action Technologies." August, 1982.

Waste Management, Inc. --Prepared testimony on the need for additional hazardous waste disposal capacity in Will County, Illinois, October, 1982.

Katz, Friedman, Schur and Eagle/United Auto Workers-- evaluation of technical documents relating to environmental impact of cooling water discharge at Quad Cities/Cordova Generating Station, June 1983-ongoing.

Bituminous Insurance Companies--evaluation of possible mechanisms for failure of the Galesburg, IL anaerobic digestor, November 1984-1985.

Metropolitan Sanitary District of Greater Chicago--preparation of oral and written civil service examination materials and service on oral examination panels, 1981-1990.

Battelle Columbus Laboratories -- peer review of a document on feasibility of risk assessment for sludge management. August, 1985.

Hydrite Chemical Co.--Preparation of expert testimony on changes in wastewater bacteriological standards in the State of Wisconsin, December 1985 - March, 1986.

US EPA (Region VIII) -- Advised on the efficiency of and the means to improve disinfection and dechlorination at the Metro Denver Wastewater Treatment Plant, March 1986.

East Bay Municipal Utility District (Oakland, CA) -- Serve as a technical advisor on the design of an innovative stormwater overflow disinfection system, August 1986-April 1987.

E & E Hauling, Inc. -- Advised on environmental impact of an asphalt hot melting facility, January 1987.

Confidential client -- Advised on the feasibility of a proposal for a new solid waste disposal facility, March, 1987.

Peat Marwick Main, Inc. -- Preparation of examination questions for wastewater treatment plant operational personnel, November, 1987.

Metropolitan Waste Systems, Inc.

-- Preparation of testimony on need for solid waste disposal capacity in La Salle County, IL, March - May, 1988, January-May, 1989.

-- Assessment of need for a solid waste transfer station in Blue Island, IL. January 1989.

Madison (WI) Metropolitan Sanitary District -- Review of Petition for Disinfection Waiver and presentation of supporting testimony, August, 1988-February, 1989.

US EPA (Region IX)/US Department of Justice -- Expert witness regarding removal of pathogens and trace pollutants by secondary treatment processes (US and California vs. City of San Diego), October 1989 - February 1991.

James M. Montgomery Engineers -- Statistical evaluation of disinfection byproduct data, February 1990 - September 1990.

Land and Lakes Co. -- Assessment of need for additional solid waste disposal capacity in Will County, IL. December 1989 - November 1990.

Chlorine Institute -- preparation of review on chlorine fate in freshwater systems as part of FIFRA reregistration application, July-August, 1990.

Wade Miller and Associates, Inc., Cadmus Inc. -- Provided input and assistance in development of disinfection byproduct regulatory analysis in drinking water, July 1991 - 1998.

City of Philadelphia - Department of Personnel -- Served on Oral Examination Panel for Water Treatment Engineer, March 1993.

Miller, Cassidy LaRocca and Lewin; Carr Goodson and Lee; Elzufon Austin and Drexler - Expert witness on chlorination practices in water treatment (Hoechst Celanese et al. v. National Union et al.; Delaware Chancery Court), 1991-1994.

Montgomery Watson Engineers - Technical Advisory Panel Member, Multiclient Study on Disinfection of Cryptosporidium in Drinking Water, 1995-1999.

Carollo Engineers - Microbial Criteria Development for a Water Treatment Plant, including consideration of recycle streams and Cryptosporidium, 1996-1997.

Procter and Gamble Co.-Evaluate Beneficial Effects of Anti-Microbial Preparations, 1997-1999.

Procter and Gamble Co.-Analyze Kinetics of Algal Growth on Inhibitory Substrates, 1998-1999.

Holland & Knight - provide expert report and testimony regarding water and wastewater treatment (US and State of Maryland vs. Mayor and City Council of Baltimore), 1998-1999.

US Department of Justice - provide expert analysis on impact of sewage discharges on water quality (US vs. Penn Hills), 1998.

CDM, Inc. and Massachusetts Water Resources Authority - advise on novel integration approaches to evaluating disinfection "ct" values, 1998.

Foley, Hoag and Eliot (counsel for Massachusetts Water Resources Authority) -- expert in defense (US vs. Mass. Water Resources Authority) regarding necessity for filtration, 1999-2000.

Black and Veatch - Technical review and resource panel, Las Vegas Alternative Discharge Study, 2000.

McDermott, Will & Emery and Bayer Agricultural - Assistance with comments on proposed FDA withdrawal of use of fluoroquinolines in poultry rearing, 2001-2003.

Linowes And Blocher/Holland and Knight - Assistance with permit issues on limestone mining (potential groundwater impacts) in Miami-Dade, Florida, 2001-2004.

Alston and Bird - Provide expert support in administrative proceeding on behalf of Gwinnett County GA regarding defense against petition to deny effluent discharge permit modifications. (Lake Lanier Association et al. v. Georgia Environmental Protection Division). 2001-2002.

US Department of Justice - provide expert analysis on impact of microbial water quality on worker risks (John G. Abbott et al. vs. U.S.). 2002-2004.

Foley, Hoag and Eliot (counsel to Portland Water Bureau) – advise on regulatory issues relating to the Long Term 2 Enhanced Surface Water Treatment Rule, 2006.

Metropolitan Water Reclamation District of Greater Chicago (via CTE Engineers) – provide assistance with respect to regulatory proceedings on surface water quality and disinfection criteria, 2007-.

Hurvitz & Waldman – provide expert support in defense of litigation involving Legionella and drinking water, 2008-11.

US Department of Justice – provide expert analysis in criminal enforcement case under the Clean Water Act, 2011-2012

CDM, Inc. – Provide technical assistance regarding compliance with *Cryptosporidium* standards in Portland, OR, 2011-2012

Membership in Advisory Bodies

External Thesis Examiner, Indian Institute of Technology, Kanpur, 1979, 1981, 1983, 1993, 1996.

Chaired peer review panel to review the research program on "Microbial Degradation in Distribution Systems" for US EPA, June 1983.

Member, State of Illinois Hazardous Waste Task Force, 1983-4.

Member, US EPA peer review panel to review work on microbial inactivation in drinking water disinfection, March 1986.

Member, US EPA peer review panel to review program on risk assessment from microorganisms in wastewater sludges, April 1986.

Invited ad hoc reviewer for the Drinking Water Subcommittee, US EPA Science Advisory Board, June 1987.

Assisted in preparation of resource document on wastewater disinfection, US EPA, 1988.

Member, peer review panel, Oklahoma Council on Science and Technology, 1989.

Member, study section, National Institute of Environmental Health Sciences, 1991, 1994.

Invited Participant, Workshop on the Methodology for Deriving National Ambient Water Quality Criteria for the Protection of Human Health, US EPA -- Office of Science and Technology, September 1992.

Member, City of Philadelphia, Department of Health, Advisory Committee on Cryptosporidium, October 1995-1999.

Member, Panel on Augmentation of Potable Water Supplies with Reclaimed Water, National Academy of Sciences, Water Science and Technology Board, 1996-1998.

Invited Participant, Workshop on Microbial Risk Assessment, hosted by NAS Committee to Review New York City Watershed Management Strategy, April 1998.

Member, Committee to Review New York City Watershed Management Strategy, National Academy of Science, Water Science and Technology Board, 1998-99.

Member, Oversight Steering Committee and Statistics Panel, EPA-George Washington University Cooperative Agreement on Risk Assessment, 1999-.

Member, Committee on Drinking Water Contaminants, National Research Council Water Science and Technology Board, 1999-2001.

Invited Participant, Consultation on "Harmonised Risk Assessment for Water-Related Microbiological Hazards", World Health Organization, Stockholm, Sweden, September 12-16, 1999.

Invited Participant, World Health Organization and Food and Agricultural Organization, joint workshop on "Hazard Characterization of Pathogens in Food and Water", Bilthoven, The Netherlands, June 13-18, 2000.

Member, Committee on Toxicants and Pathogens in Biosolid Fertilizers, National Research Council, Board on Environmental Studies and Toxicology, 2001-2002.

Member, review team for the Environmental Pollution Control MS Program, Pennsylvania State University, March 2001.

Honors examiner, Swarthmore College, May 2001.

Member, Committee on Indicators for Waterborne Pathogens, National Research Council, Board on Life Sciences, 2002-2003

Member, Panel to Review EPA Research Plan on Water Security, National Research Council, Water Science and Technology Board, 2003-.2004

Member, Committee on Standards and Policies for Decontaminating Public Facilities Affected by Exposure to Harmful Biological Agents: How Clean is Safe? National Research Council, Board on Life Sciences, 2003-2005.

Member and Vice Chair, Committee on Public Water Distribution Systems: Assessing and Reducing Risks. National Research Council, Water Science and Technology Board, 2004-2006.

Member, Water Science and Technology Board (WSTB), National Research Council, 2004-2010.

Member, Committee on Water System Security, National Research Council, Water Science and Technology Board, 2004-2006.

Member, US EPA Board of Scientific Counselors Executive Committee, 2007-2012.

Member, National Research Council Committee on Assessment of Water Reuse as an Approach for Meeting Future Water Supply Needs, 2008-2011.

Chair, National Research Council Committee on Evaluation of the Health and Safety Risk Analyses for the Planned Expansion of USAMRIID's Biosafety Level 3 and 4 Laboratories at Fort Detrick, Maryland, 2009-2010.

Member, US EPA Science Advisory Board Augmented Committee on Ecosystem Services and Processes to Provide Advice on Ballast Water Management, 2010-1.

Chair, National Research Council Committee on Assistance to the U.S. Army Medical Research and Materiel Command with Preparation of a Risk Assessment for the Medical Countermeasures Test and Evaluation (MCMT&E) Facility at Fort Detrick, MD, 2011

Member, National Research Council Committee on Risks and Benefits of Gain of Function Research, 2014-2016.

Member, National Academies Committee on Microbiomes of the Built Environment: From Research to Application, 2016-2017

Member, National Academies Committee on Strategies for Identifying and Addressing Biodefense Vulnerabilities Posed by Synthetic Biology, 2017-2018.

February 4 2017

JOSEPH G. HARRINGTON (JOE)
PRESIDENT - MINEWATER LLC & SUBSIDIARIES

Vision

Mr. Harrington leads a team of professionals at MineWater LLC, a small business with offices in Centennial and Lonetree CO and a service yard in Northglenn CO. At MineWater we are focused on using good science and common sense proven solutions to solve water problems that arise from mining and mining wastes. We can rapidly build and/or operate treatment systems for acid rock drainage throughout the United States, and we can implement pretreatment remedies for source areas that can simplify a complex water treatment problem and potentially result in a semipassive solution rather than requiring active 24 hour intervention to maintain regulatory compliance.

Experience

MineWater LLC (2016-present)

Joe led the successful acquisition of a large historic mine district with over 200 mine claims (about 3,000 acres), very senior water rights and substantial mineral resources. This purchase included the negotiated settlement of past liabilities through a Compliance Order on Consent and Settlement Agreement with the State of Colorado and the transfer of the existing permits from two separate entities including a Special District to a subsidiary of MineWater. Mr. Harrington then oversaw the implementation of in-situ remedies to remediate the mine pollution and to restore the ambient water quality along 7 miles of high value trout streams near Alma Colorado downstream of the mine district.

Alexco Environmental Group US Inc., Denver, CO; (2005-2016).

Joe designed and directed the construction (within 21 days from notice to proceed; to full automated operation) of the Interim Water Treatment Plant for the US EPA at the Gold King Mine near Silverton in support of the emergency response to the accidental release into the Animas River in August 2015. Joe continues to direct and oversee the operations of the fully automated water treatment facility at the Gold King Mine since October 2015.

Joe was a key member of the acquisition team successful in the purchase of the Keno Hill Silver District in Yukon Canada from the Government of Canada in an auction overseen by PricewaterhouseCoopers. Mr. Harrington developed the initial acquisition strategy for addressing widespread mining contamination from 45 underground mines including seven discharges requiring active water treatment operations during the bidding process and subsequent negotiations that was accepted by the Government of Canada and of the Yukon.

Joe designed and implemented the successful treatment of the Barite Hill Mine Superfund Site pit lake during an emergency response / removal action in 2007-2008, under oversight by US EPA Region IV. The treatment process successfully created non-toxic water in-place within the mining pit lake that was previously heavily contaminated and with a pH of less than 2.0 S.U.

Joe designed and managed the implementation of an in-situ treatment process within the Zona Satelité of the Quiruvilca Mine, La Libertad District, Peru. This successful project demonstrated that agricultural byproducts of the surrounding farms and processing plants could be used in a sustainable cleanup process to achieve protection of the river from the closure of the mine, without requiring perpetual collection and treatment of the mine pool.

Joe designed and oversaw construction (in 24 days) of the replacement WWTP for the former Asarco Globe Smelter Site in north Denver. Joe also developed the new remedy proposal accepted by the State of Colorado and USEPA through a decade long process involving multiple community meetings, including funding, design and implementation of pilot demonstrations and additional investigation. Joe has overseen and managed the technical direction of the work, treating 600,000 cubic yards of hazardous soil (characteristic for leachable arsenic and cadmium) and implementing in-situ groundwater treatment strategies for protection of the South Platte River. The in-situ treatment attained MCLs for arsenic, cadmium, selenium and zinc in the down-gradient plume leaving the Site.

Joe designed and implemented the construction of a mobile reverse osmosis dewatering treatment plant for the Cotter Schwartzwalder Mine, coupled with an in-situ treatment process that successfully reduced the in-situ concentrations of uranium, molybdenum and selenium by more than 90% in the very large (3,400 feet deep) mine pool.

Joe has managed and implemented mine pool pretreatment and mine water treatment sludge stabilization projects at the Platoro Mine six air miles from Summitville since 1999 and annually since 2006 for both Green World Science and for Alexco.

Additional Projects

In situ treatment design and/or implementation at: Blackwell Smelter (OK), San Luis Mine (CO), Sweetwater Uranium (WY), Mike Horse Mine (MT), Frisco Mine (ID), Yellowpine (ID), Beartrack (ID), Black Pine (ID), Delamar (ID), East Michaud Flats Simplot (ID), Echo Bay Mine (WA), OU2 Bunker Hill (ID), Formosa Mine (OR), LMC The Dalles (OR), Brewery Creek (YT), London ETTP (CO), London WT (CO), Eagle Mine (CO), Garfield Smelter & Tailings (UT), Royal Mountain King (CA), Castle Mountain (CA), Dee-Arturo (NV), Bald Mountain (NV), Alligator Ridge (NV), Cominco Buckhorn (NV), Coeur Rochester (NV), Newmont Trinity (NV), Hollister (NV), Iron King Mine (AZ).

Professional History

May 2014 - , Alexco Environmental Group US Inc., VP-Business & Strategic Development
2007-May 2014, Alexco Environmental Group US Inc., VP-Technology & Strategic Development
2001-2006, ARCADIS, VP-Mining and Metals Business
1996 – 2007, Green World Science Inc., Chief Executive Officer & Chairman.
1987 – 1997, J.R. Simplot Company, Chemist

August 2006 – Present, Advisor to the board of the following companies:

Encore Energy Corp
Tigris Uranium
EMC Specialty Metals Corp
Energy Metals Corp (NYSE: EMU)
Golden Predator Mines
Golden Predator Royalty Development Corp
Americas Bullion Royalty Corp
Till Capital Corp.

Education

Graduate Research in Metallurgy (all course-work completed, thesis was not completed), 1998, University of Idaho
First year – School of Medicine, Loma Linda University
B.S. Microbiology, concentrations in Chemistry and Metallurgy, 1996, University of Idaho - *Magna Cum Laude*.

Professional Memberships

Society Mining Engineering (SME)
Barry Goldwater Fellow

Training and Certifications

40 hr HAZWOPER
MSHA 5000-23 Certificate
Excavation Supervisor

Conferences and Workshops as Speaker

Northwest Mining Association annual meeting, 1991 – 1997 (Grand Prize for poster presentations)
American Water Works Association - Pacific Northwest Section, invited presenter – May 1995.
UMass Symposium, October 2004
Tailings and Mine Waste Conference, Fort Collins, Vail.
Mining Americas Summit, Denver, CO – 2009-2014.
Mining Summit, Hermosillo, MX – 2006.
Invited Delegate (nominee of the United States) for drafting the Uranium in Groundwater chapter for Quintennial Edition of the Redbook of the International Atomic Energy Agency, Vienna, Austria, June 2004.
Invited Delegate & Speaker, Mining and Insurance Conference, London England March 1-5, 2003.

VP-Mining and Metals Business; ARCADIS; Highlands Ranch, CO; 2001-2006

As Vice President of ARCADIS Mining and Metals Business Joe oversaw the implementation of all mining and metals projects, the conceptual design and technology implementation process, and implemented policies for ensuring customer satisfaction and quality assurance, and managed the intellectual property portfolio for mining cleanup technologies.

- Mining and Metals Business group won more than $100 million of contracted business, including work for Lockheed Martin (The Dalles Oregon aluminum smelter), Merck (Merced CA), PG&E Hinkley and Topock CA.
- Achieved attainment of global targets for cross-selling of metals immobilization services to markets in Europe and South America.
- Oversaw the implementation of large project contracts for sister companies in France, Belgium, Czech Republic, Chile, and Argentina.

CEO – Green World Science, Inc. Boise Idaho; 1996-2007
As CEO and Founder of Green World Science Joe built a business that conducted detoxification of cyanide and heavy metals in heap leach pads at more than 20 mines throughout North America, and treated large pit lakes to restore numeric standards for water quality and to attain ecological restoration of sustainable ecosystems. Projects conducted under Mr. Harrington's direction include:

- Kennecott Sweetwater Uranium pit lake restoration (1.3 billion gallons of water treated for uranium, selenium and nitrate contamination near Rawlins WY). The lake water chemistry has been stable without any maintenance since 1999.
- Teck Cominco heap leach pad detoxification at Buckhorn near Eureka NV (1999)
- Coeur Rochester Stage One heap leach pad detoxification (24.3 million tons)
- Gilt Edge Mine Superfund Site Anchor Hill Pit Lake detoxification and ecology restoration full scale pilot testing (2000 – 2006)
- Phelps Dodge Iron King Mine in-situ treatment to immobilize heavy metals in underground workings near Cottonwood Arizona (2001)
- San Luis Gold Mine in Costilla County Colorado pretreatment of the groundwater in the backfilled Pink Gneiss Pit to immobilize metals and reduce sulfate generation in partially submerged highly pyritic wastes (2000 – 2001)

CEO – Attero, Inc. Kellogg Idaho; 2005-Present
As founder and CEO, along with 9 key partners (a Northwest Power Council commissioner and member on the Idaho Governor's cabinet, a Smelterville city planner, a local architect, a former dean of the University of Idaho and others) who brought local connections and deep experience to the team, Joe led a team of professionals to re-create a master plan for the area surrounding the city of Kellogg, incorporating the non-populated areas of OU2, to create an alternative use for the Central Impoundment Area which our team has branded to be called the West Highlands. Mr. Harrington has invested years and nearly a million dollars into unlocking this potentially very valuable and strategic piece of property comprising more than 400 acres. Mr. Harrington led numerous public meetings, charrettes and other community outreach programs to craft a plan most acceptable to all stakeholders.

Attero is motivated by the principle that key to understanding this property is in understanding the operations of the Bunker Hill Mine and Smelter complex which operated from the 1880s to 1990s and which still contains millions of tons of strategic minerals and is the source of much environmental concern and yet hope for the economic future of the Silver Valley. This real estate development is expected to involve a decade's long process before it comes to fruition.

U.S. Patents
Joe Harrington is the inventor of the patented Green World Science™ Technology covered by US and international patents. These patents are for the immobilization of metals in soils, earth materials, affected groundwaters, treatment of pit lakes, and the prevention
of acid mine drainage from waste rock from underground mines. These patents include:
5,710,361: "In-Situ Treatment of Waste Stacks, Soils or Earth Materials to Immobilize Metals Contained Therein"
6,196,765: "Inhibiting Acid Mine Drainage by Displacing Oxygen in Rock Heap"
5,632,715: "In-Situ Immobilization of Metals In Waste Stacks and Waste Stack Affected Zones"
6,350,380: "In-Situ Immobilization of Metals In Density-Variant Water Bodies"
6,435,769: "Gas Phase Modifications" ... to inhibit acid rock drainage and to treat potentially mobile contaminants
7,011,756: "In-Situ Immobilization of Heavy Metals In Density-Variant Water Bodies" Pit Lakes and Underground Mine Pools

March 2014

CURRICULUM VITAE

Dale Hattis, Ph.D.

Research Professor
George Perkins Marsh Institute
Clark University, 950 Main Street, Worcester, Mass. 01610
(508) 751-4603; (781)-641-0305; FAX (508) 751-4600
Email: [redacted] DHattis@clarku.edu;

Education

1974	Ph.D. -- Genetics Stanford University Stanford, California
1967	B.A. -- Biochemistry University of California Berkeley, California

Professional Experience

9/98-Present	Research Professor George Perkins Marsh Institute, Clark University Worcester, Massachusetts
1/90-5/98	Research Associate Professor George Perkins Marsh Institute, Clark University Worcester, Massachusetts
7/81-9/93	Principal Research Associate Center for Technology, Policy and Industrial Development* Massachusetts Institute of Technology Cambridge, Massachusetts
9/86-12/86	Visiting Senior Lecturer Program in Social Ecology University of California at Irvine Irvine, California
4/75-7/81	Research Associate

* Formerly named the Center for Policy Alternatives

Center for Policy Alternatives
Massachusetts Institute of Technology
Cambridge, Massachusetts

1/75-4/75 Consultant
Center for Policy Alternatives
Massachusetts Institute of Technology
Cambridge, Massachusetts

12/73-11/74 Senior Research Associate
Complex Systems Institute
Case Western Reserve University
Cleveland, Ohio

6/70-9/70 Summer Intern, Food and Drug Administration Project
Center for Study of Responsive Law
Washington, D.C.

Summary of Experience and Training

Research: Methodology for quantitative health risk assessment for cancer and non-cancer health effects; Human interindividual variability in susceptibility to toxic effects; Pharmacokinetic and Monte Carlo simulation modeling; Implications of interindividual variability for population risk for both carcinogens and other toxic substances; Environmental/health, economic, and legal implications of alternative regulatory actions to control occupational exposure to noise, perchloroethylene, ethylene oxide, butadiene, glycol ethers, acrylamide, formaldehyde; setting priorities for control of toxic substances.

Consulting: Member, National Toxicology Program Board of Scientific Counselors; Member, Past member, Clean Air Scientific Advisory Committee (CASAC) Review Panel on Primary Standards for NOx and SOx, Member, Food Quality Protection Act Science Review Board. Past member, Environmental Health Committee, EPA Science Advisory Board (Ethylene Oxide Health Risk Assessment Review Panel). Review of proposed IRIS analysis for trichloropropane. Review of the benefits analysis for the EPA standard for arsenic in drinking water. Review of the EPA RfD for boron. Past memberships: Trichloroethylene Health Risk Assessment Synthesis and Characterization Review Panel, EPA peer review committee for PCB's, EPA peer review committee for Hazardous Air Pollutant emissions for electric generating plants; National Academy of Sciences/Institute of Medicine Committee on Evaluation of the Safety of Fishery Products; National Research Council Committee on Neurotoxicology and Models for Assessing Risk; U. S. Food and Drug Administration (Office of Device Evaluation)--mercury dental amalgams and polyurethane breast implants. OSHA—cancer risk assessment policy and risks from occupational noise exposures in the

construction industry; Natural Resources Defense Council and Occupational Safety and Health Administration, carcinogenesis by diesel exhaust; State of California (use of PBPK modeling and uncertainty analysis in risk assessment); International Life Sciences Institute--quantitative risk assessment for non-cancer effects; Risks of municipal water supply and wastewater treatment; Use of biomarkers in assessing causation of radiation-induced cancers; Monte Carlo simulation analysis of uncertainties in carcinogenic risks from diesel particulates in air and from different substances in drinking water; Risks of occupational noise exposures, Dose response relationships for acute toxicity from chlorine or ammonia.

Other: Distinguished Educator Award, Society for Risk Analysis; Lifetime Achievement Award, American Environmental Health and Science Foundation; Past Chair, Society for Risk Analysis Dose Response Specialty Group; Member, Past member, National Research Council Committee on Estimating the Health-Risk-Reduction Benefits of Proposed Air Pollution Regulations; Fellow, Society for Risk Analysis (awarded 12/00); Councilor, Society for Risk Analysis 12/97-12/00; Past member, Expert Panel on Acrylamide for the National Toxicology Program's Center for the Evaluation of Risks to Human Reproduction, Member, Editorial Board for Risk Analysis; Past member, National Research Council Subcommittee on Methyl Bromide, Member, Massachusetts Department of Environmental Protection/Department of Public Health Advisory Committee on Health Effects. Past President, New England Chapter of the Society for Risk Analysis.

Grants and Contracts Through Clark University

U. S. Environmental Protection Agency— Use of Biomarkers and Physiologically Based Pharmacokinetic (PBPK) Modeling in Risk Analysis for Developmental Effects of Chlorpyrifos--$677.5K—9/07-4/12

ICF, Inc Subcontract from U.S. Environmental Protection Agency—"Avenues To Interpret, Improve, And Extend Observations Of Biomarkers From High-Throughput Test Systems For Human Health Risk Assessment" --initial work to create a background paper, 22K, 6/11/10-10/31/11, subsequent work to assess uncertainties in dioxin risks, to create an example of the use of an intermediate biomarker (birth weight) to predict infant mortality and developmental effects, and to create and implement a value-of-information framework for Nexgen in vitro data. Work updated with a 9K increment through 10/12.

Battelle, Inc. Subcontract on Prime Contract from U.S. Environmental Protection Agency--Literature Review and Analysis to Support Development of a "Class" PBPK Model for Three "Super-Warfarin" Anti-coagulant Pesticides—23.5K 12/09-3/10.

U. S. Environmental Protection Agency—Interspecies Differences and Human Inter-Individual Variability in Tissue-Level Pharmacokinetic Parameters—68K—9/05-10/06.

U. S. Environmental Protection Agency—Age-Related Differences in Susceptibility to Carcinogenesis by Non-Mutagenic Mechanisms—98K 6/1/05-5/31/07.

U.S. Environmental Protection Agency— PBPK Model Development and Use in Support of the IRIS Assessment for Acrylamide—20k, 2/1/05-7/31/05.

U. S. Department of Energy—Low Dose Modeling of the Risks of Ionizing Radiation (Rob Goble, PI)—200K/year 9/1/03-8/31/05.

U.S. Environmental Protection Agency, Role of Dosimetric Scaling and Species Extrapolation in Evaluating risks Across Life Stages—90K 11/25/02-3/31/04.

U.S. Environmental Protection Agency, Age-Related Differences in Susceptibility to Carcinogenesis—100K 6/1/02-10/30/03.

Connecticut Department of Public Health (subcontract from an original contract from EPA), Pharmacokinetic Parameters—Adult Child Comparisons and Interindividual Variability—15 months, 70K, beginning 4/99; extended 11/00-8/1/02 for an additional 175K; new 2 year project—case studies in adult/child pharmacokinetic differences and implications of genetic differences in metabolism begun 8/1/02--154K.

U.S. Environmental Protection Agency, Interindividual Variability in Response to Particulates--3 year 190K project initiated by EPA personnel started 10/98 (Principal Investigator, with Rob Goble).

U.S. Environmental Protection Agency grant, “Human Variability in Parameters Potentially Related to Susceptibility for Noncancer Risks” 332K over 3 years, beginning 12/96.

State of California, Project on Electromagnetic Fields (Rob Goble, PI) 1 year effort beginning 12/97, 1.25 months of support.

State of Connecticut subcontract on work for the U.S. Environmental Protection Agency “Pharmacokinetic Modeling for Site-Acting Carcinogens” $52K, 11/15/96 - 11/14/97.

U.S. Environmental Protection Agency, via subcontract to Research Triangle Institute, “Considerations for Hazardous Waste Identification Rules--Development of Toxicity Values for Chemicals that Do Not Have Official RfD’s ” $10.8K, 12/96-9/97.

State of Connecticut subcontract on work for the U.S. Environmental Protection Agency “Pharmacokinetic Modeling for Site-Acting Carcinogens” $30K, 11/15/95 - 11/14/96

Ministry of Health, Canada, (Dale Hattis, Principal Investigator) “New Estimates Of Variability In Parameters Putatively Related To Individual Cancer Risk” $14K, 1/31 - 3/31/95

U.S. Environmental Protection Agency, Measures of Pollution Prevention (Sam Ratick, PI) 1994-95, 3 months of support.

Office of Technology Assessment (Rob Goble, PI) “Implementation of the Occupational Lead Standard the Secondary Lead Smelting Industry“ 20K 7/1/94 - 9/30/94.

U. S. Environmental Protection Agency, “Principles of Ecological Risk Analysis and Management as Applied to Near-Coastal Waters” (two year project, with involvement by Halina Brown, Sam Ratick, Rob Goble, Andrea Lemerise, and Arshad Bahl) 2nd Year FY 1992 and 1993--$230K.

U. S. Environmental Protection Agency, "Interspecies Projection of Carcinogenic Risks per Unit of Active Dose Delivered to Target Sites" (with involvement by Rob Goble, Halina Brown, and Joanne Shatkin) 3 Years in FY 1991, 1992, 1993--$200K.

Health and Welfare Ministry, Government of Canada, "Pharmacokinetic Modeling of Lead in Primates--Parameters of Interest for Adapting Human Models and Representing the Effects of Pregnancy," (7 Month effort with involvement by Mary Ballew) $25K, FY 1991.

Publications

1. Hattis, D, Whyatt, R, Goble, R, Ginsberg, G. 2013. Chlorpyrifos Doses to Women of the Columbia University Cohort and Neurodevelopmental Impairment—A Bayesian-Inspired Uncertainty Analysis and Risk Projection Reflecting Inputs from Different Sources of Information. Final Technical Report for EPA STAR Grant 83345301, "Use of Biomarkers and Physiologically Based Pharmacokinetic Modeling in Risk Analysis for Developmental Effects of Chlorpyrifos." February 2013. Submitted to Risk Analysis, responses to reviewers' comments in progress.

2. Zeise, L, Bois, FY, Chiu, WA, Hattis, D, Rusyn, I, Guytton KZ. 2013. Addressing human variability in next-generation human health risk assessments of environmental chemicals. Environmental Health Perspectives 121(1):23-31 (January, 2013).

3. Hattis, D. Comments on the Uncertainty and Variability Modeling Done for the FDA Fish Mercury Net Benefits Analysis. Final Report for USEPA Purchase Order Number EP-11-H-001567, September 2011.

4. Hattis, D. Analysis of Uncertainties in Modeling Dioxin Cancer Risks, Based on Analysis of Available Epidemiological Data From Steenland et al. (2001) and Cheng et al. (1996)—Effects of Different Pharmacokinetic Models for Reconstructing Internal and External Doses. Draft Final Report to EPA and ICF, June 17, 2011.

5. Roman H, Walsh TL, Coull BA, Dewailly E, Guallar E, Hattis D, Marien K, Schwartz J, Stern AH, Virtanen JK, Rice G. 2011. Evaluation of the cardiovascular effects of methylmercury exposures: Current evidence supports development of a dose-response function for regulatory benefits analysis. Environmental Health Perspect 119:607-614.

6. Hattis D. 2010 Intermediate effect biomarkers--alternatives to direct concentration-response data for regulatory benefits analyses. The Open Epidemiology Journal 2011 4:70-77. Available at http://benthamscience.com/open/toepij/openaccess2.htm [DOI: 10.2174/1874297101104011070]

7. Hattis D. Development of Molecular Pathology Hypotheses for Chronic Disease Processes Important to Public Health, Draft Background Paper for Discussion at a US Environmental Protection Agency Conference on Use of Nexgen Data in Risk Assessment, Final 10/4/10.

8. Hattis D., Lynch MK Alternatives to Pollutant-by-Pollutant Dose-Response Estimation for Air Toxics, report/conference paper by Abt Associates, Inc. to the U.S. Environmental Protection Agency under EP-W-05-022 WA 3-80, Final, March 2010.

9. Hattis D. and Hattis D. 2010, Literature Review and Analysis to Support Development of a "Class" PBPK Model for Three "Super-Warfarin" Anti-coagulants. Phase II Report from Clark University to Battelle Memorial Institute Under Task Order No. 600767-1, March 18, 2010.

10. Goble RL, Hattis D. Are Conundrums with Uncertainty Factors an Obstacle to Developing Probabilistic Interpretations of Non-Cancer Risks from Chemicals? Risk Analysis 30(3): 340-345, 2010

11. Thompson CM, Johns DO, Sonawane B, Barton HA, Hattis D, Tardif R, Krishnan K. Database for physiologically based pharmacokinetic (PBPK) modeling: physiological data for healthy and health-impaired elderly. J Toxicol Environ Health B Crit Rev. 12(1):1-24, 2009.

12. Hattis D. "The Role of Uncertainty and Susceptible Populations in Environmental Health Decision-Making." In Cable Y, Coussens C, and Quinn K, Rapporteurs, Environmental Health Sciences Decision Making—Risk Management, Evidence, and Ethics, Institute of Medicine, National Academy Press, Washington, D.C. pp. 24-27, 2009.

13. Hattis D. "High Throughput Testing—the NRC Vision, The Challenge of Modeling Dynamic Changes in Biological Systems, and the Reality of Low Throughput Environmental Health Decision-Making." Risk Analysis, 29:483-484, 2009.

14. Ginsberg G, Smolenski S, Neafsey P, Hattis D, Walker K Guyton KZ, Johns DO, Sonawane B. Analysis of the influence of genetic polymorphisms on inter-individual variability in xenobiotic metabolism for six enzyme systems. J Toxicol Environ Health, Part B, 12(5-6): 307-333, 2009.

15. Neafsey P, Ginsberg G, Hattis D, Sonawane B. Genetic Polymorphism in Cytochrome P450 2D6 (CYP2D6): Population Distribution of CYP2D6 Activity. J Toxicol Environ Health, Part B, 12(5-6): 334-361, 2009.

16. Neafsey P Ginsberg G, Hattis D, Johns DO, Guyton KZ, Sonawane B. Genetic Polymorphism in CYP2E1: Population Distribution of CYP2E1 Activity. J Toxicol Environ Health, Part B, 12(5-6): 362-388, 2009.

17. Ginsberg G, Smolenski, S Hattis D, Guyton KZ, Johns DO, Sonawane B. Genetic Polymorphism in Glutathione Transferases (GSTs): Population Distribution of GSTM1, T1, and P1 Conjugating Activity. . J Toxicol Environ Health, Part B, 12(5-6): 389-439, 2009.

18. Walker K, Ginsberg G, Hattis D, Johns DO, Guyton KZ, Sonawane B. Genetic polymorphism in N-Acetyltransferase (NAT: Population distribution of NAT1 and NAT2 activity. J Toxicol Environ Health, Part B, 12(5-6): 440-472, 2009.

19. Ginsberg G Neafsey P Hattis D, Guyton KZ, Johns D, Sonawane B. Genetic Polymorphism in Paraoxonase 1 (PON1): Population Distribution of PON1 Activity. J Toxicol Environ Health, Part B, 12(5-6): 473-507, 2009.

20. Hattis D, Chu M., Rahmioglu N., Goble R., Verma P, Hartman K, and Kozlak, M, A Preliminary Operational Classification System for Non-Mutagenic Modes of Action for Carcinogenesis. Critical Reviews in Toxicology, 13:1-42, 2008.

21. Hattis, D. Failure to Communicate--Comment: Regulator/Risk perspective on Burzala and Mazzuchi's Paper, In Cooke, R.M. (ed) (2009) *Uncertainty Modeling in Dose Response: Bench Testing Environmental Toxicity*, John Wiley and Sons, Inc., Hoboken, N.J., ISBN: 978-0-470-44750-5, pp.153-159.

22. White RH, Cote I, Zeise L, Fox M, Dominici F, Burke TA, White PD, Hattis DB, Samet JM. State-of-the-science workshop report: Issues and approaches in low dose dose-response extrapolation for environmental health risk assessment. Environmental Health Perspectives 117:283-287, 2009.

23. Woodruff TJ, Zeise L, Axelrad DA, Guyton KZ, Janssen S, Miller GG, Schwartz JM, Alexeef G, Anderson H, Birnbaum L, Bois F, Cogliano VJ, Crofton K, Euling SY, Foster PMD, Germolec DR, Gray E, Hattis DB, Kyle AD, Luebke RW, Luster MI, Portier C, Rice DC, Solomon G, Vandenberg J, Zoeller RT. Moving upstream: Evaluating adverse upstream endpoints for improved risk assessment and decision-making. Environmental Health Perspectives 116:1657-1675 2008.

24. Hattis, D. "Distributional Analyses for Children's Inhalation Risk Assessments." Journal of Toxicology and Environmental Health, 71(3):218-226, 2008.

25. Firestone M, Sonawane B, Barone S Jr, Salmon AG, Brown JP, Hattis D, Woodruff T. "Potential new approaches for children's inhalation risk assessment." Journal of Toxicology and Environmental Health, 71(3):208-217, 2008.

26. Hattis, D, M. Chu, Rahmioglu, N, Verma, P., Hartman, K., Kozlak, M, and Goble, R. "Age-Related differences in Susceptibility to Carcinogenesis III. Tentative Classification for Non-Genetic Modes of Action, and Use for Analysis of Age-Related Susceptibility Differences. ." Final Report by Clark University to the U.S. Environmental Protection Agency Under Purchase Order No. EP05W002147, Part II. December, 2007.

27. Hattis, D, Rahmioglu, N, Verma, P., Hartman, K., Kozlak, M, and Goble, R. "A Preliminary Operational Classification System for Non-Mutagenic Modes of Action for Carcinogenesis." Final Report by Clark

University to the U.S. Environmental Protection Agency Under Purchase Order No. EP05W002147, Part I. October, 2007.

28. Hattis, D. and Goble, R. L. "Uncertainties in Risk Assessment for Carcinogenesis: A Road Map Toward Practical Improvements" White paper for the U.S. Environmental Protection Agency, May, 2007.

29. Walker, K., Hattis, D., Russ, A., Sonawane, B., and Ginsberg, G., "Approaches to Acrylamide Physiologically Based Toxicokinetic Modeling for Exploring Child-Adult Dosimetry Differences." Journal of Toxicology and Environmental Health, 70(24):2033-2055, December, 2007.

30. Ginsberg, G. L., Hattis, D. B., Zoeller, R. T., and Rice, D. C. "Evaluation of the USEPA/OSWER Preliminary Remediation Goal (PRG) for Perchlorate in Groundwater: Focus on Exposure to Nursing Infants." Environmental Health Perspectives, 115:361-369, 2007.

31. Rhomberg, L.R., Baetcke, K., Blancato, J., Bus, J., Cohen, S., Conolly, R., Dixit, R., Doe, J., Ekelman, K,., Fenner-Crisp, P. Harvey, P., Hattis, D., Jacobs, A., Jacobson-Kram, D. Lewandowski, T., Liteplo, R., Pelkonen, O., Rice, J., Somers, D., Turturro, A., West, W., and Olin, S. "Issues in the Design and Interpretation of Chronic Toxicity and Carcinogenicity Studies in Rodents: Approaches to Dose Selection. Crit. Rev. Toxicol. 37(9):729-837, 2007.

32. Hattis, D. and Lynch, M. K. "Empirically Observed Distributions of Pharmacokinetic and Pharmacodynamic Variability in Humans—Implications for the Derivation of Single Point Component Uncertainty Factors Providing Equivalent Protection as Existing RfDs." In Toxicokinetics in Risk Assessment, J. C. Lipscomb and E. V. Ohanian, eds., Informa Healthcare USA, Inc., 2007, pp. 69-93.

33. Ginsberg, G., Hattis, D., and Sonawane, B. "Developmental Aspects of Children's Pharmacokinetics." In Toxicokinetics in Risk Assessment, J. C. Lipscomb and E. V. Ohanian, eds., Informa Healthcare USA, Inc., 2007, pp. 231-249.

34. Sexton, K., and Hattis. D. "Assessing Cumulative Health Risks from Exposure to Environmental Mixtures—Three Fundamental Questions. Environmental Health Perspectives115(5):825-32, 2007.

35. Hattis, D. and Lynch, M. "Interspecies Differences and Human Interindividual Variability in Tissue-Level Pharmacokinetic Parameters. Task 3—Final Report—Description and Analyses of the Data Bases." Report by Clark University to the U.S. Environmental Protection Agency Under Purchase Order No. EP05W002147, October 2006.

36. Hattis, D. "Adjusting Cancer Potencies for Early Life Exposures--Which Carcinogens? How Much Adjustment and For Which Ages? Risk Policy Report, Vol. 13(2), pp. 14-16, January 10, 2006.

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EDUCATION

Rutgers University School of Law, Newark, NJ 2004-2007
Juris Doctor

Harvard School of Public Health, Boston, MA 1989-1991
Postdoctoral Research Fellow: Department of Environmental Health – Inhalation Toxicology, Harvard School of Public Health

Meharry Medical College, Nashville, TN 1984-1988
Doctor of Philosophy, Biomedical Sciences/Nutritional Biochemistry

Jackson State University, Jackson, MS 1979-1983
Bachelor of Science, Biology

EMPLOYMENT HISTORY

WE ACT for Environmental Justice – Washington, DC
Director of Federal Policy – March 2016 – Present
Lobbying/advocating on environmental issues in the Administration and/or Congress, creating and establishing relationships with new constituencies, potential partners, and diverse coalitions, building and maintaining a relationship with minority Congressional Caucuses on Capitol Hill, crafting comments, participating in public hearings on federal policy initiatives, leading new research and policy papers on key topics, speaking to diverse sets of audiences about key environmental justice concerns and needs, both NGOs and GOs, on federal policy. This position also serves as the Facilitator for the Environmental Justice Leadership Forum on Climate Change. In this position, I prepare comments and recommendations on policies and guidance on climate change which may affect environmental justice communities. I also participate in the Title VI Advocacy Working Group and the EJ-Title VI Group, evaluating data and develop recommendations around actions related to Title VI Civil Rights Act complaints from communities. Most recently, I was invited to serve as a member of the U.S. Environmental Protection Agency's Clean Air Act Advisory Committee and its Chemical Data Reporting Inorganic Byproducts Negotiated Rulemaking Committee. Monitor and provide input in actions related to implementation of the revised Toxic Substances Control Act.

Earthjustice – Tallahassee Office
Project Attorney – June 2014-December 2015
Engaged in all motion practice and pre-trial and trial preparation activities. Conducted in-depth legal research and assist in the identification of a cache of communities impacted by environmental contamination who may need legal assistance from Earthjustice. Developed and strengthen relationships with communities and other stakeholders involved in protecting the health of communities near environmentally contaminated areas. Prepared comments on Title V permitting activities and EJ 2020 draft guidance.

Agency for Toxic Substances and Disease Registry, Atlanta, GA
Division of Health Assessment and Consultation, Superfund Site Assessment Branch
Supervisory Environmental Health Scientist/Toxicologist, Section Chief – August 1991 – December 1997
Served as an environmental toxicologist and Section Chief, supervised health scientists and toxicologists in the preparation of health assessments for National Priority List ("NPL" or "Superfund") sites and analyzed environmental data from NPL sites, including risk analysis data provided by the EPA. Visited NPL sites in various states, the U.S. Virgin Islands and Puerto Rico, to meet with community representatives, and local, state and federal agency representatives to determine possible community exposures and potential exposure pathways – ingestion, dermal and inhalation - to environmental contaminants. Responded to requests for information from congressional staff and other agency leaders, and addressed Freedom of Information Act (FOIA) requests. Prepared reports and compliance recommendations for Superfund sites.

Agency for Toxic Substances and Disease Registry, Atlanta, GA, *Division of Health Assessment and Consultation, Coordinator, Community Involvement Section - September 1997 – December 1997*
Worked with various communities to develop relationships for the agency and to identify community leaders for outreach activities. This was a secondary assignment and did not include salary change.

Agency for Toxic Substances and Disease Registry, Atlanta, GA
Division of Health Assessment and Consultation, Coordinator, Public Health Assessment Enhancement Initiative, March 1995 - January 1998
Worked with various EPA regional offices participating in a pilot project designed to increase community involvement at Superfund sites. This was a temporary assignment, so there was no change in salary.

U.S. Environmental Protection Agency (EPA), Office of Environmental Justice
Senior Policy Analyst for NEJAC through Tetra Tech EM Consulting Inc. March - September 2000
Drafted a synopsis report of stakeholder representatives' views regarding community-based health research models. The synopsis was based on the May 2000 National Environmental Justice Advisory Council meeting and on interviews with representatives from community groups, local and state health agencies, federal agencies and academia.

Teaching Experience

George Washington University Milken School of Public Health
Professorial Lecturer in Environmental and Occupational Health – Spring 2017
Teaching an online section of the course *Environmental Health in a Sustainable World* with Professor Peter LaPuma and Professor George Gray

American University, Washington College of Law
Adjunct Associate Professor - Summer 2017 - 2020
Currently teaching Appellate Advocacy

Florida A&M University's Institute of Public Health
Adjunct Professor – September 2015 – December 2015, January 2016 – April 2016

Taught Environmental Risk Communication and assisted in the development of student research projects for the Master of Public Health program in the Institute of Public Health.

Florida A&M University's School of the Environment
Adjunct Professor –September 2014 - December 2014, January 2015 – April 2015
Taught a variety of environmental courses including: Environmental Risk Communication and Environmental Policy and Risk Management for undergraduate and graduate level students.

Seton Hall Law School
Visiting Professor – Pre-Legal Program – June – July 2008, 2009, 2010
This program was for high school students interested in pursuing a legal career after college. I taught two courses over the summer – Introduction to Intellectual Property and Environmental Law, which included information on the Clean Water Act, the Clean Air Act, the Civil Rights Act, CERCLA and SARA.

Associate Professor, Environmental and Occupational Health, College of Pharmacy and Pharmaceutical Sciences, Institute of Public Health, Florida A&M University, Tallahassee, Florida – *January 1998 – July 2004*
Assisted in the development of the Master of Public Health Program in the Institute of Public Health, and designed the Environmental and Occupational Health Track. Advised and directed the research of students and taught a variety of environmental courses. Worked closely with communities impacted by environmental contamination - particularly environmental justice communities - providing education and information, including legal information, environmental information, and health information when possible. Worked with the Florida Department of Health and the Florida Department of Environmental Protection in Rule Development, where I conducted a risk assessment and analysis of their proposed rule for fire prevention at facilities that transport, store and dispose of hazardous chemical waste (TSD facilities), and participated in the Notice of Proposed Rulemaking activities and the Notice of Rule Workshops in Florida.

Research area of interest – Environmental Toxicology, Inhalation Toxicology, Environmental Justice, Use of Title VI and the Civil Rights Act in Environmental Justice Issues, Public Health Law

Legal Experience

Becker Meisel LLC
Associate - Litigation and Bankruptcy -October 2012- April 2014
Conducted in-depth legal research on complex litigation, labor and employment issues, and intellectual property matters. Areas include the New Jersey Insurance Fraud Prevention Act, ERISA discovery and litigation issues, the Uniform Partnership Act, arbitration and scope of negotiation matters and the relationship between land installment contracts and mortgages, trademark infringement and copyright protection. Prepared motions for all stages of litigation – in both state and district courts- including motions to dismiss, scope of negotiations for Public Employee Relations Committee ("PERC") briefs in labor and employment issues, motions for summary judgment, and motions for protective orders. Drafted discovery demands and responses to interrogatories, document demands, and requests for admissions. Attended and participate in

court appearances and conferences, including pretrial motion practice, initial scheduling conferences, oral argument, and case management conferences. Prepared deposition questions and attend depositions. Reviewed insurance policy booklets for use in litigation defense matters. Provided advice and counseling to clients on a regular basis and engage in mediation and settlement discussions and negotiations with opposing counsel. Managed a large caseload and provide case reports and updates using Excel software.

Honorable Joseph A. Greenaway, Jr. – United States Court of Appeals for the Third Circuit
Judicial Law Clerk - March 2010 – September 2012
Read and analyzed briefs and supplemental documentation to identify the issues of a case, and prepare detailed draft precedential and not-precedential judicial opinions. Conducted in depth legal research, and prepared bench memoranda for a variety cases with a number of complex issues - including but not limited to - cases brought under Title VI of the Civil Rights Act, criminal appeals, Chapter 13 bankruptcy filing and child pornography. Advised the Judge on courses of action related to both petitions for rehearing and rehearing *en banc.* Prepared briefing books and conducted in-depth briefings for Judge Greenaway for sittings of the U.S. Court of Appeals for the Third Circuit.

Gibbons, PC - Private Law Firm
Associate in Intellectual Property Group – September 2008 – March 2010
Prepared motions and briefs related to intellectual property (patent infringement) issues. Conducted due diligence for potential patent issues, served on the Gibbons Diversity Committee and conducted research on legal issues for briefs.

Honorable Michael A. Shipp – United States District Court for the District of New Jersey, Federal Magistrate Judge
Judicial Law Clerk October 2007 – September 2008
Assisted in preparing for and conducting preliminary proceedings in civil and criminal cases, including initial scheduling, status, settlement and final pretrial conferences. Conducted legal research and writing and drafted proposed opinions and memoranda on various non-dispositive motions, including motions to compel, motions to amend the pleadings and motions to quash subpoenas. Prepared comprehensive report and recommendations ("R&R") regarding dispositive motions, as requested by the District Court. Handled and responded to emergent disputes.

Honorable Joseph A. Greenaway, Jr. – United States District Court for the District of New Jersey, Federal District Court Judge
Teaching Assistant – January – May 2007
Assisted in the preparation of materials, including handouts and court cases for the Supreme Court course entitled "The Supreme Court, Its Genesis and Progression." Prepared and provided the assigned weekly reading assignments, participated in class discussions and conducted other duties as assigned.

VOLUNTEER ACTIVITIES

- Delta Sigma Theta, Inc. Public Service Sorority
- Leadership Tallahassee Class XIX – Leadership Development and Community

Trusteeship Program
- Volunteer Lawyers for Justice
- Volunteer Lawyers for the Arts

PROFESSIONAL ACTIVITIES

Bar Admissions

- State of New Jersey
- State of Pennsylvania
- United States District Court for the District of New Jersey
- United States Court of Appeals for the Third Circuit

Professional

- US EPA Clean Air Act Advisory Committee – February 2017 – February 2019
- EPA CDR Byproducts - Inorganic Byproducts Negotiated Rulemaking Committee
- American Public Health Association Environment Section (current)
- Board Member, Endangered Species Coalition (current)
- Past ABA Pro Bono & Public Interest Litigation Committee, Case and Legislative Updates Editor for '*Spreading Justice'* Newsletter and Web Publication
- American Bar Association
- American Public Health Association
- Past Barrister - Honorable John C. Lifland American Inn of Court

HONORS AND AWARDS

2014 New Jersey Rising Stars Selection – New Jersey Super Lawyers
Editor-in-Chief – Rutgers Race and the Law Review - 2006-2007
Note - "Eminent Domain and Compensation: From the Trail of Tears to Hurricane Katrina - Is It Just?" Spring 2007
Editor – Rutgers Race and the Law Review – 2005-2006
Garden State Bar Association Scholarship – Rutgers University School of Law - 2006-2007
David Haber Scholarship – Rutgers University School of Law - 2006-2007
Nancy B. Stiles Endowed Scholarship – Rutgers University School of Law - 2005-2006
Teacher of the Year – Public Health - 2003, 1999
Outstanding Community Service Award – Florida A&M University, College of Pharmacy and Pharmaceutical Sciences - 2001
Deans Appreciation Award – Florida A&M University, College of Pharmacy and Pharmaceutical Sciences – 2000

CURRICULUM VITAE

MICHAEL E. HONEYCUTT, Ph.D.

Texas Commission on Environmental Quality
PO Box 13087 MC-168
Austin, TX 78711-3087
Phone: 512-239-1793
Fax: 512-239-1794
Email: Michael.Honeycutt@tceq.texas.gov
Webpage : http://www.tceq.texas.gov/toxicology

PERSONAL

[redacted]

EDUCATION

Ph.D.	May, 1993	Major: Toxicology	Northeast Louisiana University, Monroe, LA, 71209
B.S.	May, 1988	Major: Toxicology	Northeast Louisiana University, Monroe, LA, 71209

PROFESSIONAL WORK EXPERIENCE

Feb, 2009 – Present Director, Toxicology Division, Chief Engineer's Office, Texas Commission on Environmental Quality, PO Box 13087, Austin, Texas 78711.

Sept, 2003 – Feb, 2009 Manager, Toxicology Section, Chief Engineer's Office, Texas Commission on Environmental Quality, PO Box 13087, Austin, Texas 78711.

Mar, 2001 – Sept, 2003 Senior Toxicologist & Team Leader, Multi-Media Issues & Assessments Team II, Office of Permitting, Remediation & Registration, Texas Commission on Environmental Quality, PO Box 13087, Austin, Texas 78711.

Oct, 1997 - Mar, 2001 Senior Toxicologist, Toxicology & Risk Assessment Section,

Office of Permitting, Texas Natural Resource Conservation Commission, PO Box 13087, Austin, Texas 78711.

Sept, 1996 - Oct, 1997 Toxicologist, Toxicology & Risk Assessment Section, Chief Engineer's Office, Office of the Executive Director, Texas Natural Resource Conservation Commission, PO Box 13087, Austin, Texas 78711.

Manage a group of 13 toxicologists who provide toxicology and risk assessment technical support to other programs in the TCEQ. Led the development of inhalation toxicology benchmark values (Effects Screening Levels) for the State of Texas and oversaw external peer review by Toxicology Excellence for Risk Assessment (http://www.tera.org/peer/TCEQ/TCEQWelcome.htm). Serve as agency spokesperson for high-profile environmental issues, having conducted over 1000 television and newspaper interviews. Serve as a technical expert in the areas of chemical pharmacology, pharmacokinetics and toxicology, and human health and environmental risk assessment. Oversee and perform human health risk assessments of the direct inhalation of both carcinogenic and non-carcinogenic compounds from air emissions of permitted sources in the State of Texas. Oversee the review analytical testing methodologies and data for acceptability in human health risk assessments either performed by or submitted to the TCEQ. Oversee and perform the development of oral toxicity benchmark values. Oversee the critical review of baseline and remedial risk assessments submitted to the TCEQ in support of closure activities at Resource Conservation and Recovery Act (RCRA) and state Superfund sites. Oversee and perform the evaluation of health risks from contaminants in drinking water. Oversee and perform the conduct of critical toxicological health effects reviews of the results of ambient monitoring (soil, water and air) projects. Testify at public hearings, provide expert advice and affidavits for legal proceedings as an expert witness in general toxicology and participate in agency public meetings. Coordinate and/or provide funding for health effects research projects conducted either in-house or by collaborating researchers. Interpret toxicological data to determine health risks from public exposure to specific contaminants. Serve as a resource witness for the TCEQ on bills during state legislative hearings. Communicate health risks to upper management, public, legislators, and media.

Jul, 1993 - Sept, 1996 GS-0401-12 Research Biologist, Fate and Effects Branch, Environmental Processes and Effects Division, Environmental Laboratory, US Army Corps of Engineers Waterways Experiment Station, Vicksburg, Mississippi, 39180.

Primary emphasis was research toward the development and validation of *in vitro*

biomarker assays utilizing genetically-engineered cell cultures that could be used to assess the presence of genotoxic contaminants and military unique contaminants in sediments and soils, and the implementation of these assays as regulatory screening tools. Conducted research designed to investigate the influence of sediment organic carbon content on the distribution of neutral organic compounds among water, fish and sediment and to develop kinetic models that describe this interaction. Conducted research to assess bioavailability of military unique contaminants and their breakdown products to terrestrial organisms to appraise effectiveness of bioremediation techniques. Other research interests include the application of novel sample preparation techniques and analytical methods to sediments and soils.

Provided technical support in experimental design and data interpretation and analysis for project managers and other scientists in the Corps of Engineers. Provided technical support to engineers, scientists, and project managers throughout the Department of Defense concerning potential ecological and human health effects from conventional and military unique contaminants. Supervised junior scientists, technicians and contract students in the performance of laboratory research. Adjunct faculty member of Jackson State University, Jackson, MS, and served on thesis committee for M.S. candidate.

Apr, 1993 - Jul, 1993 Scientist, AScI Corporation, 1720 Clay Street, Suite 3, Vicksburg, Mississippi, 39180.

Worked as a contractor for the US Army Corps of Engineers Waterways Experiment Station in same capacity as Research Biologist position.

PROFESSIONAL SOCIETIES

Society of Toxicology, Full Member

COMMITTEE, BOARD, AND PANEL MEMBERSHIPS

Alliance for Risk Assessment Steering Committee, 2007-present
Texas A&M University Superfund Basic Research Program External Advisory Board, 2004 – present
Adjunct Associate Professor, Texas A&M University School of Rural Public Health, Department of Environmental and Occupational Health, 2005 - present
Strategic Health Effects Review Panel II, Houston Endowment, 2005-2006
Forging Partnerships on Emerging Contaminants: A Forum for State and Federal Stakeholders, November 2-3, 2005, San Diego, CA

Strategic Health Effects Review Panel, Texas Council on Environmental Technology, 2002
Environmental Toxicology & Chemistry Editorial Board, 1998-2000

GRANTS AWARDED AND COLLABORATIVE RESEARCH PROJECTS

Hillcrest Community Environmental Investigation – A two-year environmental investigation (ambient air, soil, groundwater) designed in collaboration with the local community to address their concerns from neighboring petroleum refineries, ongoing (http://www.tceq.texas.gov/toxicology/research/hillcrest.html)

Midlothian, TX Ambient Air Collection & Analytical Chemical Analysis – A year-long ambient air monitoring study designed in collaboration with the local community to address their concerns from neighboring point sources, July 2010 (http://www.tceq.texas.gov/toxicology/research/midlothian.html).

Houston Exposure to Air Toxics (HEATS) – Collaborative research effort between TCEQ ($400K from USEPA grant awarded to TCEQ, $476K from TCEQ), the Mickey Leland National Urban Air Toxics Research Center ($275K), the Texas Environmental Research Consortium ($50K), and East Harris County Manufacturer's Association ($50K); Research grant awarded to University of Texas School of Public Health for 2 year air toxics personal exposure study; October 2009 (http://www.tceq.texas.gov/toxicology/research/heats.html).

Houston Air Toxics Biomarkers of Exposure Study – Research grant ($100K) awarded to Texas A&M University, December 2009 (http://www.tceq.texas.gov/toxicology/research/hatbes.html).

Air Pollutant Concentrations Near Texas Roadways – Research grant ($250K) awarded to University of Texas Department of Chemical Engineering to measure both gas and particle phase contaminants from four sites, with each site representing a different traffic scenario; August 2007 (http://www.tceq.texas.gov/toxicology/research/roadways.html).

WORKSHOP ORGANIZING COMMITTEES

Served on Steering Committee for Dose-Response Approaches for Nuclear Receptor-Mediated Modes of Action, September 27-29, 2010, National Institutes of Environmental Health Sciences, Research Triangle Park, NC.

Serve on Steering Committee for the Alliance for Risk Assessment's Beyond Science and Decisions: From Issue Identification to Dose-Response Assessment Workshop Series Workshop I, March 16-18, 2010, Austin, Texas

Workshop II, October 11-13, 2010, Crystal City, Virginia
Workshop III, May 4-6, 2011, Falls Church, Virginia

SELECTED INVITED PRESENTATIONS

Mickey Leland National Urban Air Toxics Research Center Symposium - Credible Science to Address Texan's Health: Exposure to Air Toxics, November 16, 2010, "Panel Discussion: Science to Address Air Toxics Regulatory Needs", Dallas, TX

Houston PBS Television Community Forum on Energy, the Environment, and the Economy: Making it Work, October 26, 2010, "Air Quality Panel", Houston, TX.

Central Texas Chapter of the Air & Waste Management Association, monthly meeting, August 19, 2010, "Ozone and Health Effects: The Big Picture", Austin, TX.

Alliance for Risk Assessment's Beyond Science and Decisions: From Issue Identification to Dose-Response Assessment Workshop Series, Workshop I, March 16-18, 2010, "Managing Risks at the State Level", Austin, Texas

Center for Advancing Risk Assessment Science and Policy Framing Workshop, December 15 - 16, 2009, "Managing Risks at the State Level", Research Triangle Park, NC.

Dialogues in Democracy: Life, Liberty and the Pursuit of Happiness, November 3 and November 14, 2007. Houston and National Public Broadcasting System Specials. Invited Panelist. Houston, TX.

11th Annual Air & Waste Management Association Hot Air Topics Conference, October 29, 2007, "Proactive Responses to Area Benzene and Other Monitored Air Toxics", Houston, TX.

USEPA Air Toxics Workshop, December 13, 2006, "Efforts to Reduce Air Toxics in Houston", Durham, NC.

Annual Baker Botts Environmental Seminar, February 9, 2006, "Air Toxics – TCEQ's Effects Screening Levels", Houston, TX.

Society of Environmental Journalism, Houston Ship Channel Tour, September 29, 2005, Houston, TX.

MD Anderson Cancer Center Community Forum on Barton Springs, March 27, 2003, Austin,

TX.

South Central Society of Environmental Toxicology & Chemistry Regional Meeting, June 7, 2002, "Perchlorate: The Texas Regulatory Perspective" Texas Tech University, Lubbock, TX.

National Water Research Institute Workshop on Life Cycle Environmental Impacts Associated with Different Fuel Options, February 15-17, 2002, Pomona, CA.

Clearwater Underground Water Conservation District, November 27, 2001, "MTBE and Perchlorate" Temple, TX.

MD Anderson Cancer Center Undergraduate Seminar Series, August 11, 1999 - "Careers in Toxicology" Smithville, TX.

Texas Region Perchlorate Conference, May 20-21, 1999 - "Texas Provisional Cleanup Levels", Temple, TX.

TNRCC Professional Engineer Exam Preparatory Class, March 27, 1999 - "Toxicology and Risk Assessment", Austin, TX.

TNRCC Air Permitting Seminar, March 24, 1999 - "Effects Review, Modeling, and Baseline Concentrations", Houston, TX.

TNRCC Environmental Trade Fair, May 5, 1998 - "Toxicology Review of Air Permit Applications", Austin, TX.

1998 National Association of Environmental Law Societies Conference, April 2-5, 1998 - Environmental Expert Panel, Houston, TX.

RESEARCH ARTICLES

Grant, R.L., J. Haney, A. Curry, and M. Honeycutt. 2010. "A Chronic Reference Value for 1,3-Butadiene based on an Updated Noncancer Toxicity Assessment" *Journal of Toxicology and Environmental Health, Part B* 13:6, 460-475.

Grant, R.L., J. Haney, A. Curry, and M. Honeycutt. 2009. "Development of a Unit Risk Factor for 1,3-Butadiene Based on an Updated Carcinogenic Toxicity Assessment" *Risk Analysis* 29(12): 1726-1742.

Grant, R.L., B.J. Kadlubar, N.K. Erraguntla, and M. Honeycutt. 2007. "Evaluation of Acute

Inhalation Toxicity for Chemicals with Limited Toxicity Information." *Regulatory Toxicology and Pharmacology*.47: 261-273.

Grant, R.L., V. Leopold, D. McCant, and M. Honeycutt. 2007. "Spatial and Temporal Trend Evaluation of Ambient Concentrations of 1,3-Butadiene and Chloroprene in Texas." *Chemico-Biological Interactions* 166: 44-51.

Hofelt, C.S., M. Honeycutt, J.T. McCoy, and L.C. Haws. 2001. "Development of a Metabolism Factor for Polycyclic Aromatic Hydrocarbons for use in Multipathway Risk Assessments of Hazardous Waste Combustion Facilities." *Regulatory Toxicology and Pharmacology* 33(1): 60-65.

Jarvis, A.S., V.A. McFarland, and M.E. Honeycutt. 1998. "Assessment of the Effectiveness of Composting for the Reduction of Toxicity and Mutagenicity of Explosive-Contaminated Soil." *Ecotoxicology and Environmental Safety* 39: 131-135.

Honeycutt, M.E., A.S. Jarvis, and V.A. McFarland. 1996. "Cytotoxicity and Mutagenicity of 2,4,6-Trinitrotoluene (TNT) and its Metabolites." *Ecotoxicology and Environmental Safety* 35(3): 282-287.

Jarvis, A.S., M.E. Honeycutt, V.A. McFarland, A.A. Bulich, and H.C. Bounds. 1996. "A Comparison of the Ames Assay and Mutatox™ in Assessing the Mutagenic Potential of Contaminated Dredged Sediment." *Ecotoxicology and Environmental Safety* 33:193-200.

Honeycutt, M.E., D.S. Roane, and B.L. Roberts. 1995. "Cadmium Disposition in the Earthworm, *Eisenia fetida*." *Ecotoxicology and Environmental Safety*, 30:143-150.

Honeycutt, M.E., V.A. McFarland, and D.D. McCant. 1995. "Comparison of Three Lipid Extraction Methods for Fish." *Bulletin of Environmental Contamination and Toxicology*, 55(3):469-472.

Honeycutt, M.E. and B.L. Roberts. 1995. "Assessment of DNA Strand Breaks in the Earthworm, *Eisenia fetida*, as a Bioindicator of Soil Contamination." *Environmental Sciences*, 3(4):199-207.

Honeycutt, M.E. and B.L. Roberts. 1994. "*In Vivo* Metabolism of Aldrin by the Earthworm, *Eisenia fetida*." *Environmental Sciences* 2(4):217-225.

LETTERS TO THE EDITOR

Honeycutt, M.E. 2011. "Hexavalent Chromium in Texas Drinking Water." *Toxicological Sciences* 119(2): 423-424.

EXPERT WITNESSING

The Matter Against William Rea, SOAH Docket #503-07-4032
The Matter Against Alfred Raymond Johnson, SOAH Docket #503-08-0531

AWARDS

TCEQ Manager of the Year - 2008
Chief Engineer's Office Manager of the Year - 2008
Chief Engineer's Office Employee of the Quarter - July-September, 2008
USACE Forth Worth District Recognition Award - Bosque/Leon Rivers Perchlorate Study Team, 2004
TNRCC Team of the Year – TXI Hazardous Waste Incineration and Air Permit Team, 2000

JOB-RELATED TRAINING

Governor's Executive Development Program – Class XXVIII, Lyndon B. Johnson School of Public Affairs, University of Texas, 2009
Senior Management Development Program, Lyndon B. Johnson School of Public Affairs, University of Texas, 2007
Covey Four Roles of Leadership, TCEQ, 2006
Management Development Program, Lyndon B. Johnson School of Public Affairs, University of Texas, 2005
Effective Media Communications, The Ammerman Experience, 2005
Water Quality Standards Academy, NETO, 2001.
Selecting and Fitting Probability Distributions for Probabilistic Risk Assessment, PRA Consulting, 2001.
Risk Assessment Guidance for Superfund, USEPA, 1997.
Method Detection Limits: Measurement Theory, TNRCC, 1997.
Physiologically-Based Pharmacokinetic/Pharmacodynamic Modeling, Colorado State University, 1996.
Leadership Education and Development (LEAD), US Army Command and General Staff College, 1996.
Supervisor Development Course, Army Institute for Professional Development, 1996.
Environmental Applications of GC/MS, Indiana University, 1995.
Water Quality Standards Academy, US EPA, 1995.
Cell Culture Workshop, Biotechnology Training Institute, 1994.

Darryl B. Hood, Ph.D., Division of Environmental Health Sciences, College of Public Health
Department of Neuroscience, College of Medicine, The Ohio State University

Brief Summary of Administrative, Research and Leadership Accomplishments

ADMINISTRATIVE

Division of Environmental Health Sciences, College of Public Health, The Ohio State University
(Sept. 2013-Present)

- Supported Interim Chair (who was also Sr. Associate Dean for Academic Affairs) by providing administrative leadership in curriculum development and diversity for a successful *Council on Education in Public Health* re-accreditation and enhanced vision for the continued growth of environmental health within communities in Ohio, globally and within the College of Public Health and other colleges at The Ohio State University.
- The Division of Environmental Health Sciences consist of ten faculty, mostly junior faculty whose research areas include cancer risk and prevention, health effects of air and water pollution, food safety, data analytics, occupational health and environmental neurotoxicology.
- In this role, Dr. Hood was responsible for the development and implementation of a distance learning* environmental health science core curricula for the public health programs leading to PhD, MS, MPH and BSPH degrees. During the most recent Autumn and Spring semesters, he also served as Course Coordinator for the following courses*:
- PUBHEHS 6300 Environmental Issues in Health Administration*
- PUBHLTH 3191/ 3191E/ 3999 Undergraduate CAPSTONE*
- PUBHEHS 5315 Principles of Toxicology
- PUBHEHS 6310 Principles of Environmental Health Sciences*
- PUBHEHS 7899 Seminar Environmental Health
- PUBHLTH 4998 Research in Public Health
- PUBHEHS 8899 Doctoral Seminar in Environmental Health
- PUBHLTH 7998 Culminating Project Public Health
- PUBHLTH 7999 Thesis Research in Pub Health
- PUBHLTH 8998 Pre-candidacy in Res Pub Health
- PUBHEHS 8999 Dissertation Research in Public Health

Administrative visionary for a paradigm shift to *Environmental Public Health* (Aug. 2014-Present) Dr. Hood is one of the three principal architects of the innovative and novel *Public Health Exposome* framework that is purported to be a paradigm interrogate hypotheses focused on determining if there are associations between the built, natural and social environment and disparate health outcomes observed vulnerable populations. This framework provides strong data, analytics and *cumulative risk scores* that will be useful for the development of improved, tailored strategies aimed at reducing the incidence of disparate health outcomes in high-risk populations thereby informing public health policy to mitigate the identified environmental risk factors.

Co-Chair -Data Analytics Discovery Theme, College of Public Health (Sept. 2013-Present)

- In public health at The Ohio State University, it is apparent that solving today's complex challenges requires data analytics and public-private collaborations like never before. Therefore, the institution developed the Translational Data Analytics Institute to provide accessibility and integration of data analytics assets and expertise thereby transforming how the university works with industry and community partners to co-develop big data solutions and prepare tomorrow's data analytics workforce.

- In this role, Dr. Hood served to strengthen existing partnerships between the College of Public Health with several colleges, including Engineering; Food, Agriculture & Environmental Sciences; Medicine; and Veterinary Medicine, as well as OSU Env. Sci. Network & Global Water Institute.

Principal Investigator, Enhancing Environmental Enterprises via e-Equity, Education & Empowerment. (Nov. 2013-Present)

- As an OSU outreach and engagement research leader, Dr. Hood worked with the South Side Health Advisory Committee of Columbus Public Health, to develop a community-academic-local state agency partnership that has emerged as a model for other municipalities.
- Together with the aforementioned agencies, Dr. Hood led the planning, design, testing and analysis of residential soils in a high-risk community in South Columbus, OH. The preliminary study was conducted over a 17-month period and demonstrated that community led coalitions in collaboration with academia and local public health policy-making officials can effectively address the environmental concerns of residents in high-risk communities. This provided preliminary data for and served as a segue for the current A1 R01 grant proposal entitled *"Enhancing Environmental Enterprises via e-Equity, Education and Empowerment."*

Director, Initiative for Environmental Health Disparities & Medicine (Aug. 2004-Aug. 2013)

- This initiative at Meharry Medical College encouraged the application of multidisciplinary system science approaches and methodologies to address the disparities that exist in communities of color with respect to the disproportionate effects resulting from exposure to environmental pollutants.
- The Initiative proactively identified solutions to public health and health care systems problems to contribute knowledge for enhancing effective decision-making around the development of and prioritization of policies, interventions, and programs for stakeholders.

LEADERSHIP

Co-principal architect of the innovative *Public Health Exposome* framework. (2013-Present) This life-course framework is the basis of the science of health disparities and is used to interrogate hypotheses focused on determining if there are associations between the built, natural and social environment and disparate health outcomes observed vulnerable populations. The framework provides strong data, analytics and *cumulative risk scores* that will be useful for the development of improved, tailored strategies aimed at reducing the incidence of disparate health outcomes in high-risk populations thereby informing public health policy to mitigate the identified environmental risk factors.

Provost's University-Wide Committee on Diversity, The Ohio State University (Nov. 2014-Present)

- Throughout Dr. Hood's career he has been instrumental in establishing and participating in several programs designed to increase the pool of well-trained investigators, especially in minority groups where the proportion of environmental health scientists is strikingly lower than the percentage of minority U.S. citizens.
- Through the Discovery Themes initiative at The Ohio State University, he has provided leadership in addressing the complex issues of the 21st century. He has been a pioneer in demonstrating how to build multidisciplinary, multicultural teams of experts because of a unique perspective on diversity as to how it helps us ask better questions, find the most

innovative solutions, and opens doors to new ways of thinking.

Principal Investigator, Enhancing Environmental Enterprises via e-Equity, Education & Empowerment. (Nov. 2013-Present)

- As an OSU outreach and engagement research leader, Dr. Hood worked with the South Side Health Advisory Committee of Columbus Public Health, to develop a community-academic-local state agency partnership that has emerged as a model for other municipalities.
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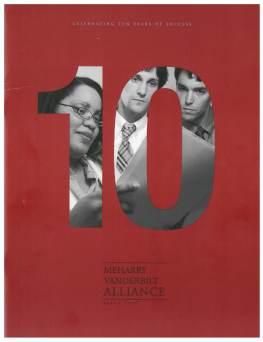
Director, Initiative for Environmental Health Disparities & Medicine (Aug. 2004-Aug. 2013)

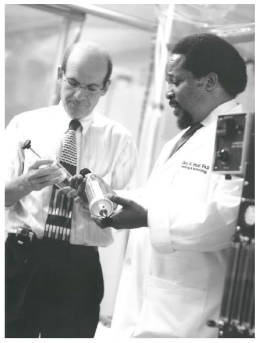
- This initiative at Meharry Medical College encouraged the application of multidisciplinary system science approaches and methodologies to address the disparities that exist in communities of color with respect to the disproportionate effects resulting from exposure to environmental pollutants.
- The Initiative proactively identified solutions to public health and health care systems problems to contribute knowledge for enhancing effective decision-making around the development of and prioritization of policies, interventions, and programs for stakeholders.

RESEARCH

Institutional Research Programs (1994-2017)

Below: ARCH Investigators Michael Aschner (VMC) and Darryl B. Hood (MMC) in the Inhalation Toxicology Lab at Meharry Medical College, working on a grant involving environmental neurotoxicants.





- As Director of the Environmental Health and Toxicology Unit at Meharry Medical College in 1994, Dr. Hood wrote and received an ATSDR grant entitled "Acute and Sub-chronic Toxicity of Benzo(a)pyrene and Fluoranthene in F-344 rats." The Minority Health Professions Foundation and Agency funded this grant for $2.4 million dollars for Toxic Substances and Disease Registry.
- The project generated considerable interest from environmental regulatory agencies and was successful on competitive renewal in 1997 on a grant entitled "Multigenerational Effects of Inhaled B(a)P on Development" that was funded through 2002 at the level of $2.1 million dollars. These two projects served as the impetus for the development of his independent, investigator-initiated research program where the long-term goal was to determine the operative mechanisms contributing to exposure-induced dysregulation of central nervous system development to impact learning and memory processes.
- Dr. Hood wrote a grant entitled "Environmental Ah Receptor Agonists and Cognition" that was funded for $1.9 million dollars from 2001 through 2006 that was a part of a larger $5.4 million dollar Meharry Medical College initiative sponsored by the Office of Minority Health via the Specialized Neuroscience Research Program (SNRP) from the National Institute of Neurological Diseases and Stroke (NINDS).
- From 2006-2011, Dr. Hood led a $4.8 million dollar initiative that has come to be known as the most successful Minority S11 NIEHS-sponsored initiative referred to as *"Advanced Research Cooperation in Environmental Health* (ARCH) Program.

- The specific title of the program project activity was "*Mechanisms of Polycyclic Aromatic Hydrocarbon Toxicity.*" The research conducted under this consortium with Vanderbilt University School of Medicine was, in part, the result of a memorandum of understanding that was signed by the leaders of Meharry Medical College and Vanderbilt University Medical Center to form the Meharry-Vanderbilt Alliance.
- This construct served as the template that **Dr. Elias A. Zerhouni (former Director of NIH)** used as the viable, futuristic model for the development of effective scientist-to-scientist interactions between research-intensive universities and historically black colleges and universities.
- **More recently, Dr. Hood as a principal architect has put forth the innovative and novel *Public Health Exposome* framework** to be used to interrogate hypotheses focused on determining if there are associations between the built, natural and social environment and disparate health outcomes observed vulnerable populations. This framework provides strong data, analytics and *cumulative risk scores* that will be useful for the development of improved, tailored strategies aimed at reducing the incidence of disparate health outcomes in high-risk populations thereby informing public health policy to mitigate against environmental risk factors.

OVERALL ADMINISTRATIVE AND LEADERSHIP IMPACT IN NEUROTOXICOLOGY, ENVIRONMENTAL PUBLIC HEALTH AND DIVERSITY

- **The collective body of mechanistic neurotoxicology studies conducted under Dr. Hood's leadership** in the various units, centers and laboratories has confirmed the notion that common environmental contaminants can have a direct, negative impact on the regulated developmental expression of key regulators of glutamatergic signaling with associated negative impacts on behavioral learning and memory processes.
- **From a cumulative risk-assessment perspective, data from Dr. Hood's laboratory was heavily referenced in the most recent USEPA integrated risk information system (IRIS)** assessment for developmental and reproductive toxicity of benzo(a)pyrene . The public policy changes that will be forthcoming from this IRIS assessment will lower the oral (RfD) and inhalation (RfC) reference dose and concentration for benzo(a)pyrene used in animal studies.
- **The seminal studies conducted in Dr. Hood's laboratory over the past decade have resulted in public policy changes** and have contributed to the databases that will serve to addresses why low income and medically underserved populations that live, work, and play in close proximity to industrial emissions have disparate health outcomes.
- **Dr. Hood is one of the three principal architects of the innovative and novel *Public Health Exposome* framework** used to interrogate hypotheses focused on determining if there are associations between the built, natural and social environment and disparate health outcomes observed vulnerable populations. This framework provides strong data, analytics and *cumulative risk scores* that will be useful for the development of improved, tailored strategies aimed at reducing the incidence of disparate health outcomes in high-risk populations thereby informing public health policy to mitigate the identified environmental risk factors.
- **Development of *in utero* benzo(a)pyrene experimental exposure model systems.** Beginning in 2000, Dr. Hood led a team that designed, fabricated and tested nose-only inhalation experimental model systems for application to understand the effects *in utero* exposure to benzo(a)pyrene during critical windows of central nervous system development. These studies uncovered novel information on the health consequences associated with *in utero* exposures to benzo(a)pyene [B(a)P] during critical developmental stages.
- **First time demonstration of the functional impact of *in utero* benzo(a)pyrene exposure on later-life behavioral phenotypes** mediated by maturing glutamatergic cortical circuits. From our work, the field has learned that postnatal brain development requires input from the environment in order to induce the release of glutamate and thereby promote critical aspects of synaptic maturation. His most

impactful paper to date demonstrated that it is during the process of postnatal synaptogenesis (P1-P14) that the effects of *in utero* B(a)P exposure on neural activity alter the temporal expression of glutamatergic genes.

- **Achieving workforce diversity, citizen science and environmental justice.** Dr. Hood's career has been guided by the release of two documents that have since had a dramatic impact on the scientific research and training agenda in the United States. The first document was the U.S. Surgeon General's Report Healthy People 2000, and the second was the National Science and Technology Council's (NSTC) report entitled Ensuring a Strong U.S. Scientific, Technical and Engineering Workforce in the 21st Century. These documents were directed at meeting the challenges of increasing the pool of well-trained Ph.D. students in minority groups where the proportion is strikingly lower than the percentage of U.S. citizens. The NIH programs having the most substantive impact on his undergraduate and graduate journeys were the Minority Biomedical Research Support and Minority Access to Research Careers-Honors Undergraduate Research Training Programs. See: Townsel JG, Hood DB. A challenge for the new millennium: eliminating health disparities and achieving educational and workforce diversity. *Environ Health Perspect*. 2000 Nov; 108 (11): A492-3.

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CURRICULUM VITAE

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Education:

Ph.D.	Hydrology	Stanford University	1970
M.S.C.E.	Hydrology	Drexel University	1967
B.S.C.E.		Drexel University	1965

Employment:

2008-	University Distinguished Professor, Craig E. Philip Professor of Engineering, Professor of Civil and Environmental Engineering, Professor of Earth and Environmental Sciences, Director, Vanderbilt Institute for Energy and Environment, Vanderbilt University
2014-2015	Chairman, Department of Earth and Environmental Sciences, Vanderbilt University
2012-2013	Chairman, Department of Civil and Environmental Engineering, Vanderbilt University
1991-2008	Ernest H. Ern Professor of Environmental Sciences University of Virginia
2006-2007	Visiting Professor, University of California at Berkeley
2002-2006	Associate Dean for the Sciences, University of Virginia
2002-2003	Interim Chairman, Department of Statistics, University of Virginia
1997-1998	Visiting Scientist, Institute for Alpine and Arctic Research, University of Colorado
1990-1991	Visiting Scientist, U.S. Geological Survey and, concurrently, Visiting Professor, Stanford University
1984-1990	Professor of Environmental Sciences, University of Virginia
1984-1985	Honorary Visiting Professor of Environmental Sciences, University of Lancaster, Lancaster, U.K.
1975-1984	Associate Professor (Department Chairman 1979 - 1984) University of Virginia
1977-1978	Visiting Fellow, Centre for Resource and Environmental Studies, The Australian National University
1970-1975	Assistant Professor University of Virginia

Current Research Interests

My work has centered on the coupling of field observations with mathematical modelling. My current work is broadly interdisciplinary, focusing on coupled natural-human systems. Water resources are under pressure from many human activities, from climate change to urban development. I and my colleagues and students collect and analyze data to understand how climate, groundwater, surface water, and human abstraction of water interact in complex ways. Current projects include work in Sri Lanka on adaptation to drought and in the United States on how cities evolve water conservation practices.

Society Memberships

American Geophysical Union
Geological Society of America
American Women in Science
American Water Resources Association

Editorships

Associate Editor, *Water Resources Research*, 1982 - 1984
North American Editor, *J. Hydrological Processes*, 1985-1992
Editor, *Water Resources Research,* January 1993 - January 1997
Editor for Hydrology, Encyclopedia of Inland Waters, Elsevier, 2006-2009
Advisory Editor, Oxford Online Bibliography, 2013-2017

Awards and Honors

Virginia Chapter of Sigma Xi, President's and Visitors' Prize, 1986.
Robert E. Horton Award, Hydrology Section, American Geophysical Union, 1993.
Elected Fellow, American Geophysical Union, 1994.
Appointed to five-year Visiting Professorship at University of Reading, UK, 1995
1995 Biennial Medal for Natural Systems, Modelling and Simulation Soc. of Australia
1995 John Wesley Powell Award for Citizen's Achievement (US Geological Survey)
Elected Fellow, Association for Women in Science, 1996
Elected to membership in the National Academy of Engineering, February 1996
1999 Excellence in Geophysical Education Award, American Geophysical Union
Bownocker Lecturer, Ohio State University, May 1999
ISI Highly Cited Researcher, 2000 (http://authors.isihighlycited.com/)
National Associate of the National Academies in recognition of extraordinary service, 2001
Langbein Lecturer, American Geophysical Union, 2002
Elected Fellow, Geological Society of America, 2005
Virginia Outstanding Scientist, 2007
William Kaula Award, American Geophysical Union, 2010
Harvie Branscomb Distinguished Professor Award, Vanderbilt University, 2017

Selected Service on National Committees

Chair, National Academies, Committee on Future Water Resource Needs for the Nation: Water Science and Research at the U.S. Geological Survey, 2017-
Chair, Geosciences Policy Committee, American Geosciences Institute, 2011-present

Member, Nominations Committee, Geological Society of America, 2015-present
Chair, Delaware EPSCoR External Advisory Board, 2014-present.
Chair, National Academies, Water Science and Technology Board, 2013-2017.
Chair, External Assessment Committee for the Earth and Environmental Sciences Area at Lawrence Berkeley national Lab, 2017.
Chair, Advisory Committee for the Geosciences Directorate, NSF, 2014- 2016
Member, Geology and Public Policy Committee, Geological Society of America, 2013-2016
Chair, Health Effects Institute, Special Scientific Committee on Unconventional Oil and Gas Development, 2014-2015.
Chair, Review Committee for the Environmental Sciences Division, Lawrence Berkeley National Laboratory, 2013 and 2014.
Chair, National Research Council, Committee on Development of Unconventional Hydrocarbon Resources in the Appalachian Basin: A Workshop, 2013
Chair, Committee of Visitors for Geosciences Education, NSF, May 2013
Member, Advisory Board for the School of Earth Sciences, Stanford, 2004-2014
Member, Nuclear Waste Technical Review Board (Presidential Appointment) 2004-2012
Chair, National Research Council, Committee on Opportunities and Challenges in Hydrologic Sciences, 2010-2012
Member, National Research Council, Committee on Analysis of Cancer Risks in Populations near Nuclear Facilities: Phase I, 2010-2012.
Member of Steering Committee on Ecosystems Services, National Academies Keck Futures Initiative, 2011.
Chair, Committee of Visitors for the Surface Earth Processes Section, NSF, June 2011
Member, National Research Council, Report Review Committee, 2004-2009
Member, National Research Council, Science Panel, America's Climate Choices, 2009-2010.
Chair, National Research Council, Board on Earth Sciences and Resources, 2002-2009.
Chair, National Research Council, Committee to Review the NSF "WATERS" Plan, 2007-09
President, Hydrology Section, American Geophysical Union, 2006-2008
Chair, Science Advisory Committee, Berkeley Water Center, 2006-2008
Member, Adaptation for Climate-Sensitive Ecosystems and Resources Advisory Committee (USEPA), 2007-2008.
Member, National Research Council, Committee on Hydrologic Sciences, Aug 2000 – 2008
Member, Hydrology Section Executive Committee, American Geophysical Union, 1994-2009.
Chair, Publications Committee, American Geophys. Union, 2000-04 (member, 1998-2004).
Chair, Advisory Committee on Nuclear Waste, Nuclear Regulatory Commission, 2001-2003 (Vice-chairman, 1997-2000; member 1996-2004)
Member, Board of Trustees, Virginia Museum of Natural History, 2000-2005
Chair, National Research Council, Committee on the Review of EarthScope Science Objectives and Implementation Planning, 2001.
Chair, Water-Cycle Initiative Study Group (Interagency committee appointed to create a science plan for a major federal research initiative on the water cycle), 1999-2001.
Chair, National Research Council Commission on Geosciences, Environment, and Resources 1996-2000, (member from 1994)
Chair, Board of Journal Editors, American Geophysical Union, 1998-2000.
Chair, National Research Council Committee on Water Resources Research (WSTB), 1991-1997 (member from 1990)

Co-convenor AGU Chapman Conference on Hydrochemical Response of Forested Catchments, Bar Harbor, Maine, September 1989
Co-convenor Gordon Conference on Hydrological/Geochemical/Biological Interactions in Forested Catchments, Plymouth, NH, 1-5 July 1991.

Publications, George M. Hornberger

1. Books

Remson, Irwin, G.M. Hornberger and F.J. Molz. 1971. ***Numerical Methods in Subsurface Hydrology***. John Wiley and Sons.

Hornberger, G.M., Raffensperger, J.P., Wiberg, P.L., and K. Eshleman. 1998. ***Elements of Physical Hydrology***. Johns Hopkins Press.

Hornberger, G.M. and P.L. Wiberg 2006. ***Numerical Methods in the Hydrological Sciences***, American Geophysical Union, Special Publications Series, Volume 57, 233 pages, e-book, 2006, ISBN 0-87590-725-1, AGU SP057F251

Hornberger, G.M., Wiberg, P.L., Raffensperger, J.P., and P. D'Odorico. 2014. ***Elements of Physical Hydrology, 2nd Edition***. Johns Hopkins Press. https://jhupbooks.press.jhu.edu/content/elements-physical-hydrology-0

Book Chapters

Kelly, M. G., G. M. Hornberger and B. J. Cosby. 1977. Automated measurement of river productivity for eutrophication monitoring. In ***Biological Monitoring of Water and Effluent Quality***. Cairns, Dickson and Wesetlake (eds.). ***ASTM Spec. Tech. Pub. 607***.

Hornberger, G. M. and R. C. Spear 1983. An approach to the analysis of behavior and sensitivity in environmental systems. In: Beck, M. B. and G. van Stratten (eds.), ***Uncertainty and Forecasting of Water Quality***, Springer-Verlag, pp 101-116.

Cosby,B.J., Hornberger,G.M. and R.F.Wright 1989. A regional model of surface water acidification in southern Norway: calibration and validation using survey data. In: Kämäri,J. (ed.) ***Environmental Impact Models to Assess Regional Acidification*** Reidel.

Hornberger,G.M., Cosby,B.J. and R.F.Wright 1989. A regional model of surface water acidification in southern Norway: uncertainty in long-term hindcasts and forecasts. In: Kämäri,J. (ed.) ***Environmental Impact Models to Assess Regional Acidification*** Reidel.

Saiers, J.E., J.F. McCarthy, P.M. Jardine, L. Liang, and G.M. Hornberger. 1993. Transport of amorphous TiO2 through homogeneous and structurally heterogeneous porous media. (In) J.F. McCarthy and F.J. Wobber (eds.) ***Concepts for manipulating groundwater colloids for environmental restoration***, Chelsea MI: Lewis Publishers Inc. pp. 309-313.

Hornberger, G.M. 2002. Forecasting the Impact of Atmospheric Acidic Deposition on the Chemical Composition of Stream Water and Soil Water. In: Beck, M.B. (ed.) ***Environmental Foresight and Models: A Manifesto***, Chapter 8, pp 131-145. Elsevier Science.

Hornberger, G.M. and John Stetkar 2008. Abrupt Climate Change. In: Garrick, B. J. ***Quantifying and Controlling Catastrophic Risks***, Academic Press.

Hornberger, G.M. 2009. Hydrologic context for modelling nutrient cycles. **In** Anderssen, R.S., R.D. Braddock and L.T.H. Newham (eds) ***18th World IMACS Congress and MODSIM09 International Congress on Modelling and Simulation***. Modelling and Simulation Society of Australia and New Zealand and International Association for Mathematics and Computers in Simulation, July 2009, pp. 37-43. ISBN: 978-0-9758400-7-8.

Burger, J., Gochfeld, M., Powers, C.W., Kosson, D. and G. Hornberger 2010. Biological Assessment for Radionuclide Levels in Biota and Ecosystems. In: Harris, A.M. (ed.) ***Clean Energy: Resources, Production and Developments***, Nova Science Publishers.

Thabrew, L., Ries, R., and Hornberger, G.M. 2012. Transdisciplinary framework for trans-boundary watershed management, Chapter 13, pp 271-290. In C. N. Madu and C. Kuei (eds.), ***Handbook of Sustainable Management***, Imperial College Press**.** (ISBN 978-981-4354-81-3)

2. Refereed Articles

Remson, Irwin, A.A. Fungaroli and G.M. Hornberger. 1967. Numerical analysis of soil-moisture systems. ***Proc. ASCE, J. Irr. and Drainage Div., IR3:*** 153-166.

Hornberger, G.M., Irwin Remson and A.A. Fungaroli. 1969. Numerical studies of a composite soil moisture ground water system. ***Water Resources Research 5***: 797-802.

Hornberger, G.M., and Irwin Remson. 1970. A moving boundary model of a one-dimensional saturated-unsaturated transient porous flow system. ***Water Resources Research 6***: 898-905.

Hornberger, G. M., Janet Ebert and Irwin Remson. 1970 Numerical solution of the Boussinesq equation for aquifer-stream interaction. ***Water Resources Research 6***: 601-608.

Hornberger, G. M., and M. G. Kelly. 1972. The determination of primary production in a stream using an exact solution to the oxygen balance equation. ***Water Resources Bulletin 8***: 795-801.

Molz, F. J. and G. M. Hornberger. 1973. Water transport through plant tissues in the presence of a diffusable solute. ***Soil Sci. Soc. of Am. Proc. 37***: 833-837.

Kelly, M. G., G. M. Hornberger and B. J. Cosby. 1974. Continuous automated measurement of rates of photosynthesis and respiration in an undisturbed river community. ***Limnol. Oceanogr. 19***: 305-312.

Kelly, M. G. , M. R. Church and G. M. Hornberger. 1974. A solution of the inorganic carbon mass balance equation and its relation to algal growth rates***. Water Resources Research 10***: 493-497.

Hornberger, G. M. and M. G. Kelly. 1974. A new method for estimating productivity in standing waters using free oxygen measurements. ***Water Resources Bulletin 10***: 265-271.

Hornberger, G. M. and M. G. Kelly. 1975. Estimation of atmospheric reaeration in a river using productivity analysis. ***J. Environ. Eng. Div., ASCE 101***: 729-739.

Tett, P. B., M. G. Kelly and G. M. Hornberger. 1975. A method for the spectrophotometric measurement of benthic microalgal chlorophyll-a and pheophytin-a using several extractions with methanol. ***Limnol. Oceanogr. 20***: 887-896.

Hornberger, G. M., M. G. Kelly and R. M. Eller. 1976. The relationship between light and photosynthesis rate in a river community and implications for water quality modeling***. Wat. Resour. Res. 12***: 723-730.

Lederman, T. C., G. M. Hornberger and M. G. Kelly. 1976. The calibration of a phytoplankton growth model using batch culture data. ***J. Wat., Air and Soil Pollut. 5***: 431-442.

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Gallegos, C. L., G. M. Hornberger and M. G. Kelly. 1977. A model of river benthic algal photosynthesis in response to rapid changes in light. ***Limnol. Oceanogr. 22***: 226-233.

Tett, P., C. Gallegos, M. G. Kelly, G. M. Hornberger and B. J. Cosby. 1978. Relationships amongst substrate flow and microalgal pigment density, in the Mechums River, Virginia. ***Limnol. Oceanogr. 23***: 785-797.

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Bolyard, T., G. M. Hornberger, R. Dolan and B. P. Hayden. 1979. Fresh water reserves of Mid-Atlantic coast barrier islands. ***Environ. Geol. 3***: 1-11.

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Hornberger, G. M. and R. C. Spear. 1980. Eutrophication in Peel Inlet: I. The problem defining behavior and a mathematical model for the phosphorous scenario. ***Water Research 14***: 29-42.

Spear, R. C. and G. M. Hornberger. 1980. Eutrophication in Peel Inlet: II. Identification of critical uncertainties via generalized sensitivity analysis. ***Water Research 14***: 43-49.

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Cosby, B. J., Hornberger, G. M. and M. G. Kelly 1984. Identification of light-photosysthesis models for aquatic systems. II. Application to a macrophyte dominated stream. ***Ecol. Modelling 23***:25-51.

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Cosby, B. J., Wright, R. F., Hornberger, G. M. and J. N. Galloway 1985. Modeling the effects of acid deposition: estimation of long-term water quality responses in a small forested catchment. ***Wat. Resour. Res., 21***:1591-1601.

Hornberger, G. M., Beven, K. J., Cosby, B. J. and D. E. Sappington 1985. Shenandoah Watershed Study: Calibration of a topography-based, variable contributing area model to a small forested catchment. ***Wat. Resour. Res.,21***:1841-1850.

Hornberger, G. M. and B. J. Cosby 1985. Selection of parameter values in environmental models using sparse data: a case study. ***Applied Math. and Comp.,17***:335-355.

Cosby, B. J., Hornberger, G. M., Galloway, J. N. and R. F. Wright 1985. Freshwater acidification from atmospheric deposition of sulfuric acid: a quantitative model. ***Env. Sci. and Tech., 19***:1145-1149.

Cosby, B. J., Hornberger, G. M., Wright, R. F., and J. N. Galloway 1986. Modeling the effects of acid deposition: control of long-term sulfate dynamics by soil sufate adsorption. ***Water Resour. Res.,22***: 1283-1291.

Hornberger, G. M., Cosby, B. J. and J. N. Galloway 1986. Modeling the effects of acid deposition: uncertainty and spatial variability in estimation of long-term responses of regions to atmospheric deposition of sulfate. ***Water Resour. Res.,22***:1293-1302.

Whitehead, P. G., Williams, R. J. and G. M. Hornberger 1986. On the identification of pollutant or tracer sources using dispersion theory. ***J. Hydrol.,84***: 273-286.

Wright, R. F., Cosby B. J., Hornberger, G. M. and J. N. Galloway 1986. Interpretation of paleolimnological reconstructions using the MAGIC model of soil and water acidification. ***Water, Air and Soil Pollut. 30***:367-380.

Cosby, B. J., Hornberger, G. M., Wright, R. F., Rastetter, E. B. and J. N. Galloway 1986. Estimating catchment water quality response to acid deposition using mathematical models of soil ion exchange processes. ***Geoderma, 38***:77-95.

Herlihy, A. T., Mills, A. M., Hornberger, G. M. and A. E. Bruckner 1987. The importance of sediment sulfate reduction to the sulfate budget of an impoundment receiving acid mine drainage. ***Water Resour. Res., 23***:287:292.

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Wolock,D.M., Hornberger,G.M., Beven,K.J. and W.G. Campbell 1989. The relationship of catchment topography and soil hydraulic characteristics to lake alkalinity in the Northeastern United States. ***Water Resources Research 25***:829-837.

Webb,J.R., Cosby,B.J., Galloway,J.N. and G.M.Hornberger 1989. Acidification of native brook trout streams in Virginia. ***Water Resour. Res. 25***:1367-1377.

Bruckner,A.M., Hornberger,G.M. and A.L.Mills 1989. Field measurement and associated controlling factors for groundwater seepage in a Piedmont impoundment***. Hydrological Processes 3***:223-235.

Ryan,P.F., Hornberger,G.M., Cosby,B.J., Galloway,J.N., Webb,J.R. and E.B.Rastetter 1989. Seasonal and interannual variation in the chemical composition of streamwater in two catchments impacted by acidic deposition. ***Water Resour. Res. 25***:2091-2099.

Hornberger,G.M., Cosby,B.J. and R.F.Wright 1989. Historical reconstructions and future forecasts of regional surface water acidification in southernmost Norway***. Water Resour.Res. 25***:2009-2018.

Hornberger, G.M. 1989. Modelling complex natural processes with small observation sets: the case of acidification of surface waters in North America and Europe***. Mathematics and Computers in Simulation 32***: 39-47.

Wolock, D.M., Hornberger G.M. and T. Musgrove 1990. Topographic controls on episodic streamwater acidification in Wales. ***J.Hydrology 115***:243-259.

Hornberger, G.M., Beven, K.J. and P.F. Germann 1990. Inferences about solute transport in macroporous forest soils from time series models. ***Geoderma 46***:249-262.

Scholl, M.A., Mills, A.L., Herman, J.S., and G.M. Hornberger 1990. The influence of mineralogy and solution chemistry on the attachment of bacteria to representative aquifer materials. ***J. Contaminant Hydrol. 6***:321-326.

Wolock, D.M. and G.M.Hornberger 1991. Direct and indirect effects of atmospheric CO_2 levels on catchment hydrological response. ***J. of Forecasting 10***:105-116.

Hornberger, G.M., Germann, P.G., and K.J. Beven 1991. Throughflow and solute transport in an isolated sloping soil block in a forested catchment. ***J. Hydrology 124***:81-99.

Castro, N.M. and G.M. Hornberger 1991. Surface-subsurface water interactions in an alluviated mountain stream channel. ***Water Resour. Res. 27***:1613-1621.

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Jakeman, A.J., Hornberger, G.M., Littlewood, I.G., Whitehead, P.G., Harvey, J.W., and K.E. Bencala 1992. A systematic approach to modelling the dynamic linkage of climate, physical catchment descriptors and hydrologic response components. ***Mathematics and Computers in Simulation 33***:359-366.

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Rice, KR, Deviney, FA Jr., Hornberger, GM and James R. Webb, 2006. Predicting the Vulnerability of Streams to Episodic Acidification and Potential Effects on Aquatic Biota in Shenandoah National Park, Virginia. *USGS Scientific Investigations Report 2005–5259* (http://pubs.usgs.gov/sir/2005/5259/)
Hubbard, S., and G. Hornberger 2006. Introduction to special section on Hydrologic Synthesis, *Water Resour. Res., 42*: W03S01, doi:10.1029/2005WR004815
Hinze W. J. and G. M. Hornberger 2006. Uncertainty Underground: Yucca Mountain and the Nation's High-Level Nuclear Waste (Book review). *Eos Trans. AGU 87*(47), 529.

Hornberger, G. M., and J. E. Lawrence. 2007. Hydrology of Big Meadows, Shenandoah National Park, Virginia: Assessment of a Sensitive Wetland System in the Blue Ridge Mountains. Technical Report NPS/NER/NRTR—2007/093. National Park Service. Philadelphia, PA.

Mills, A.L., Hornberger, G.M., and J.S. Herman 2008. Sediments in Low Relief Coastal Streams as Effective Filters of Agricultural Nitrate. *Proceedings 2008 Summer Specialty Conference*: *Riparian Ecosystems and Buffers - Working at the Water's Edge*, American Wat. Resources Assn., 6pp. (http://www.awra.org/proceedings/0806pro_toc.html)

Herman J. S., Mills A. L., Hornberger G. M., Sofranko A. C., and M. S. Olson 2008. Quantifying Nitrate Flux during Storm Events. *World Environmental and Water Resources Congress*, ASCE Conf. Proc. http://dx.doi.org/10.1061/40976(316)432.

Thabrew, L, Ewing, A, Abkowitz, A, and GM Hornberger 2011. Indirect Emissions Reduction Opportunities for Freight Transportation Carriers. *Proceedings of LCA XI*, Chicago, October 2011. lcacenter.org/lcaxi/final/418.pdf

Crane, J. and G. Hornberger. 2012. Gases and grasses: Sampling nitrous oxide emissions from urban and suburban lawns. In: E. D. Loucks, editor, *Proc. World Environmental and Water Resources Congress 2012: Crossing Boundaries*. ASCE, Reston, VA. P. 1882-1888. http://ascelibrary.org/doi/abs/10.1061/9780784412312.188

Walter R. Hufford, P.G.
(cell)
(home)

Mr. Hufford is a leader who brings 29 years of experience in the energy and environmental industry (including upstream - exploration & production, midstream- pipeline compliance and downstream - refining & marketing). In his current position as Manager – US Regulatory Affairs for Talisman Energy USA, a multinational oil and gas company, he has delivered functional regulatory consistency across the organization. He provides internal technical and regulatory HSSE support to the organization in the firm's North America operations, and serves on committees with API/ANGA dealing with federal agencies (EPA, DOI) on rulemaking involving the industry. He also has participated in state regulatory committees that address new legislation and rule making. Mr. Hufford has succeeded in advocating regulatory policy changes in support of company and industry environmental initiatives, delivering positive results with strong strategic planning, team building, tactical execution, and communication skills.

His prior experience includes management of multimillion dollar environmental liabilities including; nuclear fabrication and disposal sites, chemical plants, petrochemical facilities, manufacturing locations and refinery projects. His direct management of over $200 Million in remediation expenditures resulted in a multi-year safe delivery of documented cost savings/cost avoidance opportunities exceeding $300 Million. He served in a leadership role during the 2010 Macondo Deep Water Horizon gulf response coordinating and advising as a company liaison with the US Coast Guard, USEPA, Departments of Homeland Security & Interior, US Fish and Wildlife as well as multiple state regulatory agencies. He also served as a spokesperson for BP's Community outreach effort conducting "town hall meetings" for residents and elected officials along the Gulf Coast.

Additional technical experience includes offshore shelf and deepwater exploration and delineation projects. His work includes initial drilling of deep water prospects in Green and Mississippi Canyon and shelf prospects in South Timbalier and High Island.

Mr. Hufford has extensive background on technical management of complex litigation cases involving contamination and other tort damages. His leadership of legal and technical expert teams provided detailed case analysis that delivered consistent favorable outcomes for the firm. He routinely served as a company witness for BP and Atlantic Richfield and negotiated Consent Orders with the US Department of Justice and state Attorneys General. He successfully

negotiated protracted and complex settlements related to claims against the company with third party litigants.

Externally, Mr. Hufford has represented his firm at various functions including; the 2004 G-8 Summit held in Sea Isle, Georgia, elected official events at foreign embassies, and numerous state functions. He has also served on the Board of Directors for several non-governmental organizations.

Employment History

2010 – Present Talisman Energy USA – Warrendale, Pennsylvania
Manager – US Regulatory Affairs – Developed US regulatory program to deliver operational assurance for compliance. Support HSSE functional and operational teams in delivery of safe operations through supply chain management. Advise senior leadership of strategic regulatory evolution with tactical option analysis to manage rule changes. Collaborate for global policy and procedure consistency where appropriate. Conduct special projects in support of mergers and acquisitions (M&A), litigation, and divestitures.

1989 – 2010 BP/Atlantic Richfield Company – Towson, Maryland
Macondo Incident Response Team – 2010
Construction/Decommissioning Manager – 2009 - 2010
Environmental Business Manager – 2002 – 2009
Environmental Liability Project Manager 1992 - 2002
Environmental Engineer 1989 – 1992

1988 – 1989 Dames & Moore - Willow Grove, Pennsylvania
Staff Geologist – Conducted domestic and international environmental assessments and remediation projects for various clients.

1983 – 1988 Marathon Oil Company – Houston, Texas
Exploration Geologist – Deep water Gulf of Mexico

Education & Certifications

- Masters of Management – Business Administration – Penn State University – 1993
- Masters of Science – Geology – Texas A&M University – 1983
- Bachelor of Science – Geology – Middle Tennessee State University – 1981
- Professional Geologist – Wyoming, Pennsylvania – Prior certifications in DE, SC

Professional Honors

- Invited to speak at USEPA Hydraulic Fracturing Workshop – 2011
- Member – API Hydraulic Fracturing Issues Committee
    - Member of Battelle National Study sub committee
- Member of ANGA – AXPC Hydraulic Fracturing committees

Professional Honors (continued)

- Former Board of Director – Pennsylvania Environmental Council
- Former Board of Director/Regent – NAEM (formerly known as National Association of Environmental Management) – Washington, DC
- Former Board of Director – Pennsylvania Resource Council
- Member Texas A&M Geosciences Advisory Council
- Prior Member – Sediment Management Work Group
- Atlantic Richfield Company representative – American Society for Testing Materials (ASTM) Task Group on Underground Storage Tank Assessments

External Publications & Presentations

- Walter R. Hufford – Pennsylvania Brownfields conference – Altoona, PA – September 2011

- Walter R. Hufford – *"Managing the Regulatory Framework dealing with multi-media issues"* – Evaluation of Hydraulic Fracturing in the Marcellus Shale - Presented at the AEHS conference at University of Massachusetts – Amherst, MA, October 2011

- Walter Hufford – "*Hydraulic Fracturing"*- Emerging Environmental Challenges and Risks - Presented at the 84th Petroleum Environmental Research Forum (PERF) – Bartlesville, OK - November 2011

- Walter R. Hufford – Atlantic Richfield Company; John Bolakas – SECOR International Inc.; Mike Kasnick – SECOR International Inc. "*Innovative Technical and Legal Strategies for Achieving Site Closures for an Industrial Facility, Including a CERCLA Site"* – Presented at the 2008 North American Environmental Field Conference & Exposition – Tampa, Florida, January 2008

- Walter R. Hufford – Atlantic Richfield Company– *"Trends in Redevelopment of Legacy Sites"* – Presented at NAEM's 15th Annual EHS Management Forum – Stewardship Today for Tomorrow, Vancouver, BC, Canada, October 2007

- Kathleen A. Zvarick – Environmental Standards; Rock J. Vitale – Environmental Standards; Walter R. Hufford – Atlantic Richfield Company: *"A Risked Based Evaluation of Ambient and Background Air Sample Data, in Vapor Intrusion, Learning from the Challenges"* – Presented at the Air & Waste Management Association (AWMA) Special Topic Conference meeting in Providence, Rhode Island, September, 2007

External Publications & Presentations (continued)

- Walter R. Hufford – Atlantic Richfield Company; John Bolakas – SECOR International Inc. *"Use of Institutional Controls as Part of a Planned Approach to Securing Site Closure in Gnadenhutten, Ohio"*, Presented at the Wildlife Habitat Council's Restoring Greenspace: Ecological Reuse of Contaminated Properties in EPA Region 4 conference in Atlanta, GA, May 2007

- Walter R. Hufford – Atlantic Richfield Company, *"The Use of Engineering and Institutional Controls – A Management of Change Issue"*, Presented at the Business of Brownfields Conference – Engineers Society of Western Pennsylvania, Pittsburgh, April, 2007

- Lyle G. Bruce, BP- Atlantic Richfield Company; Stacey Waterman, BP; Walter Hufford, Atlantic Richfield Company, "*Sediments: An Emerging Environmental Issue"*, Presented at The Integrated Consortium for Energy and the Environment – San Antonio, Texas , October, 2006

- Walter R. Hufford – Atlantic Richfield Company; John Bolakas – SECOR International Inc.*"Use of Institutional Controls as Part of a Planned Approach to Securing Site Closure in Gnadenhutten, Ohio"*, Presented at the Wildlife Habitat Council USEPA conference in Seattle, WA - 2006

- Walter R. Hufford – Atlantic Richfield Company; John Bolakas – SECOR International, Inc; Mike Kasnick – SECOR International Inc, "*Success in Site Closure and Protection of a River Ecosystem at an Industrial Facility, Gnadenhutten, Ohio.* Presented at the Society for Environmental Toxicology and Chemistry (SETAC) North America 27th annual meeting in Montreal, Canada – November, 2006

- Walter R. Hufford – Atlantic Richfield Company; John C. Laager, Esq. Ballard, Sphar, Andrews and Ingersoll, LLC; John Bolakas – SECOR International Inc; Oren Gottlieb – SECOR International, Inc. - "*Success in Securing Site Closure for an Industrial Facility, including a CERCLA site, using technical and legal strategies in Gnadenhutten, Ohio.* Presented at the National Ground Water Conference on Ground Water and Environmental Law – Baltimore, MD, 2005

- Walter R. Hufford – Atlantic Richfield Company, *"Sarbanes Oxley Compliance and Remediation Management"* , Presented at the NAEM conference Sarbanes Oxley and the Environmental Professional, - Washington, DC, April 2005

CRAIG D. IDSO

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CAREER SUMMARY

Expert scientist with vast knowledge and experience in environmental issues. Excellent communicator and teacher of scientific information using multiple methods of delivery. Skilled administrator and manager of personnel and projects.

EDUCATION

Arizona State University
Ph.D. in Geography **1998**
University of Nebraska
M.S. in Agronomy (Agricultural Meteorology) **1996**
Arizona State University
B.S. Department of Geography **1994**

RELATED EXPERIENCE

Center for the Study of Carbon Dioxide and Global Change, Tempe, AZ
Chairman **1998 – Present**
Founded and currently direct the daily operation, strategy planning and continual development of a non-profit science educational organization, including the production of the Internet science journal, *CO_2 Science*, (www.co2science.org). Responsible for the production of content across various media, including scholarly publications, op-eds, video documentaries, and other means. Authored or co-authored thousands of reviews, reports and other publications over the past two decades.

CO_2 Coalition, Washington, DC
Advisor **2015 – Present**
Advise the institute on scientific matters pertaining to the climatological and biological effects of increasing atmospheric carbon dioxide and their implications for public policy. Write occasional op-eds, reviews and reports on these matters

Cato Institute, Washington, DC
Adjunct Scholar **2014 – Present**
Advise the institute on scientific matters pertaining to the climatological and biological effects of increasing atmospheric carbon dioxide and their implications for public policy. Write occasional op-eds, reviews and reports on these matters

Heartland Institute, Chicago, IL
Senior Fellow **2010 – Present**
Advise the institute on the science of climate change and its policy implications. Involved in a variety of projects, including work associated with the writing and publication of the *Climate Change Reconsidered* book series.

Nongovernmental International Panel on Climate Change, Tempe, AZ

Lead Scientist and Editor **2009 – 2014**

Directed the production of 4 major climate change assessments. Coordinated the work effort of several international scientists in writing, editing and reviewing thousands of pages of material for the assessments. Served as the Lead Editor of each volume and oversaw the content produced for the NIPCC web site, www.nipccreport.org.

Maricopa County Community College System, Mesa, AZ

Adjunct Faculty **1999-2000 & 2004-05**

Lectured and presided over laboratory classes for *Introduction to Physical Geography* at Mesa Community College and Chandler Gilbert Community College. Also an online instructor for *World Geography*.

Peabody Energy, St. Louis, MO

Director of Environmental Science **2001-2002**

Developed, implemented and coordinated activities pertaining to the management of coal combustion emissions and by-products with an emphasis on carbon sequestration and energy efficiency. Advised the company on legislative issues affecting the use of coal.

Arizona State University, Tempe, AZ

Post-Doctorate **1999-2001**

Co-authored and managed $500,000 National Science Foundation grant related to urban CO_2 concentrations in the Phoenix metropolitan area, including hiring and training 20 students to collect data. Analyzed and processed data, and complied reports.

Arizona State University, Tempe, AZ

Teaching and Research Associate **1996-1998**

Presented lectures for *Introduction to Meteorology II.* Served as a Research Assistant within the Office of Climatology on a variety of projects pertaining to the issue of climate change.

University of Nebraska, Lincoln, NE

Research Associate **1994-1996**

Worked on a project to calculate the effects of missing data on long-term climate normals.

Office of Climatology, Tempe, AZ

Research Aide **1992-1994**

Processed data from a network of automated weather stations located in the Phoenix Metropolitan Area. Maintained and ran the daily operations of the local COOP weather station.

PUBLICATIONS (PROFESSIONAL JOURNAL ARTICLES AND BOOKS)

Loehle, C. and Idso, C.D. 2017. The climate change extinction crisis: A critique. *Ecological Applications* (in review).

Loehle, C., Idso, C.D. and Wigley, T.B. 2016. Physiological and ecological factors influencing recent trends in United States forest health responses to climate change. *Forest Ecology and Management* **363**: 179-189.

Idso, C.D., Carter, R.M. and Singer, S.F. 2015. *Why Scientists Disagree About Global Warming: The NIPCC Report on Scientific Consensus*. The Heartland Institute, Arlington Heights, Illinois.

Idso, C.D., Idso, S.B., Carter, R.M. and Singer, S.F. (Eds.) 2014. *Climate Change Reconsidered II: Biological Impacts*. The Heartland Institute, Chicago, Illinois.

Idso, C.D. 2014. S. Fred Singer and the Nongovernmental International Panel on Climate Change. *Energy & Environment* **25**: 1137-1148.

Idso, C.D., Carter, R.M. and Singer, S.F. (Eds.) 2013. *Climate Change Reconsidered II: Physical Science*. The Heartland Institute, Chicago, Illinois.

Idso, C.D., Carter, R.M. and Singer, S.F. (Eds.) 2013. *Climate Change Reconsidered: The 2009 Report of the Nongovernmental International Panel on Climate Change and the 2011 Interim Report Abridgement* (in Chinese). Chinese Academy of Sciences, Beijing, China.

Idso, C.D., Carter, R.M. and Singer, S.F. (Eds) 2011. *Climate Change Reconsidered: 2011 Interim Report of the Nongovernmental Panel on Climate Change (NIPCC)*. The Heartland Institute, Chicago, Illinois.

Idso, C.D. and Idso, S.B. 2011. *The Many Benefits of Atmospheric CO_2 Enrichment*. Vales Lake Publishing, LLC, Pueblo West, Colorado, USA.

Idso, C.D. and Idso, S.B. 2009. *CO_2, Global Warming and Species Extinctions*. Vales Lake Publishing, LLC, Pueblo West, Colorado, USA.

Idso, C.D. and Singer, S.F. (Eds.) 2009. *Climate Change Reconsidered: 2009 Report of the Nongovernmental Panel on Climate Change (NIPCC)*. The Heartland Institute, Chicago, Illinois.

Idso, C.D. 2009. Paleoclimatic Indicators of Medieval Climate Change. In: McKittrick, R. (Ed.), *Critical Topics in Global Warming*. Fraser Institute, Vancouver, British Columbia, Canada, pp. 89-98.

Idso, C.D. 2009. *CO_2, Global Warming and Coral Reefs*. Vales Lake Publishing, LLC, Pueblo West, Colorado, USA.

Idso, C.D. 2007. Review of Book "The Weather Makers: How Man Is Changing the Climate and What It Means for Life on Earth." *The Quarterly Review of Biology* **82**: 74-75.

Idso, C.D. 2005. Review of Book "Climate Change and Human Health: Risks and Responses." *The Quarterly Review of Biology* **80**: 260.

Idso, C.D. 2004. *Biospheric Benefits of Atmospheric CO_2 Enrichment*. Issue Brief for Cooler Heads Briefing, Competitive Enterprise Institute, Washington, DC.

Idso, S.B., Idso, C.D. and Idso, K.E. 2003. *Enhanced or Impaired? Human Health in a CO_2-Enriched Warmer World*. Center for the Study of Carbon Dioxide and Global Change, Tempe, AZ, 43 pp.

Idso, S.B., Idso, C.D. and Idso, K.E. 2003. *The Specter of Species Extinction: Will Global Warming Decimate Earth's Biosphere?* The George C. Marshall Institute, Washington, DC, 51 pp.

Soon, W., Baliunas, S., Idso, C., Idso, S., and Legates, D. 2003. Reconstructing climatic and environmental changes of the past 1000 years: A reappraisal. *Energy & Environment* **14**: 233-296.

Idso, C.D. 2003. Review of Book "Wildlife Responses to Climate Change: North American Case Studies." *The Quarterly Review of Biology* **78**: 115.

Idso, S.B. and Idso, C.D. 2002. Desertification control and greenhouse effect. *Encyclopedia of Soil Science*, Marcel Dekker, New York, NY, pp. 331-334.

Balling Jr., R.C. and Idso, C.D. 2002. Analysis of adjustments to the United States Historical Climatology Network (USHCN) temperature database. *Geophysical Research Letters* 10.1029/2002GL014825.

Idso, S.B., Idso, C.D. and Balling Jr., R.C. 2002. Seasonal and diurnal variations of near-surface atmospheric CO_2 concentrations within a residential sector of the urban CO_2 dome of Phoenix, AZ, USA. *Atmospheric Environment* **36**: 1655-1660.

Balling Jr., R.C., Cerveny, R.S. and Idso, C.D. 2002. Does the urban CO_2 dome of Phoenix, Arizona contribute to its heat island? *Geophysical Research Letters* **28**: 4599-4601.

Idso, C.D. 2001. Earth's rising atmospheric CO_2 concentration: Impacts on the biosphere. *Energy & Environment* **12**: 287-310.

Idso, S.B., Idso, K.E. and Idso, C.D. 2001. The future of earth's biosphere as influenced by the ongoing rise in the air's CO_2 concentration. Proceedings, Global Warming: Science and Policy Conference, The James A. Baker III Institute for Public Policy, Rice University, Houston, TX.

Idso, C.D., Idso, S.B. and Balling, Jr., R.C. 2001. An intensive two-week study of an urban CO_2 dome in Phoenix, Arizona, USA. *Atmospheric Environment* **35**: 995-1000.

Idso, C.D. and Idso, K.E. 2000. The Greening of the American West: The Atmosphere's Rising CO_2 Concentration Is Stimulating Woody Plant Growth in the U.S. Forests, Grasslands, and Deserts. Greening Earth Society, Arlington, VA, 71 pp.

Idso, C.D., Idso, S.B. and Balling Jr., R.C. 2000. An Intensive Study of the strength and stability of the urban CO_2 dome of Phoenix, Arizona. *Proceedings of the 3rd Symposium on the Urban Environment*, American Meteorological Society, 14-18 August, pp. 203-204.

Idso, C.D. and Idso, K.E. 2000. Forecasting world food supplies: The impact of rising atmospheric CO_2 concentration. *Technology* **7** (suppl.): 33-56.

Idso, K.E., Idso, S.B. and Idso, C.D. 2000. Atmospheric CO_2 enrichment: Implications for ecosystem biodiversity. *Technology* **7** (suppl.): 57-69.

Idso, S.B., Idso, C.D. and Idso, K.E. 2000. CO_2, global warming and coral reefs: Prospects for the future. *Technology* **7** (suppl.): 71-94.

Idso, C.D., Idso, S.B., Kimball, B.A., Park, H.-S., Hoober, J.K. and Balling Jr., R.C. 2000. Ultra-enhanced spring branch growth in CO_2-enriched trees: Can it alter the phase of the atmosphere's seasonal CO_2 cycle? *Environmental and Experimental Botany* **43**: 91-100.

Idso, C.D. 2000. Review of Book "The Heat is On: The Climate Crisis, The Cover-Up, The Prescription." *The Quarterly Review of Biology* **75**: 75.

Idso, C.D. 2000. Review of Book "Turning Off the Heat: Why America Must Double Energy Efficiency to Save Money and Reduce Global Warming." *The Quarterly Review of Biology* **75**: 75-76.

Stooksbury, D.E., Idso, C.D. and Hubard, K.G. 1999. The effects of data gaps on the calculated monthly mean maximum and minimum temperatures in the continental United States: a spatial and temporal study. *Journal of Climate* **12**: 1524-1533.

Idso, C.D., Idso, S.B. and Balling Jr., R.C. 1999. The relationship between near-surface air temperature over land and the annual amplitude of the atmosphere's seasonal CO_2 cycle. *Environmental and Experimental Botany* **41**:31-37.

Idso, C.D., Idso, S.B., Idso, K.E., Brooks, T. and Balling Jr., R.C. 1998. Spatial and temporal characteristics of the urban CO_2 dome over Phoenix, Arizona. *Proceedings of the 2nd Symposium on the Urban Environment*, American Meteorological Society, 2-6 November 1998, pp. 46-48.

Idso, C.D., Idso, S.B. and Balling Jr., R.C. 1998. The urban CO_2 dome of Phoenix, Arizona. *Physical Geography* **19**: 95-108.

Idso, C.D., Idso, S.B. and Balling Jr., R.C. 1998 The relationship between near-surface air temperature over land and the annual amplitude of the atmosphere's seasonal CO_2 cycle. *Journal of the Arizona-Nevada Academy of Science* **33**: 28 (abstract).

Idso, C.D. 1997. Future climate and the precautionary principle: The other side of the story. *Climatological Publications Scientific Paper* **26**, Office of Climatology, Arizona State University, Tempe.

Idso, C.D. 1997. The greening of planet earth: Its progression from hypothesis to theory. *Climatological Publications Scientific Paper* **25**, Office of Climatology, Arizona State University, Tempe.

Idso, C.D. 1997. Biological benefits of earth's rising atmospheric CO_2 concentration inferred from climatic analysis of U.S. growing season durations. *Journal of the Arizona-Nevada Academy of Science* **32**: 31 (abstract).

Idso, C.D. and Idso, S.B. 1994. Empirical quantification of the water vapor greenhouse effect. *Journal of the Arizona-Nevada Academy of Science* **29**: 46 (abstract).

Idso, C.D. 1993. Derivation of a temperature and precipitation record for Tempe, Arizona 1895-1992. *Journal of the Arizona-Nevada Academy of Science* **28**: 33 (abstract).

SELECTED PRESENTATIONS

2 March 2017. "Global Warming and the Effects of Rising CO2 on the Biosphere." Mesa Republican Women's Meeting, Mesa, AZ.

24 February 2017. "The Benefits of Global Greening: A CPAC Conversation with James Delingpole." CPAC 2017 Conference, Gaylord National Resort and Convention Center, National Harbor, MD.

24 February 2017. "Biospheric Benefits of Atmospheric CO2 Enrichment." CPAC 2017 Conference, Gaylord National Resort and Convention Center, National Harbor, MD.

21 February 2017. "Understanding Global Warming and the Effects of Rising CO2 on the Biosphere." Sun Lakes Republican Club, Sun Lakes, AZ.

8 December 2016. "Reversing Course on Federal CO2 Policy: The Need to Do So from a Scientific Perspective." At the Crossroads III: Energy and Climate Policy Summit, Texas Public Policy Foundation and the Heritage Foundation, Washington, DC.

29 March 2016. "Benefits of Atmospheric CO_2." The New Criterion and the CO_2 Coalition Conference, New York, NY.

12 June 2015. "Climate Change Reconsidered II: Human Welfare, Energy, and Policies." The Tenth International Climate Change Conference, Washington, DC.

17 February 2015. "Biospheric Benefits of Atmospheric CO_2 Enrichment." Testimony before the Arizona State Senate Committee on Federalism, Mandates & Fiscal Responsibility, Phoenix, AZ.

5 December 2014. "Biospheric Benefits of Earth's Rising Atmospheric CO_2 Concentration." American Legislative Exchange Council, States and National Policy Summit Meeting, Washington, DC.

9 July 2014. "Earth's Future Biosphere: Key Findings of *Climate Change Reconsidered II, Biological Impacts.*" The Ninth International Climate Change Conference, Las Vegas, NV.

17 June 2013. "Biospheric Benefits of Atmospheric CO_2 Enrichment." NIPCC-China Symposium, Beijing, China.

15 June 2013. "Impacts of Atmospheric CO_2 Enrichment on Plants and Animals." Climate Symposium of the Chinese Academy of Sciences, Beijing, China.

21 May 2012. "Ocean Acidification: Quantifying its Potential Effects on Marine Life." The Seventh International Climate Change Conference, Chicago, IL.

13 October 2011. "Do Recent Swings in Public Opinion Against Climate Alarmism Spell Doom for the Climate Alarmist Movement?" Emerging Issues Forum of the Heartland Institute, Chicago, IL.

4 August 2011. "Warming Up to Climate Change: The Many Benefits of Increased Atmospheric CO_2." American Legislative Exchange Council (ALEC) 38th Annual Meeting, New Orleans, LA.

16 July 2011. "Benefits of Carbon Dioxide Enrichment." Doctors for Disaster Preparedness Annual Meeting, Albuquerque, NM.

30 June 2011. "CO_2-Induced Global Warming: Comparing the Vision of the NIPCC and the IPCC." The Sixth International Conference on Climate Change, Washington, DC.

28 March 2011. "CO_2-Induced Global Warming: Current Battlegrounds." Leisure World Republican Club, Mesa, AZ.

3 September 2010. "CO_2-Induced Global Warming: How the Alarmists Want to Impose 'Changes You Can Believe In' to Solve a Non-Problem." Mesa Republican Women's Meeting, Mesa, AZ.

17 May 2010. "Quantifying the Effects of Ocean Acidification on Marine Organisms." The Fourth International Conference on Climate Change, Chicago, IL.

19 November 2009. "CO_2-Induced Global Warming: The Other Side of the Debate." Republican Legislative District 19, Mesa, AZ.

20 October 2009. "Current Science in the Global Warming Debate." East Valley Republican Assembly, Mesa, AZ.

28 September 2009. "CO_2-Induced Global Warming: Is the IPCC Presenting an Honest Assessment of the Evidence?" Testimony before the Arizona State Senate Committee on Climate Initiatives, Phoenix, AZ.

27 August 2009. "Carbon Dioxide-Induced Global Warming: Is the IPCC Presenting an Honest Assessment of the Evidence?" 4th Annual Georgia Environmental Conference, Savannah, GA.

3 June 2009. "Current vs. Medieval Warmth and Effects of CO_2 Emissions on Marine Biology." Invited Speaker, The Cooler Heads Coalition, Washington, DC.

2 June 2009. "Carbon Dioxide, Ocean Acidification, and Marine Biology." The Third International Conference on Climate Change, Washington, DC.

9 March 2009. "Carbon Dioxide, Global Warming and Coral Reefs: Prospects for the Future." The 2009 International Conference on Climate Change, New York, NY.

3 March 2008. "CO_2 Science's Medieval Warm Period Project: 2008 Update." The 2008 International Conference on Climate Change, New York, NY.

26 April 2007. "Social Impacts of the Ongoing Rise in the Air's CO_2 Content: The *Real* Challenge of the 21st Century." Invited Speaker, Climate Change and Development Conference, Pontifical Council for Justice and Peace, Vatican City.

30 March 2005. "Carbon Dioxide, Climate and the Biosphere: Will Reason or Fear Determine Public Policy." Invited Seminar, Ohio Safety Congress & Expo, Columbus, OH.

29 March 2005. "Carbon Dioxide, Climate and the Biosphere: Will Reason or Fear Determine the Future." Invited Lecture, The Ohio State University, Columbus, OH.

5 November 2003. "CO_2, Global Warming and Carbon Sequestration." Panelist for Discussion of Experts on Carbon Sequestration – National Issues, Basin Electric Power Cooperative, Annual Membership Meeting, Bismarck, ND.

27 September 2003. "Carbon Dioxide, Climate and the Biosphere: The Battle for the Minds of Men." Panel Discussion, Council for National Policy, Fall Conference, Colorado Springs, CO.

12 July 2003. "Climate Change Impacts on Earth's Ecosystems: Will they Survive?" Doctors for Disaster Preparedness, 21st Annual Meeting, Phoenix, AZ.

19 June 2002. "Earth's Rising Atmospheric CO_2 Concentration: Current Scientific and Legislative Issues." Associated Electric Cooperative, Inc. Annual Meeting, Invited Guest Speaker, St. Louis, MO.

21 August 2001. "Latest Developments in Global Climate Change." Rotary Club of Mesa Guest Speaker, Mesa, AZ.

3 April 2001. "Should We be Worried About the Planetary Rise in Atmospheric CO_2?" Rotary Club of North Phoenix Guest Speaker, Phoenix, AZ.

14 February 2001. "Impacts of Earth's Rising Atmospheric Carbon Dioxide Concentration on the Biosphere." We Hold These Truths Guest Speaker, Phoenix, AZ.

7 September 2000. "Earth's Rising Atmospheric CO_2 Concentration: Impacts on the Biosphere." Panelist for Discussion of Experts on CO_2 and the Biosphere, Global Warming: Science and Policy Conference, The James A. Baker III Institute for Public Policy, Rice University, Houston, TX.

18 August 2000. "An Intensive Study of the Strength and Stability of the Urban CO_2 Dome of Phoenix, Arizona." Third Symposium on the Urban Environment, American Meteorological Society, Davis, CA.

28 October 1999. "Vegetative Enhancement from the Urban CO_2 Dome." Kiwanis Club Guest Speaker, Tempe, AZ.

25 October 1999. "Carbon Dioxide Concentration Variations Across the Urban Landscape." Seminar, U.S. Water Conservation Laboratory, Agricultural Research Service, U.S. Department of Agriculture, Phoenix, AZ.

31 August 1999. "Forecasting World Food Supplies: The Impact of the Rising Atmospheric CO_2 Concentration." Second International Dixy Lee Ray Memorial Symposium, Washington, DC.

31 August 1999. "CO_2, Global Warming and Coral Reefs: Prospects for the Future." Second International Dixy Lee Ray Memorial Symposium, Washington, DC.

26 March 1999. "A Large CO_2-Induced Spring Growth Enhancement in Sour Orange Trees." Annual Meeting of the Association of American Geographers, Honolulu, HI.

19 November 1998. "The Urban CO_2 Dome of Phoenix, Arizona." Central Arizona Chapter of the American Meteorological Society, Tempe, AZ.

2 November 1998. "Spatial and Temporal Characteristics of the Urban CO_2 Dome over Phoenix, Arizona." Second Urban Environment Symposium of the American Meteorological Society, Albuquerque, NM.

11 May 1998. "Human-Induced Increases in Atmospheric CO_2: Enhancing Vegetative Productivity in Cities and the World at Large." Seminar, Department of Geography, Brigham Young University, Provo, UT.

18 April 1998. "The Relationship Between Near-Surface Air Temperature Over Land and the Annual Amplitude of the Atmosphere's Seasonal CO_2 Cycle." The 42nd Annual Meeting of the Arizona-Nevada Academy of Science, Glendale, Arizona.

19 April 1997. "Biological Benefits of Earth's Rising Atmospheric CO_2 Concentration Inferred from Climatic Analysis of U.S. Growing Season Durations." The 41st Annual Meeting of the Arizona-Nevada Academy of Science, Las Vegas, Nevada.

13 April 1995. "Quantifying the Effects of Missing Data on Near-Surface Maximum and Minimum Temperature." Seminar, Department of Agricultural Meteorology, University of Nebraska, Lincoln, NE.

16 April 1994. "Empirical Quantification of the Water Vapor Greenhouse Effect." The 38th Annual Meeting of the Arizona-Nevada Academy of Science, Glendale, Arizona.

15 March 1994. "The Greenhouse Properties of Water Vapor." Seminar, Department of Agricultural Meteorology, University of Nebraska, Lincoln, Nebraska.

17 April 1993. "Derivation of a Temperature and Precipitation Record for Tempe, Arizona 1895-1992." The 37th Annual Meeting of the Arizona-Nevada Academy of Science, Las Vegas, Nevada.

FILMS AND DOCUMENTARIES

2009. CO_2Science Truth Alerts. Produced several 2-4 minutes videos on various topics pertaining to the global warming debate.

2008. Carbon Dioxide and the Climate Crisis: Doing the Right Thing. CO_2Science, Gilbert, Arizona, USA, 33 minutes.

2008. Carbon Dioxide and the Climate Crisis: Avoiding Plant and Animal Extinctions. CO_2Science, Gilbert, Arizona, USA, 37 minutes.

2008. Carbon Dioxide and the Climate Crisis: Reality or Illusion? CO_2Science, Gilbert, Arizona, USA, 53 minutes.

AWARDS AND RECOGNITION

2013. Recognition of work as Lead Editor of Climate Change Reconsidered. Presented by the Heartland Institute, Chicago, Illinois.

2007. Pontifical Council for Justice and Peace medal, Vatican City.

1998. Regents Graduate Academic Scholarship, Arizona State University, Tempe, Arizona.

1998. Inducted into The Honor Society of Phi Kappa Phi (requires a cumulative GPA above 3.95), Arizona State University Chapter, Arizona State University, Tempe, Arizona.

1997. Regents Graduate Academic Scholarship, Arizona State University, Tempe, Arizona.

1996. University Graduate Scholar, Graduate College, Arizona State University, Tempe, Arizona.

1996. Regents Graduate Academic Scholarship, Arizona State University, Tempe, Arizona.

1994. Best Student Paper, Geography Section of the 38th Annual Meeting of the Arizona-Nevada Academy of Science, Glendale, Arizona.

PROFESSIONA JOURNALS THAT HAVE INVITED DR. IDSO TO BE A REVIEWER

Environmental Pollution

Geophysical Research Letters

Journal of Geophysical Research – Atmospheres

Journal of Plant Growth Regulation

The Professional Geographer

PROFESSIONAL MEMBERSHIPS

American Association for the Advancement of Science

American Geophysical Union

American Meteorological Society

Association of American Geographers

Ecological Society of America

Geological Society of America

Honor Society of Phi Kappa Phi

MISCELLANEOUS

- Dr. Idso has also been interviewed by a number of radio and television stations, including National Public Radio, and has had his work published and cited in various news media
- Earned the Eagle Scout award from the Boy Scouts of America
- Presently active in the Boy Scouts of America organization as an Assistant District Commissioner and have served there as an adult staff training leader, a District Commissioner, Varsity Scout Leader, Cubmaster and Scoutmaster. Received the District Award of Merit in December, 2014.

REFERENCES

Will Happer, Ph.D.
Cyrus Fogg Brackett Prof. of Physics (emeritus)
Princeton University
Physics Department, Jadwin Hall
Princeton, NJ 08544
[redacted]

Pat Michaels, Ph.D.
Cato Institute
Center for the Study of Science
1000 Massachusetts Ave, NW
Washington, DC 20001
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Joseph Bast
President and CEO
The Heartland Institute
3939 North Wilke Road
Arlington Heights, IL 60004
[redacted]

Tracey Jacksier, Ph.D.
Air Liquide
Delaware Research & Technology Center
200 GBC Dr., Newark DE 19702
Ph: +1.302.286.5443; email: tracey.jacksier@airliquide.com

Summary: Leader of international cross-functional teams focusing on technology development with a strong track record of innovation and problem solving.

Work Experience

Air Liquide, Delaware Research & Technology Center, Newark, DE

- R&D Director of WW Analysis & Specialty Gas Programs

7/11 – Nomination to Sr. International Expert
1/05-present

  - Set R&D priorities to achieve global business needs for 400 MUSD Specialty Gas product line as well as analytical expertise in 5 Corporate R&D Centers on 3 continents (geographically dispersed, multi-national, highly educated). Manage diverse R&D portfolio ranging from analytical validation of gas production to manufacturing of calibration standards used for environmental compliance.
  - Development of technology roadmap, strategic partnerships, key technologies and products in highly competitive international environments

- Analysis Group Manager

03/3 – Nomination to International Expert
6/97-10/09

  - Manager of analytical and fuel cell laboratories
  - Evaluation and development of Air Liquide H_2 specifications for fuel cells
  - NF_3 principle investigator: material compatibility, autoignition & flow friction testing
  - Development of key technologies for manufacturing of low concentration corrosive mixtures

- Project Manager – Elemental Analysis

9/93-5/97

  - Coordinator of all US metal analysis activities for electronic specialty gases which included development of sampling and analysis methods as well as implementation into WW production plants
  - Purification of electronic gases for removal of metal contaminants
  - Manager of elemental analysis laboratory
  - Development of key technologies for manufacturing of low level corrosive mixtures

- Postdoctoral Researcher

8/92-9/93

  - Evaluation of particle and vapor phase contributions of metallic impurities in reactive electronic specialty gases. Development of suitable standards for calibration of metallic impurities in a sealed plasma system.

International Business Machines, General Technology Division, East Fishkill, NY

- Cooperative Education Program / Chemist

5/81 – 9/93

- Developed a method to gain better adhesion of copper and palladium to polyimide utilizing Laser Direct Write
- Investigation of alternate end-point detection systems for plasma etching tools
- Characterization of the adhesive properties of polyimides during plasma etching

Advisory Boards

- Princeton University Engineering Research Center on Mid-InfraRed Technologies for Health and the Environment, Princeton, NJ
- Northwestern University International Institute for Nanotechnology, Evanston, IL

Peer Reviewer

Analytical Chemica Acta
ANR (Agence Nationale de la recherche), France: Chemistry & Processes

Education

University of Massachusetts, Amherst, Massachusetts
Ph.D. in Physical Chemistry, September 1992
Research Director: Dr. Ramon M. Barnes
Dissertation Title: Arsine analysis by Sealed Inductively Coupled Plasma Atomic Emission Spectroscopy

Purdue University, West Lafayette, Indiana
B.S. in Biochemistry, May 1983

Professional Affiliations

SEMI Standards Voting Member in Gases Committee
SEMI Gases committee CO-Chair (2003-2007); Vice chair (2000-2003)
American Chemical Society
Society for Applied Spectroscopy
International Association for Hydrogen Energy
Chair: Specialty Gases Technical Session, Pittsburgh Conference & Exposition

Honors & Awards

Corporate Inventor Recognition Award: 2005, 2880, 2009, 2011, 2012
R&D Excellence in Safety Award: 2000 – 2005
Air Liquide Innovation Award: 2003, 2004, 2007
Air Liquide Outstanding Project Award: 1998

Patents, Publications & Presentations:

- 17 Patent families and additional pending applications
- More than 100 technical publications and presentations at Domestic and International Scientific Conferences

C. Rhett Jackson, Hydrologist, Ph.D., P.E.

Professor of Hydrology
Warnell School of Forestry and Natural Resources
University of Georgia, Athens, GA 30602-2152
706-542-1772; 706-542-8356 (FAX); rjackson@warnell.uga.edu

Curriculum Vitae

January 2017

Areas of Specialization: My research interests include the effects of human land use activities, specifically forestry, agriculture, and urbanization, on water quality and aquatic habitat and the effectiveness of best management practices (BMPs) in reducing nonpoint pollution. A particular current interest of mine is the relationship between riparian vegetation and channel structure and stream temperature. My work is trans-disciplinary, and I frequently collaborate with ecologists, animal biologists, and biogeochemists. Most of my applied research is viewed through the lens of hillslope hydrologic processes, my basic research interest.

Academic and Professional History

Academic Degrees:	Ph.D., Hydrology, Dept. of Civil and Env. Engr., Univ. of Washington, 1992
	MSE, Civil and Environmental Engineering, Duke University, 1985
	BSE, Civil and Environmental Engineering, Duke University, 1983

Directorships, Scientific Leadership:

2017	Lead PI, Coweeta LTER (CWT)
2015-2017	Transitional lead Principal Investigator, Coweeta LTER (CWT)
2012-2015	Science Advisory Committee, CWT LTER

Academic Positions: The University of Georgia

2008 - present	Professor, Warnell School of Forestry and Natural Resources
2003 - 2008	Associate Professor, Warnell School of Forestry and Natural Resources
1997 - 2003	Assistant Professor, Warnell School of Forestry and Natural Resources

Other Academic Positions:

1997	Visiting Lecturer, University of Washington
1996	Lecturer, Shoreline Community College, Seattle, WA
1992	Lecturer, Seattle University, Seattle, WA

Other Professional Positions:

1994 - 1997	Senior Hydrologist and Principal, Pentec Environmental, Edmonds, WA
1992 - 1994	Hydrologist and Planner, King County Surface Water Management, WA
1987 - 1988	Part-time intern, Congressman Mike Lowry's Seattle Office, WA
1985 - 1987	Project Engineer, Los Angeles County Sanitation Districts, CA

Resident Instruction

Teaching Awards

2011 Faculty Award for Outstanding Teaching, Warnell School of Forestry and Natural Resources
2010-2011 Senior Teaching Fellows Program, University of Georgia
2008 Honors Day Acknowledgment for Outstanding Teaching
2008 Inducted into University of Georgia Teaching Academy
2003 Richard B. Russell Undergraduate Teaching Award (UGA's highest award for young faculty)
2002 Honors Day Acknowledgment for Outstanding Teaching

Courses of Instruction

Regular teaching load includes three to four classes per year, including: CRSS/FORS 3060 - Soils and Hydrology, WASR 4110/6110 - Forest Hydrology, WASR 4400 - Introduction to Wetlands, WASR 8200 - Hillslope Hydrology, and, occasionally, HONS 1990H - Resource Scarcity: Technological Substitution for Land and Water.

Classes taught in UNO Innsbruck Summer Study abroad program:

Environmental Science
Comparative Natural History: The Austrian Alps vs. Southeastern US
Glaciers, Floods, and Landslides: living in a dynamic landscape

Graduate Advising

PhD Major or Co-Major Professor (7 graduated, 2 in-progress):

Alexandra Peneda de Pinho (2003, joint with Larry Morris) – Research Professor in Brazil
Li Guoyuan (2006) – Environmental Consultant
Josh Romeis (2008) – Deceased (Post-Doc at U. Arkansas)
Denise Carroll (2009) – Instructor, Georgia Southern University
Katie Price (2009, joint with Al Parker in Geography) – Assistant Prof., Georgia State University
- 2010 Excellence in Research by Graduate Students Award for Math and Physical Sciences
Kathleen Rugel (2013, joint with Steve Golladay in Ecology) – SESYNC Fellowship
Kristin Kraseski (2015) – NGO
Jacob Lafontaine (current)
Seth Younger (current)

MS Major or Co-Major Professor (22 graduated, 3 in-progress):

Mary Motte Rhett Walker (1998) – Environmental Consultant
Brian Normanly (1998) – Environmental Consultant
Melinda Mosner Dalton (1999) – USGS Hydrologist
Chris Sturm (2000, joint with David Leigh in Geography) – City Water Planner
Jennifer Keyes (2001) – Environmental Consultant
Sarah Cross (2001, joint with Brian Chapman) -
Kirk Martin (2001) - Businessperson
Jason Ward (2001) – USACOE Hydrologist
Stephanie Hyder Laseter (2002) – USFS Scientist
Chris Decker (2002) – EPA Scientist
Lane Rivenbark (2002) – Environmental Consultant
Jim White (2003) - Deceased
Joan Schneier (2006) - NCDENR
Will Summer (2006) – North Carolina Clean Water Action Program
Noah Fraser (2006) – Environmental Consultant
James Greco (2007) – Environmental Consultant
Scott Terrell (2008) – Environmental Consultant
Margaret Williamson (2011) – Peace Corps, graduate student
Damion Drover (2011) – PhD student, Virginia Tech
Lynsey Long (2011) – Georgia EPD Air Quality Division
Justin Vining (2015) – Hydrologic research technician
Allan Coats (2016) – Water Quality Forester, NC Forest Service
Johnson Jeffers (current)
Cody Matteson (current)
Lauren Brockman Gill (current)

MNR Major Professor or Co-Major Professor (5 graduated):

Adam Martin (2010)
Andrea Althoff (2012)
Samantha Marchman (2013, joint with Dale Greene)
Herschel Winters (2014)
Randi Butler (2016)

PhD Committee Memberships: 23 graduated, 8 current
MS Committee Memberships: 54 graduated, 1 current
*MFR/MNR Committee Memberships***:** 6 graduated, 0 current

Publications and Presentations

Publications marked with an asterisk (*) have been refereed; those marked with a dagger (†) have been peer-reviewed.

Chapters in Books

(12) †Richardson, J.R., R.D. Moore, C.R. Jackson, and D.P. Kreutzweizer.. In press. Chapter 5: Current streamside forest management effects on aquatic habitat and fish. ***In*** Reflections on Forest Management; Can Fish and Fiber Coexist? R. Danehy and A. Dolloff, Eds. American Fisheries Society.

(11) †Morris, LM., and C.R. Jackson. In press. Interactions of Soils and Land Uses with Water Quantity and Quality. *In* Ecosystem Services, Nick Comerford, Ed. ACSESS Books, Madison, WI.

(10) †Jackson, C.R, J.A Thompson, and R.K. Kolka. 2014. Wetland Soils and Hydrology. *In* Ecology of Freshwater and Estuarine Wetlands, 2nd Edition, D.P. Batzer and R. Sharitz, Editors. University of California Press.

(9) †Parker, D., J.T. Anderson, C.R. Jackson, B. Miller, and A. Rosenberger. 2014. Grand Challenge 2: Water; In A Science Road Map for Food and Water. Association of Public and Land Grant University (APLU) Experiment Station Committee on Organization and Policy – Science and Technology Committee.

(8) †Jackson, C.R. 2013. Timber Harvesting - Influence on Water Yield and Water Quality. *In* Encyclopedia of Environmental Management. Taylor and Francis, New York.

(7) †Webster, J.R., E.F. Benfield, K. Cecala, J.F. Chamblee, C. Dehering, T.Gragson, J. Hepinstall, C.R. Jackson, J. Knoepp, D. Leigh, J. Maerz, C. Pringle, and H.M. Valett. 2012. Water quality and exurbanization in southern Appalachian streams. Pages 91-106 in P.J. Boon and P.J. Raven (editors). River Conservation and Management. Wiley-Blackwell, Chichester, UK.

(6) †Jackson, C.R. 2006. Urban hydrology. *In* Encyclopedia of Water Science, S.W. Trimble, Ed. Taylor and Francis, New York.

(5) †Jackson, C.R. 2006. Wetland hydrology. Pp. 43-81 *In* Ecology of Freshwater and Estuarine Wetlands, D.P. Batzer and R. Sharitz, Editors. University of California Press.

(4) †Jackson, C.R., G. Sun, D. Amatya, W.T. Swank, M. Riedel, J. Patric, T. Williams, J.M. Vose, K. Trettin, W.M. Aust, S. Beasely, H. Williston, and G. Ice. 2004. Fifty years of forest hydrology research in the southeast - Some lessons learned. Pp. 33-112 *In A* Century of Forest and Wildland Watershed Lessons, J. Stednick and G. Ice, Editors. Society of American Foresters, Washington, DC.

(3) †Sun, G., M. Riedel, C.R. Jackson, R. Kolka, D.M. Amatya, and J. Sheppard. 2004. Influences of management of southern forests on water quantity and quality. Pp. 195-224 *In* Southern Forest Science: Past, Present, and Future, Rauscher, Johnsen, and Doudrick, Eds. USDA Forest Service Southern Research Station General Technical Report SRS-75.

(2) †Jackson, C.R. 2003. Timber Harvesting - Influence on Water Yield and Water Quality. *In* Encyclopedia of Water Science, B.A. Stewart and T. Howell, Eds. Marcel Dekker, New York. DOI: 10.1081/E-EWS 120010111.

(1) *Jackson C.R., S.J. Burges, X. Liang, K.M. Leytham, K.R. Whiting, D.M. Hartley, C.W. Crawford, B.N. Johnson, and R.R. Horner. 2001. Development and application of simplified continuous hydrologic modeling for drainage design and analysis. In *Land Use and Watersheds: Human influence on hydrology and geomorphology in urban and forest areas*, Water Science and Application Volume 2, Mark S. Wigmosta and Stephen J. Burges, Editors. Pp. 39-58. American Geophysical Union, Washington, DC.

Refereed and Peer-Reviewed Journal Articles

(65) *Jackson, C.R., R.A. Bahn, and J.R. Webster. In Press. Water quality signals from rural land use and exurbanization in a mountain landscape: What's clear and what's confounded? Journal of the American Water Resources Association.

(64) *Griffiths, N.A., C.R. Jackson, M.M. Bitew, A.M. Fortner, K.L. Fouts, K. McCracken, J.R. Phillips. 2017. Water quality effects of short-rotation pine management for bioenergy feedstocks in the southeastern United States. Journal of Forest Ecology and Management 400:181-198.

(63) *Jackson, C.R., E. Du, J. Klaus, N.A. Griffiths, M. Bitew and J.J. McDonnell. 2016. Interactions among hydraulic conductivity distributions, subsurface topography, and transport thresholds revealed by a multi-tracer hillslope irrigation experiment. Water Resources Research 52(8):6186-6206.

(62) *Du, E., C.R. Jackson, J. Klaus, J.J. McDonnell, N.A. Griffiths, M.F. Williamson, J.L. Greco, and M. Bitew. 2016. Interflow dynamics on a low relief hillslope: Lots of fill, little spill. Journal of Hydrology 534:645-658.

(61) *Griffiths, N.A., C.R. Jackson, J.J. McDonnell, J. Klaus, E. Du, and M. Bitew. 2016. Dual nitrate isotopes clarify the role of biological processing and hydrologic flowpaths on nitrogen cycling in subtropical low-gradient watersheds. Journal of Geophysical Research Biogeosciences *121*(2):422-437.

(60) *Frisch, J.R., J.T. Peterson, K.K. Cecala, J.C. Maerz, C.R. Jackson, T.L. Gragson, an C.M. Pringle. 2016. Patch occupancy of stream fauna across a land cover gradient in the southern Appalachians, USA. Hydrobiologia 773:163-175.

(59) *Rugel, K., S.W. Golladay, C.R. Jackson, T.C. Rasmussen. 2016. Delineating groundwater/surface water interaction in a karst watershed: Lower Flint River Basin, southwestern Georgia, USA. Journal of Hydrology: Regional Studies 5:1-19.

(58) †Drover, D.R., C.R. Jackson, M. Bitew, and E. Du. 2015. Effects of DEM scale on the spatial distribution of the TOPMODEL topographic wetness index and its correlations to watershed characteristics. HESSD MS No.: hess-2015-275 MS. (HESSD is the online discussion forum for Hydrologic and Earth Systems Science).

(57) *Marchman, S.C., M. Miwa, W.B. Summer, S. Terrell, D.G. Jones, S.L. Scarbrough, and C.R.Jackson. 2015. Clearcutting and Pine Planting Effects on Nutrient Concentrations and Export in Two Mixed Use Headwater Streams; Upper Coastal Plain, Southeastern US. Hydrological Processes 29(1):13-28.

(56) *Jackson, C.R., D.S. Leigh, S. Lynsey Scarbrough, John F. Chamblee. 2015. Herbaceous versus forested riparian vegetation: Narrow and simple versus wide, woody, and diverse stream habitat. River Research and Applications 31(7):847-857.

(55) *Scarbrough, S.L., C.R. Jackson, S. Marchman, G. Allen, J. Louch, and M. Miwa. 2015. Herbicide concentrations in first-order streams following routine application for competition control in establishing pine plantations. Forest Science 61(3):604-612.

(54) *Straight, C.A., C.R. Jackson, B.J. Freeman, and M.C. Freeman. 2015. Diel patterns and temporal trends in spawning activities of Robust Redhorse and River Redhorse in Georgia, assessed using passive acoustic monitoring. Trans. Amer. Fisheries Society 144:563-576.

(53) *Klaus, J, J.J. McDonnell, C.R. Jackson, E. Du, and N.A. Griffiths. 2015. Where does streamwater come from in low relief forested watersheds? A dual isotope approach. Hydrology and Earth Systems Science 19:125-135.

(52) *Jensen, C.K., D.S. Leigh, and C.R. Jackson. 2014. Scales and Arrangements of Large Wood in First-through Fifth-order Streams of the Blue Ridge Mountains. Physical Geography 35(6):532-560.

(51) †Jackson, C.R. 2014. Forestry best management practices: A mitigated water pollution success story. J. Forestry 112(1):47-49.

(50) †Jackson, C.R., M. Bitew, and E. Du. 2014. When interflow also percolates: Downslope travel distances and hillslope process zones. Invited Commentary. Hydrological Processes 28:3195-3200.

(49) *Long, S.L. and C.R Jackson. 2014. Variation of stream temperature among mesoscale habitats within stream reaches: southern Appalachians. Hydrological Processes 28:3041-3052.

(48) *Booth, D.B., K.A. Kraseski, and C.R. Jackson. 2014. Local and watershed-scale determinants of summertime urban stream temperatures. Hydrological Processes 28:2427-2438.

(47) *Jackson, C.R. and D.J. Martin. 2012. Comment on “Does timber harvest influence the dynamics of marine-derived nutrients in southeast Alaska streams?” Canadian Journal of Fisheries and Aquatic Sciences 69:1894-1897.

(46) *Li G., C.R. Jackson, and K.A. Kraseski. 2012. Modeled riparian stream shading: Agreement with field measurements and sensitivity to riparian conditions. Journal of Hydrology 428:142-151.

(45) *Tedela, N.H., S. McCutcheon, T.C. Rasmussen, R.H. Hawkins, W.T. Swank, J.L. Campbell, M.B. Adams, C.R. Jackson, and E.W. Tollner. 2012. Runoff curve numbers for ten small forested watersheds in the mountains of the Eastern United States. Journal of Hydrologic Engineering 17(11):1188-1198.

(44) *Harper, M.A., D.P. Batzer, C.R. Jackson, and R. Fenoff. 2012. Temporal and spatial variability of invertebrate communities in potential reference headwater streams of the Georgia Piedmont. J. Freshwater Ecology 27(2):273-285.

(43) *Palta, M.M., T.W. Doyle, C.R. Jackson, J.L. Meyer, and R.R. Sharitz. 2012. Changes in diameter growth of Taxodium distichum in response to flow alterations in the Savannah River. Wetlands 32:59-71.

(42) *Rugel, K., C.R. Jackson, J.J. Romeis, S.W. Golladay, D.W. Hicks, and J.F. Dowd. 2012. Effects of irrigation withdrawals on streamflows in a Karst environment: Lower Flint River Basin, Georgia, USA. Hydrological Processes. 26:523-534. DOI 10.1002/hyp8149.

(41) *Fraser, N., C.R. Jackson, D.E. Radcliffe. 2011. A paired watershed investigation of silvicultural BMPs revisited: BF Grant Memorial Forest, Georgia. Forest Science 58(6):652-662.

(40) *Terrell, S.B., W.B. Summer, C.R. Jackson, M.Miwa, D.G. Jones. 2011. Harvest, site preparation, and firebreak effects on hydrology and sediment transport in Coastal Plain headwater streams. Trans. Amer. Soc. Agricultural and Biological Engineers 54(6): 2117-2127.

(39) *Peterson, J.T. J. Wisniewski, J.P. Shea, and C.R. Jackson. 2011. Estimation of mussel population response to hydrologic alteration in a southeastern U.S. River basin. J. Env. Management 48:109-122. DOI 10.1007/s00267-011-9688-2

(38) *Romeis, J.J., C.R, Jackson, L.M. Risse, A.M. Sharpley, and D.E. Radcliffe. 2011. Hydrologic and phosphorus export behavior of small streams in commercial poultry-pasture watersheds. J. American Water Resources Association 47(2):367-385.

(37) *Price K., C.R. Jackson, A.J. Parker, T. Reitan, J. Dowd, and M. Cyterski. 2011. Effects of watershed land use and geomorphology on stream low flows during severe drought conditions in the southern Blue Ridge Mountains, Georgia and North Carolina, USA. Water Resources Research 47, W02516, doi:10.1029/2010WR009340.

(36) *Ice, G.G., G.W. Brown, J.A. Gravelle, C.R. Jackson, J.T. Light, T.E. Link, D.J. Martin, D.J. McGreer, and A.E. Skaugset. 2010. Discussion: Stream temperature relationships to forest harvest in western Washington, by Pollock, M.M. et al. Journal of the American Water Resources Association DOI: 10.1111 ⁄j.1752-1688.2010.00456.x.

(35) *Galang, M.A., L.A. Morris, D. Markewitz, C.R. Jackson, and E.A. Carter. 2010. Prescribed burning effects on the hydrologic behavior of gullies in the South Carolina Piedmont, USA. J. Forest Ecology and Management 259:1959-1970.

(34) *Price, K., C.R. Jackson, and A.J. Parker. 2010. Variation of surficial soil hydraulic properties across land uses in the southern Blue Ridge Mountains. Journal of Hydrology 383:256-268.

(33) *Jackson, C.R. and C.M. Pringle. 2010. Ecological benefits of reduced hydrologic connectivity in intensively developed landscapes. Bioscience 60(1):37-46.

(32) *Neary, D.G., G.G. Ice, and C.R. Jackson. 2009. Linkages between forest soils and water quality and quantity. J. Forest Ecology & Management 258:2269-2281.

(31) *Wenger, S.J., A.H. Roy, C.R. Jackson, E.S. Bernhardt, T.L. Carter, S. Filoso, C.A. Gibson, N.B. Grimm, W.C. Hession, S.S. Kaushal, E. Martí, J.L. Meyer, M.A. Palmer, M.J. Paul, A.H. Purcell, A. Ramirez, A.D. Rosemond, K.A. Schofield, T.R. Schueler, E.B. Sudduth, and C.J. Walsh. 2009. Twenty-six key

research questions in urban stream ecology: an assessment of the state of the science. Journal of the North American Benthological Society 28(4):1080-1098.

The above paper has become an instant classic and is now reprinted in the following book. Urban Ecology: Critical Concepts in Geography. 2015. Ian Douglas, Editor. Routledge Press.

(30) *Carter, T. C.R. Jackson, A.D. Rosemond, C.M. Pringle, D.E. Radcliffe, W. Tollner, J.C. Maerz, D.S. Leigh, and A. Trice. 2009. Beyond urban gradient studies: barriers and opportunities for timely studies of urbanization effects on aquatic ecosystems. Journal of the North American Benthological Society 28(4):1038-1050.

(29) *Peterson, J.T., C.R. Jackson, C.P. Shea, and G. Li. 2009. The development and evaluation of a stream channel classification for estimating the response of fishes to changing streamflow. Transactions of the American Fisheries Society 138:1123-1137.

(28) *Radcliffe, D.E., Z. Lin, L.M. Risse, J. Romeis, and C.R. Jackson. 2009. Modeling phosphorus in the Lake Allatoona watershed using SWAT: I. Developing phosphorus parameter values. Journal of Environmental Quality 38:111-120.

(27) *Lin, Z., D.E. Radcliffe, D.E., L.M. Risse, J. Romeis, and C.R. Jackson. 2009. Modeling phosphorus in the Lake Allatoona watershed using SWAT: II. Effect of land use change. Journal of Environmental Quality 38:121-129.

(26) *Carroll, G.D. and C.R. Jackson. 2008. Observed relationships between urbanization and riparian cover, shredder abundance, and stream leaf litter standing stocks. Fundamental and Applied Limnology 173(3):213-225.

(25) *Pinho, A.P., L.A. Morris, C.R. Jackson, W.J. White, P.B. Bush, and A.T. Matos. 2008. Contaminant Retention Potential of Forested Filter Strips Established as SMZs in the Piedmont of Georgia. J. Amer. Water Resources Assoc. 44(6):1564-1577.

(24) *White, W.J., L.A. Morris, A.P. Pinho, and C.R. Jackson. 2007. Sediment retention by forested filter strips in the Piedmont of Georgia. J. Soil and Water Conservation 62(6):453-463.

(23) *Jackson, C.R., D.P. Batzer, S.S. Cross, S.M. Haggerty, and C.A. Sturm. 2007. Headwater Streams and Timber Harvest: Channel, Macroinvertebrate, and Amphibian Response and Recovery. Forest Science 53(2):356-370.

(22) *Freeman, M.C., C.M. Pringle, and C.R. Jackson. 2007 Hydrologic connectivity and the contribution of stream headwaters to ecological integrity at regional scales. J. Amer. Water Resour. Assoc. 43(1):5-14.

(21) *Li, G. and C.R. Jackson. 2007. Simple, Accurate, and Efficient Revisions to MacCormack and Saulyev Schemes: High Peclet Numbers. Applied Mathematics and Computation 186(1):610-622.

(20) *Carter, T. and C.R. Jackson. 2007. Vegetated roofs for stormwater management at multiple spatial scales. Landscape and Urban Planning 80(1-2):84-94.

(19) *Jackson, C.R., J.K. Martin, D.S. Leigh, and L.T. West. 2005. A Southeastern Piedmont Watershed Sediment Budget; Evidence for a Multi-Millennial Agricultural Legacy. J. Soil Water Cons. 60(6):298-310.

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(13) *Pinho, A., L. daCosta, L.A. Morris, R. Jackson, W. White, and M. Martinez. 2004. Retencao de atrazina, picloram e caulinita em zona riparia localizada em area de silvicultura. Engenharia na Agricultura, Vicosa-MG 12:260-270.

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Published Reviews

†Jackson, C.R. 2006. Book Review: "Hydrology: an introduction" by Wilfried Brutsaert, Cambridge Press. J. American Water Resources Association 42(2): 529-530.

†Jackson, C.R. 2004. Book Review: "An Introduction to the Environmental Physics of Soil, Water and Watersheds" by C. Rose, Cambridge Press. J. American Water Resources Association 40(6):1666-1667.

Other Professional Publications in Journals

†Jackson, C.R., W.T. Swank, and R. Olszewski. 2005. John D. Hewlett (1922-2004). Obituary. EOS 86(12):124.

†Jackson, C.R., W.T. Swank, and R. Olszewski. 2005. Hydrologist: John D. Hewlett (1922-2004). Obituary. Hydrological Processes 19:2093-2095. doi:10.1002/hyp.5885.

Select Proceedings Papers and Published Reports

Rugel, K., S.W. Golladay, and C.R. Jackson. 2011. Identifying groundwater/stream interaction in the Lower Flint River Basin using multiple stream parameters and remote sensing datasets. Proceedings of the Georgia Water Resources Conference, April 11-13, University of Georgia.

Markewitz, D., C.R. Jackson, N. Fraser, and D. Radcliffe. 2011. Streamwater dissolved organic carbon and total dissolved nitrogen: Effects of timber harvest in the Georgia Piedmont. Proceedings of the Georgia Water Resources Conference, April 11-13, University of Georgia.

Sheridan, R.M., G.D. Carroll, C.R. Jackson, T.C. Rasmussen, and J.L. Shelton. 2009. Simple alternative methods for the biological component of watershed assessments. Pp 51-60, Proceedings of the Georgia Water Resources Conference, April 27-29, University of Georgia.

Jackson, C.R. and M. Miwa. 2007. Importance of Forestry BMPs for Water Quality. Pp. 10-31 In Proceedings of the Louisiana Natural Resources Symposium: Human and Other Impacts on Natural Resources – Causes, Quantification, and Implications, August 13 and 14, Louisiana State Univ., Baton Rouge, LA.

Wrona, A., D. Wear, J. Ward, R. Sharitz, J. Rosenzweig, J. Richardson, D. Peterson, S. Leach, L. Lee, C. R. Jackson, J. Gordon, M. Freeman, O. Flite, G. Eidson, M. Davis, and D. Batzer. 2007. Restoring ecological flows to the lower Savannah River: a collaborative scientific approach to adaptive management. Proceedings of the 2007 Georgia Water Resources Conference, , March 27-29,T. Rasmussen, G.D. Carroll, and A. Georgakakos, Eds. University of Georgia, Athens, GA. 12 pp.

Olszewski, R., and C.R. Jackson. 2006. Best management practices and water quality. *In* A Primer on the Top Ten Forest Environmental and Sustainability Issues in the Southern United States. Special Report 06-06. NCASI, Research Triangle, NC.

Meyer, J.L. K.L. Jones, G.C. Poole, C.R. Jackson, J.E. Kundell, B.L. Rivenbark, E.L. Kramer, W. Bumback. 2005. Trout Stream Buffer Study: Implications of Changes in Riparian Buffer Protection for Georgia's Trout Streams, Institute of Ecology, University of Georgia.

Li, G. and C.R. Jackson. 2005. Time-series stream temperature and dissolved oxygen modeling in the lower Flint River Basin. Proceedings of the Georgia Water Resources Conference, April 25-27, Kathy Hatcher, Ed, Institute of Ecology, University of Georgia, Athens, GA.

Romeis, J. and R. Jackson. 2005. Evaluation of total phosphorus in the Altamaha-Ocmulgee-Oconee River basin. Proceedings of the Georgia Water Resources Conference, April 25-27, Kathy Hatcher, Ed, Institute of Ecology, University of Georgia, Athens, GA.

Bradshaw, J.K., D. Radcliffe, K. Lichtenstein, M. Risse, M. Bakker, R. Jackson, and D. Markewitz. 2005. Land use effects on suspended sediment yield in six small Georgia watersheds. Proceedings of the Georgia Water Resources Conference, April 25-27, Kathy Hatcher, Ed, Institute of Ecology, University of Georgia, Athens, GA.

Carroll, G.D. and C.R. Jackson. 2003. Preliminary analysis of biotic indices and land cover within streams of the Georgia Piedmont. Proceedings of the 2003 Georgia Water Resources Conference, April 23-24. University of Georgia, Athens, GA.

Li, G. and C.R. Jackson. 2003. Physical and chemical characteristics of streams in the lower Flint River Basin. Proceedings of the 2003 Georgia Water Resources Conference, April 23-24. University of Georgia, Athens, GA.

Hale, V.C. and C.R. Jackson. 2003. Hydrologic modifications to the lower Savannah River. Proceedings of the 2003 Georgia Water Resources Conference, April 23-24. University of Georgia, Athens, GA.

Meyer, J., M. Alber, W. Duncan, M. Freeman, C. Hale, R. Jackson, C. Jennings, M. Palta, E. Richardson, R. Sharitz, J. Sheldon, and R. Weyers. 2003. Summary Report Supporting the Development of Ecosystem Flow Recommendations for the Savannah River below Thurmond Dam. River Basin Science and Policy Center, University of Georgia, Athens, GA.

Cowie, G., M. Davis, S. Holmbeck-Pelham, B. Freeman, M. Freeman, K. Hatcher, R.Jackson, A. Miller Keyes, M. Merrill, J. Meyer, E. Sutherland, S. Wenger. 2002. Reservoirs in Georgia: Meeting Water Supply Needs while Minimizing Impacts**.** Institute of Ecology, University of Georgia.

Professional Presentations since 2007 (invited presentations to 2002)

Jackson, C.R. and W.A. Coats. 2017. Can riparian forest cover cool streams that have warmed in the sun? 17th Annual Meeting of the American Ecological Engineering Society, May 23-25, Athens, GA.

Jackson, C.R. 2017. Shallow subsurface stormflow (interflow): Functioning to extend variable source areas upslope. **Invited Seminar**, Luxembourg Institute of Science and Technology, Belval, Luxembourg. May 2nd.

Jackson, C.R. and W.A. Coats. 2017. Do open-canopy mountain streams cool down after returning to forested conditions? Georgia Water Resources Conference, April 19-20, University of Georgia.

Fulton, S.G., J. Dowd, A. Thompson, and C. Rhett Jackson. 2017. Assessing how hydrologic isolation of coal mine spoils affects streamflow mechanisms and water chemistry using open source wireless technology. 2017 National Meeting of the American Society of Mining and Reclamation, April 9-13, Morgantown, WV.

Griffiths, N.A., C.R. Jackson, M. Bitew, K. Vache, J.J. McDonnell, G. Starr, B. Rau, and J. Blake. 2017. Short rotation woody biomass sustainability. 2017 Project Peer Review, USDOE Bioenergy Technologies Office, March 5-10, Denver, CO.

Bitew, M.M., C.R. Jackson, K.B. Vache, N. Griffiths, G. Starr, J. McDonnell, B. Rau, S.E. Younger, and K. Fouts. 2016. Water Quantity and Water Quality Impacts of Intensive Woody Biomass Feedstock Production in the Southeastern USA. POSTER. American Geophysical Union Annual Meeting, December 12-16, San Francisco, CA.

Vache, K.B., J. McDonnell, C.R. Jackson, and M.M. Bitew. 2016. Observation-based model development for groundwater dominated catchments. American Geophysical Union Annual Meeting, December 12-16, San Francisco, CA.

Jackson, C.R. and W.A. Coats. 2016. Riparian Canopy Gaps: within-gap heating and downstream cooling. POSTER. American Geophysical Union Annual Meeting, December 12-16, San Francisco, CA.

Jackson, C.R. 2016. Conceptual, theoretical, and philosophical considerations in water quality modeling. **Invited seminar**. Tianjin University of Science and Technology, December 9, Tianjin, China.

Rau, B.M., N. Griffiths, C.R. Jackson, J. Blake. Nitrogen cycling in short rotation pine. Soil Science Society of America Annual Meeting. Phoenix, AZ, 6-10, November 2016.

Bitew, M.M., C.R. Jackson, K. Vache, J.J. McDonnell, N. Griffiths, G. Starr, S. Younger, K. Fouts, and B. Rau. 2016. Modeling hydrologic impacts of intensive woody biomass feedstock production in the southeastern U.S. Short Rotation Woody Crop Science and Technology in an Uncertain Global Marketplace. POSTER. 11th Biennial Short Rotation Woody Crops Operations Working Group Conference, October 11-13, Fort Pierce, FL.

Jackson, C.R. and N. Griffiths. 2016. Short rotation woody biomass and water quality. **Invited Presentation**. Symposium on Watershed Scale Sustainability of Forest-Based Bioenergy Production. Sept. 28-29, North Carolina State University, Raleigh, NC.

Aubrey, D.P., C.R. Jackson, J.J. McDonnell, C.F.Minat, and P.V. Caldwell. 2016. Hydrologic budgets for short rotation loblolly pine and sweetgum. Ecological Society of America Annual Meeting, August 7-12, Fort Lauderdale, FL.

Griffiths, N.A., C.R. Jackson, M. Bitew. A.M. Fortner, J.R. Phillips, K. McCracken, and K. Fouts. 2016. Evaluating the water quality effects of short-rotation pine production for bioenergy using a watershed-scale experiment. Ecological Society of America Annual Meeting, August 7-12, Fort Lauderdale, FL.

Jackson, CR. 2016. Influence of soils on vertical and lateral movement of water. **Invited Presentation**. Workshop on Hydrologic connectivity: Bridging terrestrial and aquatic systems in a karst landscape. Joseph Jones Ecological Research Center, July 19-20.

S.S. Panda, D.M. Amatya, R. Jackson, Y.Kim, B. Walters, and J. Nettles, 2016. Forest biomass estimation and ET correlation study with advanced geospatial technology for environmental and climate modeling. An Oral presentation at the 2016 ASABE Annual Int'l Meeting, July 17-20, Orlando, FL.

Jackson, C.R. 2016. Forest Hydrology and Water Quality: Grand Challenges in the U.S. **Invited Presentation**. NCASI Southern Regional Meeting, June 20-22, Chattanooga, TN.

Jackson, C.R., N.A. Griffiths, and B. Rau. 2016. Evaluating the environmental sustainability of woody biomass production for bioenergy in the southeastern US. **Invited Presentation**. Southeastern US bioenergy study tour sponsored by DOE and the Oak Ridge National Laboratory. April 13, Savannah River Site.

Jackson, C.R., M. Bitew, E. Du, N.A. Griffiths, L. Hopp, J. Klaus, J.J. McDonnell, and K. Vache. 2015. Headwater streams in porous landscapes: What's the contributing area? **Invited Presentation**. American Geophysical Union Conference, Dec. 14-19, San Francisco, CA.

Younger, S. and C.R. Jackson. 2015. Comparison of evapotranspiration and forest cover type in the southeast United States: A long-term water budget approach. POSTER. American Geophysical Union Conference, Dec. 14-19, San Francisco, CA.

Jackson, C.R. 2015. Forest hydrology: Grand challenges in the USA. **Invited Presentation**. Forest Hydrology Science Symposium and Workshop, December 9-11, Portland Oregon.

Jackson, C.R. 2015. Stream temperature and overhead canopy: How important is rhododendron? Riparian Forest Resoration Workshop, USDA Forest Service Coweeta Hydrologic Laboratory, October 27.

Griffiths, N.A., C.R. Jackson, M. Bitew, E. Du, K. Vache, J.J. McDonnell, N. Orlowski, J. Klaus, G. Starr, J.I. Blake, and B.M. Rau. 2015. Examining the effects of woody biomass production for bioenergy on water quality and hydrology in the southeastern United States. Webinar, National Bioenergy Day, October 21.

Jackson, C.R., C.F. Miniat, N. Heynen, and J. Webster. 2015. Coweeta (CWT) and the temperate montane deciduous forest of the southern Appalachians: *Topographically complex, climatically variable, disturbed at multiple time scales, and human modified and utilized.* POSTER. 2015 LTER All Scientists Meeting. August 30 – Sept. 2, Estes Park, CO.

Jackson, C.R. 2015. Coweeta LTER 2-min lightning presentation. 2015 LTER All Scientists Meeting. August 30 – Sept. 2, Estes Park, CO.

Griffiths, N.A., C.R. Jackson, J.J. McDonnell, M. Bitew, E. Du, and J. Klaus. 2015. Effects of short-rotation pine management for bioenergy on water quality in the southeastern United States. Society for Freshwater Science Annual Meeting. May 17-21, Milwaukee, WI.

Dupont, R., C.R. Jackson, and R. Psenner. 2015. Water and the landscape: Living with the natural environment. Lecture Series, UNO-Innsbruck International Summer School. July 13, Innsbruck, Austria.

Jackson, C.R. 2015. Panel Discussion: Maximizing flow: Restoring the Savannah River Basin's natural flood patterns. Georgia Water Resources Conference, April 28-29, University of Georgia.

Bahn, R.A. and C.R. Jackson. 2015. Effects of exurbanization in the Upper Little Tennessee River Basin: Sedimentation is predictable; flow and specific conductivity are not. Georgia Water Resources Conference, April 28-29, University of Georgia.

Hopp L., K.B. Vaché, C.R. Jackson and J.J. McDonnell. 2015. Modeling subsurface stormflow initiation in low-relief landscapes. POSTER. European Geophysical Union Annual Meeting, April 12-17, Vienna, Austria

Griffiths, N.A. and C.R. Jackson. 2015. Short rotation woody biomass sustainability. 2015 Project Peer Review, USDOE Bioenergy Technologies Office, March 23-27, Alexandria, VA.

Caldwell, P., C.F. Miniat, D.P. Aubrey, C.R. Jackson, and J.J. McDonnell. 2105. Precipitation partitioning in short rotation bioenergy crops – implications for downstream water quality. POSTER. Fifth Interagency Conference on Research in the Watersheds. March 2-5, North Charleston, SC.

Griffiths, N.A., C.R. Jackson, M. Bitew, E. Du, K.B. Vache, J.J. McDonnell, J. Klaus, B.M. Rau. 2015. Evaluating the effects of woody biomass production for bioenergy on water quality and hydrology in the southeastern United States. Fifth Interagency Conference on Research in the Watersheds. March 2-5, North Charleston, SC.

Elliott, K.F., C.F. Miniat, J.D. Knoepp, M.A. Crump, and C.R. Jackson. 2015. Restoration of southern Appalachian riparian forests affected by Eastern Hemlock mortality. POSTER. Fifth Interagency Conference on Research in the Watersheds. March 2-5, North Charleston, SC.

Morris, L.M. and C.R. Jackson. 2015. Georgia's cypress resource: reconciling perceptions of change with evidence of change. SESAF 2015 Annual Meeting, January 25-27, Saint Simons Island, GA.

Jackson, C.R. 2015. Why assessing BMP effectiveness is more of a sociological question than a hydrological question. SESAF 2015 Annual Meeting, January 25-27, Saint Simons Island, GA.

Griffiths, N.A., C.R. Jackson, M. Bitew, E. Du, K.B. Vache, J.J. McDonnell, J. Klaus, and C.C. Trettin. 2014. Environmental sustainability of woody biomass production for bioenergy in the southeastern United States. 10th Biennial Meeting of the Short Rotation Woody Crops Operations Working Group July 17-19, Seattle, WA.

Kraseski, K.A., D.B.Booth, and C.R. Jackson. 2014. Local and watershed-scale determinants of summertime urban stream temperatures. 3rd Symposium on Urbanization and Stream Ecology, May 15-17, Portland, OR.

Griffiths, N.A., C.R. Jackson, M. Bitew, E. Du, K.B. Vache, J.J. McDonnell, and J. Klaus. 2014. Assessing BMP Effectiveness for Woody Biomass Production for Bioenergy in Groundwater-Dominated Coastal Plain Watersheds.

Jackson, C.R. and J.V. Scneier. 2014. Spatial and Temporal Frequency of Overland Flow from Piedmont Pine Plantations. Symposium on Forestry Best Management Practice Effectiveness in the Eastern US. May 12-15, Blacksburg, VA.

Carrol, G.D. and C.R. Jackson. 2014. Use of Simple Suspended and Bed Sediment Metrics to Explain Biotic Index Variability and Relationships between Fish and Macroinvertebrate Assemblage Metrics in Georgia Piedmont Streams Symposium on Forestry Best Management Practice Effectiveness in the Eastern US. May 12-15, Blacksburg, VA.

Jackson, C.R. 2014. The Oso Washington landslide: Glaciers, young landscapes, LiDAR, logging, and risk management. Warnell School seminar, April 24, University of Georgia.

Jackson, C.R., D.P. Aubrey, J.J. McDonnell, C.F. Miniat, and P. Caldwell. 2014. Pines vs. eucalyptus in the Upper Coastal Plain: How much water are they using and where are they getting it? An International

Symposium on Evapotranspiration: Challenges in measurement and modeling from leaf to landscape scale and beyond. ASABE, April 7-10, Raleigh, NC.

Dalton, K, S.S. Panda, D. Amatya, C.R Jackson, J.E. Nettles, G.M. Chescheir. 2014. Evapotranspiration Parameter Estimation Model Development with Advanced Geospatial Technology. An International Symposium on Evapotranspiration: Challenges in measurement and modeling from leaf to landscape scale and beyond. ASABE, April 7-10, Raleigh, NC.

Vache, K.B., C.R. Jackson, M. Bitew, J. Blake, J.J. McDonnell, N. Griffiths. 2013. Potential impacts of intensive cellulosic biofuel production on water quality and quantity in the Upper Coast Plain. Poster. American Geophysical Union Conference, Dec. 9-13, San Francisco, CA.

Price, K. and C.R. Jackson. 2013. A multi-scale analysis of streamflow response to changes in evapotranspiration and soil hydrology in the Blue Ridge Mountains. *(Invited).* American Geophysical Union Conference, Dec. 9-13, San Francisco, CA.

Price, K., P.J. Dennedy-Frank, C.J. Harman, T. Purucker, C.R. Jackson, R.C. Sidle. 2013. Process scales in catchment science: a new synthesis. American Geophysical Union Conference, Dec. 9-13, San Francisco, CA.

Jackson, C.R. 2013. When Reductionist Engineers Meet High Dimensional Natural Systems: The Example of Stream Management and Restoration. **Invited Presentation**. Duke Univ. Dept of Civil and Environmental Engineering Seminar, November 25, Duke University.

Jackson, C.R , S.C. Marchman, M. Miwa, W.B. Summer, S. Terrell, D.G. Jones, S.L. Scarbrough. 2013. Nutrient and Herbicide Concentrations and Export from Clearcuts and Site-prepared Plantations; Upper Coastal Plain, Southeastern US. Society American Foresters Annual Meeting, Oct 23-27, Charleston, SC.

Jackson, C.R. 2013. BMP research at UGA. **Invited Presentation**. Southern Group of State Foresters 2013 Annual Meeting, June 3-6, Savannah, GA.

Langholtz, M.H., N.A. Griffiths, N.A., C.R. Jackson, J.J. McDonnell, J.I. Blake. 2013. Short rotation woody biomass sustainability. 2013 DOE Bioenergy Technologies Office (BETO) Project Peer Review, May 23rd, Arlington, VA.

Bahn, R. A. and C.R. Jackson. 2013. Variation in hydrologic and sediment transport behavior among the nine intensively monitored watersheds in the Upper Little Tennessee River Basin. Georgia Water Resources Conference, University of Georgia, Athens, GA.

Jackson, C.R. 2013. Riparian vegetation condition strongly affects channel morphology and habitat structure. Georgia Water Resources Conference, University of Georgia, Athens, GA.

Jackson, C. Rhett, Enhao Du, Julian Klaus, Natalie A. Griffiths, Jeffrey J. McDonnell, and John I. Blake. 2012. Whole hillslope irrigation reveals differential interflow behavior of dye tracers, conservative solutes and nutrients. POSTER. American Geophysical Union Conference, December 3-7, San Francisco, CA.

Du,Enhao, C. Rhett Jackson, and Margaret F. Wiliamson. 2012. Effects of measurement scale on saturated hydraulic conductivity estimates in loamy sand and argillic soils: from point to hillslope. POSTER. American Geophysical Union Conference, December 3-7, San Francisco, CA.

Du, E., C.R. Jackson, J.Blake, N.A. Griffiths, J. Klaus, J.J. McDonnell, K. Vache, M. Langholtz. 2012. Modeling water quality within biofuel production landscapes: integrating hillslope flow paths, deep groundwater dynamics, riparian groundwater interactions, and end-member chemistry. POSTER. American Geophysical Union Conference, December 3-7, San Francisco, CA.

Klaus, Julian, Jeffrey, J. McDonnell, Enhao Du, C. Rhett Jackson. 2012. Quantifying catchment water cycle connections via the local meteoric and evaporation water lines. POSTER. American Geophysical Union Conference, December 3-7, San Francisco, CA.

Natalie A. Griffiths, Patrick J. Mulholland, C. Rhett Jackson, Jeffrey J. McDonnell, John I. Blake, Enhao Du, Julian Klaus, and Matt H. Langholtz. 2012. Biogeochemistry of forested watersheds in the Southeastern U.S. prior to conversion to short-rotation pine for bioenergy. POSTER. American Geophysical Union Conference, December 3-7, San Francisco, CA.

Booth, Derek B., K. Kraseski, R.A. Bahn, and C.R. Jackson. 2012. Effects of surficial geology, lakes, and land use on urban stream temperatures: Metropolitan Seattle. Geological Society of America Annual Meeting, November 4-7, Charlotte, NC.

Jackson, C.R., D.S. Leigh, S. Lynsey Long, and J.F. Chamblee. 2012. Channel morphology, local riparian condition, and basin land cover associations; Southern Appalachians. Geological Society of America Annual Meeting, November 4-7, Charlotte, NC.

K.P. Dalton, S.S. Panda, D.M. Amatya, R. Jackson, H. Ssegane, G. Chescheir. 2012. Stomatal Conductance and Leaf Area Index Estimation Using Remotely Sensed Information. 3rd International Forests & Water in Changing Environment 2012 Conference, September 18-20, Fukuoka, Japan

Eason, J., L.M. Risse, R. Jackson, and J. Evans, 2012. In-Stream Sediment & Phosphorus Changes before and during Construction of a Stream Restoration Project. 2012 Land and Sea Grant National Water Conference, May 20-24, Portland, OR.

Rugel, K., R.J. McDowell, J.F. Dowd, J. C. Brock, S.W. Golladay, C.R. Jackson. 2012. Using remote sensing, stream chemistry and fracture trends to predict groundwater/stream interaction in karst medium: Lower ACF River Basin, Southwestern, GA, USA. Society for Freshwater Science 2012 Annual meeting, May 21, 2012, Louisville, KY.

Price, K., C.R. Jackson, A.J. Parker, and M. Cyterski. 2012. Effects of watershed land use and geomorphology on stream low flows during severe drought conditions in the southern Blue Ridge Mountains, Georgia and North Carolina. GSA Southesatern Section – 61st Annual Meeting, April 1-2, Asheville, NC.

Rugel, K., J.R, McDowell, J.F. Dowd, S.W. Golladay, and C.R. Jackson. 2012. Investigating groundwater/stream interaction between the Upper Floridan Aquifer and streams in the lower Flint and Chanttahoochee River basins, GA, USA, using stream chemistry, remote sensing, and bedrock fracture orientation. GSA Southesatern Section – 61st Annual Meeting, April 1-2, Asheville, NC.

Jackson, C.R.. Panelist. 2012. Scientific view of forest management and watershed health. Society of American Foresters Forest Management and Watershed Health Technical Symposium.Clean Water Act symposium, Feb. 17, Capitol Visitor Center, Washington, DC.

Du, E., C.R. Jackson, J. Klaus, and L. Hopp. 2011. Perching and interflow occurrence over a shallow argillic layer in a low relief upper Coastal Plain watershed. POSTER. 2011 American Geophysical Union Conference, December 5-9, San Francisco, CA.

Jackson, C.R., K.B. Vache, and E. Du. 2011. Parameter choice and constraint in hydrologic models for evaluating land use change. POSTER. 2011 American Geophysical Union Conference, December 5-9, San Francisco, CA.

Griffiths, N. and C.R. Jackson. 2011. What do we need to learn about global change effects in ecosystem science? Global Change Effects on Aquatic Systems: A symposium inspired by the work of Patrick J. Mulholland. November 5, Oak Ridge, TN.

Jackson, C.R. 2011. Forest Water Quality: What's the baseline for evaluation? American Fisheries Society 141st Annual Meeting, Sept 4-8, Seattle, WA

Jackson, C.R., K.B. Vache, E. Du, J.J. McDonnell, and J.I. Blake. 2011. Modeling issues in up-scaling field and small watershed biogeochemistry data from biomass production experiments. Ecological Society of America Annual Meeting 2011, August 8-12, Austin, TX.

Griffiths, N.A., P.J. Mulholland, C.R. Jackson, and C.T. Garten Jr. 2011. Biogeochemistry of forested watersheds in the Upper Coastal Plain of the Southeastern U.S. prior to short-rotation pine for bioenergy. Gordon Conference – Catchment Science: Interactions of Hydrology, Biology, and Geochemistry. July 10-15, Bates College, Lewiston, ME.

Mulholland, P.J., N.A. Griffiths, C.R. Jackson, J.J. McDonnell, J.I. Blake. 2011. Short rotation woody biomass sustainability. DOE Office of Biomass Programs Feedstocks Platform Review. April 6, Annapolis, MD.

Jackson, C.R. 2011. Effectiveness of Forestry Best Management Practices: How good is good enough? Dept. of Forestry and Environmental Conservation Seminar. Virginia Tech University, January 31, Blacksburg, VA.

Rugel, K., S.W. Golladay, C.R. Jackson, D.W. Hicks, and J.F. Dowd. 2010. Identifying groundwater-stream interaction in a Karst region: Lower Flint River Basin, Georgia, USA. POSTER. 2010 American Geophysical Union Conference, December 13-17, San Francisco, CA.

Jackson, C.R., L. Hopp, J.J. McDonnel, J. Greco, and J.I. Blake. 2010. Vadose zone hydrology in low relief terrain: The importance of lateral subsurface flow. POSTER. 2010 American Geophysical Union Conference, December 13-17, San Francisco, CA.

Williamson, M.F., C.R. Jackson, J.C. Hale, and H.F. Sletten. 2010. In-situ hydraulic conductivities of soils and anomalies at a fugure biofuel production site. POSTER. 2010 American Geophysical Union Conference, December 13-17, San Francisco, CA.

Webster, J.R., E.F. Benfield, K. Cecala, J.F. Chamblee, C. Dehering, T.Gragson, J. Hepinstall, C.R. Jackson, J. Knoepp, D. Leigh, J. Maerz, and H.M. Valett. 2010. Water quality and exurbanization in southern Appalachian streams. The Conservation and Management of Rivers: 20 Years On. University of York, England. 6-9 Sep 2010.

Jackson, C.R. 2010. Surprises, ironies, and paradoxes of water management in the ACF basin. ACF Water Conference and Summit, June 1-3, Kirbo Center at Bainbridge College, Bainbridge, GA.

Price, K., Jackson, C.R., Parker, A.J., Dowd, J., Reitan, T, and Cyterski, M. 2010. Effects of watershed land use and geomorphology on stream baseflows in the southern Blue Ridge Mountains. April 13-18, Association of American Geographers 2010 Annual Meeting in Washington, D.C.

Jackson, C.R. 2010. Applying a broad view of hydrologic connectivity to ACF water resource issues. UF Water Institute Symposium, February 24-25, Gainesville, FL.

Jackson, C.R. 2010. Water quality, flowpath, and hydrologic modeling issues related to intensified forestry for producing cellulosic biofuels. Watershed Perspective on Bioenergy Sustainability Workshop, Oak Ridge National Laboratory, February 3-4, Oak Ridge, TN.

Jackson, C.R. 2009. A tour of ACF water quality issues. Session 33: Update on Stream Quality in Georgia. Georgia Environmental Conference, August 26-28, Savannah, GA.

Jackson, C.R. 2009. Minimum explanatory complexity and the impossibility of universal stream classification. Joseph Jones Ecological Research Center Seminar, July 23, 2009.

Carroll, G.D. and C.R. Jackson. 2009. Linkages between simple sediment metrics and aquatic communities in streams of the Piedmont ecoregion of Georgia. Georgia Water Resources Conference, April 27-29, University of Georgia.

Romeis, J., C.R. Jackson, D.E. Radcliffe, and L.M. Risse. 2009. Variability in Streamflow, Water Quality, and Phosphorous Loading in Forested and Agricultural Headwater Streams in the Upper Etowah River Basin. POSTER. Georgia Water Resources Conference, April 27-29, University of Georgia.

Price, K., C.R. Jackson, and A.J. Parker. 2009. Effects of Land Use on Baseflow Hydrology in the Southern Blue Ridge Mountains, USA. POSTER. Georgia Water Resources Conference, April 27-29, University of Georgia.

Romeis, J., C.R. Jackson, L.M. Risse, D.E. Radcliffe, and P. Brown. 2009. Hydrologic phosphorus transfer following field-based identification of crictical source areas. USDA-CSREES National Water Conference, February 8-12, St. Louis, MO.

Jackson, C.R. 2009. Land Use and Water Quality Relationships in the ACF Basin. National Academy of Environmental Design Water and Sustainability Symposium. February 16-17, University of Florida.

Jackson, C.R., M. Miwa, S.B. Terrell, W.B. Summer, and N.E. Fraser. 2008. Lessons Learned from Recent Paired Watershed Assessments of Forestry Operations in Georgia. Fall 2008 American Geophysical Union Conference, San Francisco, CA, December 15-19.

Price, K., C.R. Jackson, and A.J. Parker. 2008. Variation of Surficial Soil Hydraulic Properties Across Land Uses in the Southern Blue Ridge Mountains. POSTER. Fall 2008 American Geophysical Union Conference, San Francisco, CA, December 15-19.

Jackson, C.R. and C.M. Pringle. 2008. Un-natural but Ecologically Preferable Flow Regimes. Lake Seminole Workshop. November 17-18, Joseph Jones Ecological Research Center, Newton, GA.

Jackson, C.R. 2008. Effectiveness of Southeastern Forestry BMPs and Remaining Scientific Issues. From Forest to Finished Products Conference and Expo. November 17-19, Georgia Center for Continuing Education, Athens, GA.

Jackson, C.R. and C.P. Pringle. 2008. Un-natural but Ecologically Preferable Flow Regimes. Southeastern Environmental Flows Conference. October 27-29, Athens, GA.

Rugel, K., S.W. Golladay, C.R. Jackson, J. Dowd, and D.W. Hicks. 2008. Assessing the Affects of Groundwater Withdrawals on Baseflow Recession Behavior of Coastal Plain Streams in Southwest Georgia Using Historic Stream Flow Records. Southeastern Environmental Flows Conference. October 27-29, Athens, GA.

Price, K., A.J. Parker, and C.R. Jackson. 2008. Land Use Effects on the Surficial Hydrologic Characteristics of Soils in the Blue Ridge Mountains. Coweeta LTER Summer Meeting, Coweeta Hydrologic Laboratory, June 24, 2008.

Jackson, C.R., R. Fuerstenberg, G. Lucchetti, K. Richter, and R. Timm. 2008. Retrospective Assessments of Streams Draining Ideal Developments: Unplanned Experiments to Explore the Upper Boundaries of Stormwater Mitigation. 2nd Symposium on Urbanization and Stream Ecology, Salt Lake City, UT, May 23-24, 2008.

Price, K., A.J. Parker, and C.R. Jackson. 2008. Land Use Effects on the Surficial Hydrologic Characteristics of Alluvial and Saprolitic Soils in the Southern Blue Ridge Mountains. Association of American Geographers 2008 Annual Meeting, Boston, MA, April 15-19, 2008.

Romeis, J.J., C.R. Jackson, D.E. Radcliffe, M.L. Risse, and J. Bryant. 2008. Phosphorus fluxes in headwater streams draining commercial poultry operations in the upper Etowah River basin, Georgi. POSTER**.** 2008 Carl E. Kindsvater Symposium on Water Resources and the Environment. March 25, Atlanta, GA.

Romeis, J.J., C.R. Jackson, D.E. Radcliffe, M.L. Risse, and J. Bryant. 2008. Estimating phosphorus loads in streams draining poultry-pasture operations in the upper Etowah River basin, Georgia. 2008 USDA-

Cooperative State Research, Education, and Extension Service National Water Conference, February 3-7, Sparks, NV.

Jackson, C.R. 2008. The Eternal Conflict Between Parameter Parsimony and Full System Representation: Examples from Stream Geomorphology and Hydrology. Warnell School of Forestry and Natural Resources Seminar Series, University of Georgia, January 24, 2008.

Jackson, C.R. and J.V. Schneier. 2007. Hortonian overland flow in humid forested environments: Occurrence, measurement, characterization, and importance. Fall 2007 American Geophysical Union Conference, San Francisco, CA, December 10-14.

Romeis, J., C.R. Jackson, D.E. Radcliffe, L.M. Risse, and J. Bryant. 2007. Phosphorus Fluxes in Headwater Streams Draining Non-Research Poultry Operations in North-Central Georgia, USA. POSTER. Fall 2007 American Geophysical Union Conference, San Francisco, CA, December 10-14.

Jackson, C.R. 2007. Riparian zone structure and function in the Southern Appalachians. Riparian Zone Workshop. USFS Coweeta Hydrologic Laboratory, Otto, NC. November 6.

Jackson, C.R., D.M. Amatya, W.M. Aust, C.A. Dolloff, M. Miwa, C.C. Trettin, and R.W. Skaggs. 2007. Current paired watershed studies: the southeastern U.S. **Invited Presentation**. Society of American Foresters 2007 National Convention, October 23-27, Portland, OR.

Terrell, S., W.B. Summer, and R. Jackson. 2007. Effects of timber harvesting and site preparation on hydrology and sediment transport. POSTER. Society of American Foresters 2007 National Convention, October 23-27, Portland, OR.

Risse, L.M., D.E. Radcliffe, J. Romeis, R. Jackson, and Z. Lin, 2007. Phosphorus trading in the Etowah River Basin. Abstracts of the Soil and Water Conservation Society 2007 Annual Conference, July 21-25, 2007, Tampa, FL. www.swcs.org <http://www.swcs.org/>, pg.135.

Romeis, J.J., C.R. Jackson, D.E. Radcliffe, M.L. Risse, and J. Bryant. 2007. Variability in hydrology, soil phosphorus, and water quality of streams draining poultry-pasture operations in the Etowah River basin, Georgia. Poster. 2007 Annual SERA–17 Meeting, June 11-13. Fayetteville, Arkansas.

Carroll, G.D. and C.R. Jackson. 2007. Piedmont stream litter inputs and fluxes: correlations with riparian conditions and urbanization. POSTER. Georgia Water Resources Conference, March 27-29,T. Rasmussen, G.D. Carroll, and A. Georgakakos, Eds. University of Georgia, Athens, GA.

Galang, M., C.R. Jackson, L.A. Morris, D. Markewitz, and E.A. Carter. 2007. Hydrologic behavior of gullies in the South Carolina Piedmont. POSTER. Georgia Water Resources Conference, March 27-29,T. Rasmussen, G.D. Carroll, and A. Georgakakos, Eds. University of Georgia, Athens, GA.

Risse, L.M., Z. Lin, D.E. Radcliffe, J. Romeis, and C.R. Jackson, 2007. Framework for Trading Phosphorus Credits in the Lake Allatoona Watershed. In: Watershed Management to Meet Water Quality Standards and TMDLs, Proceedings of the 10-14 March 2007 Conference, Crowne Plaza Riverwalk, San Antonio, Texas. Published by ASABE, St. Joseph, MI. pp. 44-52.

Jackson, C.R. 2007. Considerations in designing headwater stream studies to inform forest management decisions. Riparian Management in Headwater Catchments: Translating Science into Management. University of British Columbia, February 19-21. Vancouver, BC.

Andrade, T. M. C., Dias, H. C. T., Jackson, R. 2007. Variable Source Areas: Identification and Uses on Watershed Management. *In:* XVI Simpósio de Iniciação Científica. 7-10/feb/2007. Viçosa-MG. UFV.

Romeis, J.J., C.R. Jackson, D.E. Radcliffe, M.L. Risse, and J. Bryant. 2007. Phosphorus Delivery from Streams Draining Poultry Operations in The Upper Etowah River Basin, Georgia. USDA-CSREES National

Water Conference, Jan. 28 - Feb. 1, Savannah, GA.

Jackson, C.R. 2007. Forests and water in the southeastern U.S. **Invited Presentation**, 4rth Meeting of National Academies NRC Committee on Hydrologic Effects of Forest Management, January 22-23, Atlanta, GA.

Jackson, C.R. 2006. Legacy Agricultural and Current Forestry Sediments: Review of Recent Studies. **Invited Presentation**. NCASI Southern Regional Meeting, Charleston, SC, June 27.

Jackson, C.R. 2006. Roots, Rot, Regolith, Response. Critical Zone Exploration Network (CZEN) Workshop. USGS Water Science Office, Atlanta, GA.

Jackson, C.R. 2005. John D. Hewlett (1922-2004) and the variable source area concept. **Invited Presentation**. Fall 2005 American Geophysical Union Conference, San Francisco, CA, December 5-9.

Jackson, CR. 2004. Effectiveness of Forestry Best Management Practices. **Invited Presentation**. Alabama Department of Environmental Management WaterQuest and Nonpoint Source Watershed Forum, February 10-11. Birmingham AL.

Jackson, C.R. 2002. Managing water quality in sustainable forestry. **Invited Presentation**. NCASI Southern Regional Meeting, June 19. Savannah, GA.

Research Grants (I am lead PI unless otherwise noted)

CWT LTER Renewal – Pending. $2,516,000. Examining long-term southern Appalachian ecosystem dynamics through interactions and indirect effects. Rhett Jackson (PI) and 31 co-investigators from nine institutions and the USFS. Funded by NSF.

Wetlands and agriculture. $264,508. Darold Batzer (Entomology) is lead PI. USEPA. 10/2015-9/2018.

Monitoring, Analysis, and Synthesis of a Watershed Scale Assessment of Hydrologic and Water Quality Responses to Intensive Cellulosic Biofuel Silviculture. $380,889. USDA Forest Service SRS. 7/1/2014-12/31/2018.

Continued Monitoring and Analysis of Hydrologic and Water Quality Responses to Basin-scale Intensive Woody Biomass Production. $262,500. US Dept. of Energy Bioenergy Technology Office. March 15, 2014 – March 30, 2016.

Total Water Use and Source Partitioning in Woody Bioenergy Crops Determined by Coupled Mass Flux and Stable Isotope Signatures. Doug Aubrey (Warnell and SREL) is lead PI. My portion is $250,958. USDA-AFRI. September 1, 2013 – August 31, 2018.

DEB 1440485. Coweeta LTER Renewal: The interacting effects of hydroclimate variability and human landscape modification in the southern Appalachian Mountains. Ted Gragson (PI) and 32 co-investigators from twelve Universities and the USDA Forest Service. Funded by NSF. $2,593,333. 2014-2016.

Sustainable Water Use and Bioenergy: Application of Isotopic Tracer Techniques to Improve Methods for Estimating Water Use in Intensively Managed Woody Crop Systems. $180,776. USDA Forest Service. December 14, 2012 – June 30, 2016.

Potential and Actual Evapotranspiration Estimation in Southeastern Watersheds Vegetated with Pine Forests Intercropped with Switchgrass. $74,352. USDA Forest Service. November 1, 2011 – December 31, 2015.

Analysis of Chemistry and Herbicide Data from the Dry Creek Paired Watershed Study. $32,050. National Council for Air and Stream Improvement. Jan 1, 2012 – June 30, 2013.

Development of a Summary of Biological, Hydrological, and Water Quality Information Relevant to the Savannah River Basin Sustainable Rivers Project. $17,900. United States Army Corps of Engineers. Sept. 20, 2011 – August 31, 2012.

Monitoring of Robust Redhorse (Moxostoma robustum) Spawning Behavior Responses to Flow and Water Quality Variation. $47,000. USGS. Sept. 1, 2011 – August 31, 2013.

Baseline Instrumentation and Watershed Characterization for Assessment of Hydrologic and Water Quality Response To Intensive Cellulosic Biofuel Silviculture. C.R. Jackson. $326,000. Funded by USDOE and USDA Forest Service. December 14, 2009 – December 31, 2014. Continuation of the same for $267,361.

Characterization of Flow Paths, Residence Times, and Media Chemistry in Complex Landscapes. C. R. Jackson (PI). $291,000. USDA Forest Service. September 1, 2009 – August 31, 2014.

Evaluation of Sediment Dynamics at Gravel Bars in the Upper Savannah River. US Department of Defense, US Army Corps of Engineers. C.R. Jackson (PI) $52,000. 9/15/2009 – 1/7/2011.

Identifying Locations of High Connectivity between Floridan Aquifer Water and Surface Waters at Lineament Intersections with Tributaries of the Lower Flint River. C.R. Jackson. $18,000. Funded by USGS. March 1, 2009 – February 28, 2010.

DEB 0823293. Coweeta LTER Renewal: Southern Appalachia on the Edge – Exurbanization & Climate Interaction in the Southeast. Ted Gragson (PI) and 29 co-investigators from eight Universities and the USDA Forest Service. Funded by NSF. $8,026,123. 2008-2014.

Lower Flint River Basin Habitat Conservation Planning. J.T. Peterson, C.R. Jackson, USGS, and GADNR. Funded by USFWS. $117,000. August 1, 2007 – July 31, 2009.

Doctoral Dissertation Research: Geomorphic and Anthropogenic Controls on Baseflow Discharge of Southern Blue Ridge Mountain Streams. NSF Doctoral enhancement grant for Katie Price under the direction of A.J. Parker and C R. Jackson. NSF. $12,000. April 1, 2007 – March 31, 2009.

Hillslope Flow Routing, Contaminant Transport, and Water Uptake in Zero-Order Watersheds Subject to Intensive Forest Plantation Management at the Savannah River Site, South Carolina. C.R. Jackson (PI). $109,000 for initial efforts. USDA Forest Service. August 1, 2004 - April 30, 2008.

A framework for trading phosphorus credits in the Lake Alatoona watershed. D. Radcliffe (PI). Co-PIs: L. Fowler, C.R. Jackson, A. Keeler, M. Risse. $550,000. USDA CSREES program. 2003-2007.

Investigation of the Effectiveness of Georgia's Silvicultural BMPs. C.R. Jackson (PI). Co-PIs: Larry Morris, Dan Markewitz, Todd Rasmussen, Dale Green, Ben Jackson. $475,000 total over four years. USEPA. 2000-2004. Additional funding provided by NCASI ($25,000) and Weyerhaueser ($16,000) for 2004-2006.

Phosphorus Storage and Transport in Headwaters of the Etowah River Watershed. $18,000. USGS Georgia WRRI. 2005.

The development and evaluation of tools for evaluating flow requirements in streams in the Lower Flint River Basin, Georgia. J.T. Peterson (PI). C.R. Jackson (Co-PI). Approximately $400,000. Georgia DNR. 2001-2005.

Integrated Headwater Stream Riparian Management Study. C.R. Jackson (PI). Co-PIs: D.P. Batzer, B. Chapman, and J.B. Wallace. $87,000 over two years. Funded by National Council for Air and Stream Improvement. 1998-2000.

Assessment of the recovery of macroinvertebrate and amphibian populations following logging of headwater streams in the Coast Range of Washington State. C.R. Jackson (PI) and D.P. Batzer (Co-PI). $33,000 total

over one year. Funded by Washington State Department of Natural Resources and the National Council for Air and Stream Improvement. 2001-2002.

Piedmont River Sediment Budget. C.R. Jackson (PI). Co-PIs: David Leigh, Larry West. $66,000 total ($20,000 initial, with two renewals of $40,000 and $6,000) over three years. Funded by National Council for Air and Stream Improvement. 1998-2001.

DeKalb County Dredging Assessment. Ben Jackson (PI). Co-PIs: C.R. Jackson, Jay Shelton, Terry Sturm (Georgia Tech). $130,500 total (initially $55,000 to UGA and $70,000 to Georgia Tech with $5,500 renewal for UGA). DeKalb County. 1998-2002.

Assessment of Timber Harvest Effects on Coastal Plain Depressional Wetlands. Darold Batzer (PI) and Rhett Jackson (Co-PI). $30,000 total ($10,000/year with renewal each year) over three years. Funded by Turner Foundation with cooperation and in-kind services from International Paper (formerly Union Camp). 1998-2001.

Trout stream buffer study. Jim Kundell (PI). Co-PIs: J. Meyer, L. Kramer, C.R. Jackson, and T. Rasmussen. School of Forest Resources portion totals $75,000 ($25,000 per year) over three years. Funded by the Georgia Legislature. 2000-2002.

Analysis of Hydrologic and Sediment Data from the Dry Creek Paired Watershed Study on Southlands Forest. $126,000. Funded by NCASI with in-kind support from International Paper. August 1, 2002 – April 30, 2008.

Editorships

Associate Editor

Forest Science – Applied Research,Associate Editor, 2013 - 2016
Southern Journal of Applied Forestry, Associate Editor, 2006 – 2013 (ended with the transition of the journal)
Wetlands, Associate Editor, 2007 – 2009.

Journals For Which I Have Conducted Peer Review (36 different journals)

Water Resources Research; Hydrology and Earth Systems Science; Journal of Hydrology; Hydrological Processes; Advances in Water Research; Journal of the American Water Resources Association; Wetlands; Journal of the North American Benthological Society; Bioscience; Journal of Environmental Quality; Forest Science; Canadian Journal of Forest Research; Journal of Environmental Engineering; ASCE Journal of Hydraulic Engineering; Transactions of the American Society of Agricultural and Biological Engineers; Transactions of the American Society of Agricultural Engineers; Transactions of the American Fisheries Society; Freshwater Science; Environmental Management; Forest Ecology and Management; Journal of Soil and Water Conservation; River Research and Applications; Soil Science Society of America Journal; Southern Journal of Applied Forestry; Northern Journal of Applied Forestry; Journal of Wildlife Management; Hydrogeology Journal; Journal of Environmental Modeling and Software; Landscape and Urban Planning; Nonlinear Analysis: Hybrid Systems; Earth Interactions; Ecological Engineering; Water (online); Environmental Pollution; Forests (online).

Other Reviews

External reviewer for Master's in Natural Resources Program at NC State University
External P&T Dossier Reviewer for Several Universities Including: Virginia Tech, NC State, West Virginia, Auburn, Idaho, Colorado, Missouri, Louisiana State University
Reviewer, NRC Report: Hydrologic Effects of a Changing Forest Landscape.
External Reviewer, West Virginia Flood Analysis Technical Team (FATT)
Reviewer for various grant programs including USGS, NSERC, Sea Grant, CAL-FED, and others.

Public Service

Membership in Professional Societies

American Geophysical Union

American Water Resources Association
Registered Professional Engineer in State of Washington since 1994

Professional Conference Sessions Organized

Planning Committee, January 2015 SESAF meeting, Saint Simons Island, GA
Steering Committee Member, ASABE ET Conference, 2014
Steering Committee Member, NCASI Forestry BMP Symposium, 2014
Session Organizer, Moderator, 2012 LTER All Scientists Meeting, Estes Park Colorado: "Water Quality Variability across Climatically, Geologically, and Morphologically Similar Watersheds: Implications for stream ecosystems and ecological thresholds for anthropogenic change."
Co-Convener, Session H12, "Structuring and Informing Physically-based Watershed Models with Distributed Monitoring of Fluxes and State Variables", Fall 2011 American Geophysical Union Meeting, Dec. 5-9, San Francisco, CA.
Session Organizer, Moderator, 2007 Georgia Water Resources Conference Environmental Flows Panel
Group Leader, IAHS SLICE workshop, September 25-28, 2005, HJ Andrews Experimental Forest, OR.
Steering committee member, Forestry Best Management Practices Research Symposium, April 15-17, 2002, Atlanta GA.

University Service

External Awards Committee, 2017.
President's Faculty Advisory Committee, 2016-2017
University P&T Professional and Applied Studies Review Committee, 2016.
Search Committee Member, Crop and Soil Science, Assistant Professor of Pedology, 2016-2017.
Reviewer, Office of Vice President for Research Grant Program, 2011-2013.
Graduate Council, (Admission and Retention Committee) 2007- 2011 (Chair, ARC, 2009-2011)
University of Georgia Faculty Admissions Committee, 2005-2011. Secretary, 2005-2008.
Admissions Office Review Team, 2006-2007. Chairperson.
Environmental Engineering Curriculum Committee, 2007.
Engineering Distinguished Lecturer Committee, 2007 – 2008.
Deputy Director, Undergraduate Water Resources Certificate Program. 2002 – present.
University of Georgia Representative to Oconee River Greenway Commission, 1999-2006.
Environmental Engineering Research Focus Committee, 2006.
Member, Faculty of Engineering, 2002 – 2012.
Member, Academy of the Environment, 2006 – (this academy is largely defunct).

Warnell School of Forestry and Natural Resources Service

Recruitment Committee, 2016-
Natural Resources Recreation and Tourism Search Committee, 2015
Ad-hoc Committee to Edit Warnell P&T Guidelines, 2014
Warnell Strategic Planning Committee, 2014-2015
Energy Ecologist Search Committee, 2014-1015
Graduate Affairs Committee, 2015-present
Honors and Awards Committee, 2014-present
Sustainability Search Committee, 2013
Ad-Hoc Committee to Review Associate Dean for Research Position, 2013
NRRT Search Committee, 2013
Alumni Staff Awards Committee, 2011-2013
Third year review committee, 2011 (Chair)
Natural Resources Recreation and Tourism Search Committee, 2010
Ad-hoc Advisory Committee for Associate Dean for Academics Search, 2009 (Chair)
Post-tenure Review Committee, 2009 (Chair), 2004
Graduate Affairs Committee, 2015-present
Honors and Awards Committee, 2013-present
Undergraduate Affairs Committee, 1997-2012. Chairperson 2007-2012
Teaching Effectiveness Committee, 2004-2015, Chairperson 2012-2014

Dean Search Committee, 2006-2007
Fisheries Scientist Search Committee, 2006-2007
Water Economist Search Committee, 2005
Dean Search Committee, 2003
Aquatic Toxicologist Search Committee, 2001
Administrative Committee, 1999-2000, 2010-present
Forest Finance Search Committee, 2010, 1998

Service to the Profession and Public

Assisted with GFC/NCASI Cypress Initiative 2014-2015

Hydrologic monitoring advisor to Guangdong Province Forestry Administration. Two trips to Guangdong Province, China - September 2005 and September 2006. Presented lectures to Guangdong Forestry Research Institute and South China Agricultural University. Visited water quality monitoring installations and provided advice and reference materials for the research program. Hosted Director of Hydrologic Studies of the Guangdong Forest Research Institute as a visiting scholar at University of Georgia for one year.

Southern Forest Research Partnership (SFRP) Water Team member, 2004-present

Senate Bill 460 Rules Committee - evaluated guidelines for issuance of variances to State of Georgia stream buffer laws. 2004.

Athens-Clarke County citizens stormwater advisory committee, 2003-2004.

Georgia Forestry Association Environmental Committee, 1999-present.

> Georgia Forestry Association, Georgia Forestry Commission, and American Forests and Paper Association ad-hoc committees to revise Georgia's forestry BMPs for floodplains and ephemeral areas, 2001-present.
>
> Organized and conducted field tours on BMP issues for industry representatives, GFC water quality foresters, NCASI Sediment group.
>
> Provided floodplain and headwater BMP training workshops for GFC water quality foresters and industry representatives.

Co-instructor Harvest Planning continuing education short course, 2001, 2002, 2003, 2004, 2005, 2006.

Washington State Independent Science Panel - Adjunct member for technical review of State of Washington Stormwater Management Manual. 2003.

Lake Alatoona Preservation Authority Scientific Advisory Group. 2000-2003.

Lecturer and ad-hoc program committee, Forestry Agent Special Area Training (FASAT). 1998,1999, 2002.

Georgia Conservancy Sediment TMDL Technical Advisory Group. 2000-2002.

State of Georgia's Stream Buffer Variance Criteria Technical Advisory Committee. 2000. Chairperson.

Co-Chairperson, McNutts Creek Watershed Study Group. 1999-2001.

Various water quality presentations for the general public including League of Women Voters (Franklin, NC), Rotary Club (Ila, GA), Kiwanis Club, ASCE local chapter, Community Tree Council, Botanical Garden River Rambles, Greenfest Water Forum, LEAD Athens, Barrow Elementary School, Dustbowl Drought Awareness Benefit Concert, Georgia Public Television (Georgia Outdoors), Georgia Public Broadcasting, Atlanta Journal

Constitution Editorials, Newsmakers with Tim Bryant WGAU radio show, Timber Talk Radio Show (Arkansas), and others.

Various water quality presentations and field trips for agencies, NGOs, and industry meetings including a Forest Hydrology and Water Quality Training Class for GAEPD, a forestry BMP field trip for a National Research Council Committee, a Forestry BMP workshop for MeadWestvaco, a Washington State DNR forested wetlands workshop, and others.

MICHAEL A. JAYJOCK, PhD, CIH

[redacted]

EDUCATION

Doctor of Philosophy in Environmental Engineering, 1984
Drexel University, Philadelphia, Pennsylvania

Master of Science in Environmental Engineering, 1981
Drexel University, Philadelphia, Pennsylvania

Bachelor of Science in Secondary Edition**,** 1968
The Pennsylvania State University, State College, Pennsylvania

PROFESSIONAL CERTIFICATION

American Board of Industrial Hygiene, Certified Industrial Hygienist # 6186 – Comprehensive Practice

PROFESSIONAL EXPERIENCE

Sole Proprietor, Jayjock Associates, LLC. 2010-

http://www.jayjock-associates.com/

Work with clients to:

- Develop, conduct and manage exposure assessment and mathematical modeling projects
- Develop and document exposure limit recommendations
- Develop and teach short courses, presentations and seminars in exposure assessment, mathematical modeling and risk assessment
- Provide litigation support vis-à-vis expert witness services
- Provide long term personal education and mentoring on the above subjects to in-house junior professionals

Senior Analyst, The LifeLine Group, Inc. 2004-Present

- Responsible for estimating human health risks from exposure to chemical agents including chemical products, reactants and intermediates.
- Responsible for the Quality Assurance and Quality Control of LifeLine Group work products.

Senior Analyst, LINEA, Inc. 2004-2011

Responsible for estimating human health risks from exposure to chemical agents reactants and intermediates, including:

- Develop, conduct and manage exposure assessment and mathematical modeling projects
- Develop and document exposure limit recommendations
- Develop and teach short courses, presentations and seminars in exposure assessment, mathematical modeling and risk assessment
- Litigation support vis à vis expert witness services

MICHAEL A. JAYJOCK, PhD, CIH

168 Mill Pond Place, Langhorne, PA 19047 (215) 968-3102

Senior Research and EHS Fellow and Manager, Risk Assessment, Rohm and Haas Company, 1995-2003.

- Developed, conducted and managed project work for exposure/risk assessment and mathematical modeling projects.
- Trained, supervised and managed 3 subordinates.
- Developed and managed an inhalation and dermal exposure research laboratory.
- Served as internal expert on exposure/risk assessment and epidemiology including the establishment of occupational exposure limits (OELs) and emergency response planning guidelines (ERPGs).
- Represented the Rohm and Haas Company within scientific venues such as the U.S. EPA Science Advisory Board and the Long Range Research Initiative of the American Chemistry Council.
- Developed and delivered courses and presentations on exposure assessment, mathematical modeling and uncertainty.

MICHAEL A. JAYJOCK, PhD, CIH

168 Mill Pond Place, Langhorne, PA 19047 (215) 968-3102

Technical Fellow and Manager of Risk Assessment, Rohm and Haas Company 1990-1995

- Developed, conducted and managed project work for exposure/risk assessment and mathematical modeling projects.
- Served as internal expert on exposure/risk assessment and epidemiology including the establishment of occupational exposure limits.
- Represented the Rohm and Haas Company within scientific venues such as the American Industrial Hygiene Association and the American Chemistry Council.

Senior Product Safety Engineer, The Rohm and Haas Company 1984 – 1990

- Advised the business on regulatory issues.
- Served as internal expert on exposure/risk assessment and epidemiology.

Scientist, Rohm and Haas Company 1983-1984

- Operated laboratory synthesis and testing equipment and reported test results.

Group Leader, Rohm and Haas Company, 1979-1984

- Management the operations of the Physical Testing Laboratory including direct supervision of 15 subordinates and the physical plant.
- Coordinate industrial hygiene activity for entire Plastics Engineering Laboratory complex.

Plastics Engineer, Rohm and Haas Company, 1969-1979

- Technical sales service and project management.
- Research and development of adhesives and color matching patches of plastics.
- Coordinate industrial hygiene activity for entire Plastics Engineering Laboratory complex.

HONORS

- American Industrial Hygiene Association Distinguished Service Award for Outstanding Contributions to the Industrial Hygiene Profession, 2014
- American Industrial Hygiene Association Fellow, 2003-
- AIHA Press Publications Award of Excellence, Outstanding Year 2000 General Publication, *Risk Assessment Principles for the Industrial Hygienist*, 2000.

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PUBLICATIONS

Jayjock M.A., A. A. Havics: Residential Inter-zonal Ventilation Rates for Exposure Modeling, in draft, Journal of Occupational and Environmental Hygiene, 2017

Maier A., M.J. Vincent, A. Parker, B.K. Gadagbui and M.A. Jayjock: A tiered asthma hazard characterization and exposure assessment for evaluation of consumer product ingredients, Regulatory Toxicology and Pharmacology, Volume 73, Issue 3, December 2015, Pages 903-913

Waters M., L. McKernan, A. Maier, M. Jayjock, V. Schaeffer & L. Brosseau: Exposure Estimation and Interpretation of Occupational Risk: Enhanced Information for the Occupational Risk Manager, Journal of Occupational and Environmental Hygiene, Volume 12, Supplement 1, November 2015, pages S99-S111

Tank Vapor Assessment Team: Hanford Tank Vapor Assessment Report, SRNL-RP-2014-00791, Revision 0, October 30, 2014. http://srnl.doe.gov/documents/Hanford_TVAT_Report_2014-10-30-FINAL.pdf Last accessed November 14, 2014.

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Jayjock, M.A., P.W. Logan, B. Mader, J. Owens, J. Eldridge, M. Costello, M. Morken, P. Lieder: Modeled Comparisons of Health Risks Posed by Fluorinated Solvents in a Workplace Spill Scenario, *Ann Occup Hyg (2011) 55(2): 202-213 first published online September 13, 2010 doi:10.1093/annhyg/meq062*

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Arnold, S.F., G. Ramachandran, M.A. Jayjock: Model Selection. Chapter 12 in Mathematical Models for Estimating Occupational Exposure to Chemicals, 2nd Edition, Keil CB, Simmons CE and Anthony TR editors, American Industrial Hygiene Association, ISBN: 978-1-935082-10-1, Fairfax, VA (2009).

Jayjock, M.A., G. Ramachandran, S.F. Arnold: Uncertainty. Chapter 10 in Mathematical Models for Estimating Occupational Exposure to Chemicals, 2nd Edition, Keil CB, Simmons CE and Anthony TR editors, American Industrial Hygiene Association, ISBN: 978-1-935082-10-1, Fairfax, VA (2009).

Reinke P.H. M.A. Jayjock, M. Nicas: Well-Mixed Rooms with Changing Conditions. Chapter 5 in Mathematical Models for Estimating Occupational Exposure to Chemicals, 2nd Edition, Keil CB, Simmons CE and Anthony TR editors, American Industrial Hygiene Association, ISBN: 978-1-935082-10-1, Fairfax, VA (2009).

Jayjock, M.A., M. Stenzel, T.R. Anthony, S.F. Arnold: Why Model? Chapter 1 in Mathematical Models for Estimating Occupational Exposure to Chemicals, 2nd Edition, Keil CB, Simmons CE and Anthony TR editors, American Industrial Hygiene Association, ISBN: 978-1-935082-10-1, Fairfax, VA (2009).

Jayjock, M.A., C.F. Chaisson, Claire A. Franklin, S. Arnold, Paul S. Price: Using publicly available information to create exposure and risk-based ranking of chemicals used in the workplace and consumer products, Journal of Exposure Science and Environmental Epidemiology, 19, 515-524 (2009)

Price, P.S. and M.A. Jayjock: Available data on naphthalene exposures: Strengths and limitations, Regulatory Toxicology and Pharmacology 51 s15-S21, (2008)

Jayjock, M.A. , C.F. Chaisson, S. Arnold, E.J. Dederick: Modeling Framework for Human Exposure Assessment, 17, S81-89, Journal of Exposure Science and Environmental Epidemiology, (2007)

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Jayjock, M.A.: Uncertainty Analysis in the Evaluation of Exposure, Am. Ind. Hyg. Assoc. J. 58 (5): 380-382 (1997).

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Jayjock, M.A. and N. C. Hawkins: Exposure Database Improvements for Indoor Air Model Validation, Appl. Occup. Environ. Hygiene 10 (4): 379-382, April (1995).

Lewis, P.G, and M.A. Jayjock, Risk Assessment Modeling: Allergic Contact Dermatitis Application, American Journal of Contact Dermatitis, 5(3): 143-149, September (1994).

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Weiler, E.D., M.A. Jayjock, and D.E. Greenley: Quality Requirements for Biocides in the 1990s, Quality Assurance: Good Practice, Regulation, and Law., 2(3): 244-250 (1993).

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Committee on Advances in Assessing Human Exposure to Airborne Pollutants: Human Exposure Assessment for Airborne Pollutants, National Research Council Board of Environmental Studies and Toxicology, National Academy of Science, National Academy Press, Washington, D.C. (1991).

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Jayjock, M.A. and S.C. Gad: Hazard and Risk Assessment, Chapter 15 in Product Safety Evaluation Handbook, edited by S.C. Gad, Marcel Dekker, New York (1988).

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PROFESSIONAL COMMITTEES

Reviewer of EPA Draft Guidelines for Human Exposure Assessment, 2016

Hanford Tank Vapor Assessment Team, U.S. DOE, 2014.

Peer Review Panel: Draft Risk Assessment for Trichloroethylene (TCE)/Degreaser Arts/Crafts Uses, U.S. EPA, 2013

Science Advisory Board Panel on Lead Exposure, U.S. EPA
2010-2011

Peer Consultation Panel, Perfluorooctanoic Acid (PFOA) Site-Related Environmental Assessment Program, U.S. EPA
2008.

Peer Consultation Panel on Ethyl Benzene, U.S. EPA – Office of Pollution Prevention & Toxics - Voluntary Children's Chemical Evaluation Program (VCCEP),
2007.

Board of Scientific Councilors, U.S. EPA - Peer Review Panel for Office of Research and Development Science Program
2005

Peer Consultation Panel on Methyl Ethyl Ketone, U.S. EPA – Office of Pollution Prevention & Toxics - Voluntary Children's Chemical Evaluation Program (VCCEP),
2004.

Peer Consultation Panel on Flame Retardants, U.S. EPA – Office of Pollution Prevention & Toxics - Voluntary Children's Chemical Evaluation Program (VCCEP),
2003.

Human Health Research Strategy Panel, U.S. EPA - Science Advisory Board, Executive Committee
2002.

Integrated Human Exposure Committee (IHEC), U.S. EPA - Science Advisory Board, Consultant,
2001-2003

Integrated Human Exposure Committee (IHEC) – U.S. EPA Science Advisory Board Member
1998-2001

Committee on Risk Assessment of Flame-Retardant Chemicals, National Research Council - National Academy of Sciences Committee on Toxicology –
2000.

MICHAEL A. JAYJOCK, PhD, CIH

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Human Health Exposure Assessment Technical Implementation Panel (TIP), American Chemistry Council (formerly Chemical Manufacturers Association)
1999-2001

Science Program Committee, Chemical Industry Institute of Toxicology working on State of the Science (STOTS) research needs in risk assessment
1998

Committee on Risk Assessment, American Industrial Hygiene Association
1998-present

Editorial Board Member – American Industrial Hygiene Journal
1998-2003

Peer-Review Panel for the science program at the National Exposure Assessment Laboratory of the US Environmental Protection Agency (US EPA – NERL)
1996.

Committee on Exposure Assessment Strategies, American Industrial Hygiene Association
1996-present

Committee to Review Risk Management in the DOE's Environmental Remediation Program, National Research Council - National Academy of Sciences
1994

Committee on Advances in Assessing Human Exposure to Airborne Pollutants National Research Council - National Academy of Sciences
1991

EPA Technical Review Committee, EPA/Southwest Research Institute: Project: "Engineering and Toxic Characterization Studies and Development of Unit Operations Predictive Models for New Chemicals."
1989

Health and Safety Committee, Exposure Assessment Task Group (EATG), American Chemistry Council (formerly Chemical Manufacturers Association)
1985-1999

Juhyon Kang

Department of Biological Systems Engineering
University of Nebraska-Lincoln
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EDUCATION

Ph.D. in Food Science and Human Nutrition (FSHN), Iowa State University Co-majoring in Biorenewable Resources and Technology (BRT)	2013-2015
M.S. in Food Science and Human Nutrition, Iowa State University Co-majoring in Biorenewable Resources and Technology (BRT)	2010-2012
B.S. in Energy Resources Engineering, Seoul National University, Korea	2003-2009

PROFESSIONAL EXPERIENCE

Research experience

1. Post-doctorate Research Associate: Lignocellulosic biomass pretreatment and conversion
2. Ph.D. dissertation: *"Environment stewardship by microalgae: air and water"*
3. Master's Thesis: *"Mitigation of ammonia gas from animal house using microalgae"*
4. Undergraduate Thesis: *"The Origin, Finding, and Developing of the Gemstones."*

Teaching experience

1. Teaching Assistant, Food Processing I, Iowa State University	2014
2. Teaching Assistant, Food and Consumer, Iowa State University	2012
3. Teaching Assistant, Digital Computer Concept and Practice, College of Engineering, Seoul National University	2010

Publication

1. Published

(1) Kang J., Wang T., Xin H., and Wen Z., 2014, A laboratory study of microalgae-based ammonia gas mitigation with potential application for improving air quality in animal production operations, Journal of Air and Waste Management Association, 64(3): 330-339. DOI: 10.1080/10962247.2013.859185

(2) Kang J. and Wen Z., 2015, Use of microalgae for mitigating ammonia and CO_2 emissions from animal production operations - Evaluation of gas removal efficiency and algal biomass composition, Algal Research, 11: 204-210. DOI: 10.1016/j.algal.2015.06.020

2. Working paper

(1) Juhyon Kang, Sibel Irmak, and Mark Wilkins, Evaluation of various oxidation techniques for lignin conversion to value-added chemicals

(2) Juhyon Kang, Sibel Irmak, and Mark Wilkins, Comparison of depolymerization efficiency of different types of lignin

(3) Bruce Liscomb, Juhyon Kang, and Mark Wilkins, Does oil-extraction increase redcedar pretreatment efficiency?

(4) Juhyon Kang and Zhiyou Wen, Lab-scale astaxanthin production from *Haematococcus pluvialis* using ammonia gas from animal production operations

(5) Juhyon Kang, Zhixia Ji, Martin Gross, and Zhiyou Wen, Wastewater phosphorus removal kinetics by microalgal biofilm reactors

(6) Zhixia Ji, Juhyon Kang, Martin Gross, and Zhiyou Wen, Microalgal biofilm wastewater treatment in continuous mode

Presentation

1. Poster, "Effect of CO_2 on the microalgal NH_3 removal system in animal house and biomass production", 4th International Conference on Algal Biomass, Biofuels & Bioproducts — June 2014

2. Invited speaker, "Ammonia gas mitigation using algae", 2nd International Conference on Algal Biomass, Biofuels & Bioproducts — June 2012

3. Poster, "Ammonia gas mitigation using algae for biofuel production", UKC — Aug. 2011

4. Poster, "Fungal pilot plant for ethanol co-product beneficiation", Iowa Energy Center 20th anniversary conference — Nov. 2010

SCHOLARSHIPS AND AWARDS

Scholarships

1.	Bernice Kunerth Watt and Raymond D. Watt Endowed Scholarship, FSHN Department scholarship, Iowa State University	Aug. 2012- Dec. 2012
2.	Korean Honor Scholarship, The Embassy of the Republic of Korea	Aug. 2012
3.	International Energy Human Resource Scholarship, KETEP(Korea Institute of Energy Technology Evaluation and Planning) supported by Ministry of Knowledge Economy in Korean Government	Aug. 2010- July 2012
4.	Academic Excellence Scholarship, EMRD(Energy & Mineral Resources Development Association of Korea) supported by Ministry of Knowledge Economy in Korea Government	Oct. 2009
5.	Academic Excellence Scholarship, Energy Resources Engineering Department, Seoul National University	Mar. 2009
6.	Science and Engineering Scholarship, Seoul National University	Sep. 2004
7.	Science and Engineering Scholarship, Seoul National University	Mar. 2004

Awards

1.	Excellence Prize, Paper Competition on Balanced Development of Urban and Rural Areas by Korea Productivity Center *"Balance of Growth and Equilibrium in Local Autonomy Era: Local Governance"*	July 2007
2.	Best Team Prize, Summer Venture Internship, Student Venture Network, Seoul National University	Aug. 2003

EXTRACURRICULAR ACTIVITIES

Leadership Activities

1.	Award Committee, Food Science Department, Iowa State University - Represent graduate student opinion to the faculty and staff awards nomination	Aug. 2013- Jan. 2014
2.	Judge, State Science and Technology Fair of Iowa State University - Senior high school poster judging	Mar. 2014

3. CALS (College of Agriculture and Life Sciences) Technology Advancement Committee, Iowa State University — Oct. 2011-Dec. 2012
- Advise important technology issues and provide input into the use of student computer fees.

4. Judge, State Science and Technology Fair of Iowa — Mar. 2012
- Middle School Seminar judging

Student Club Activities

1. Chair, Catholic Prayer Club "Fiat", Seoul National University — Sep. 2007 – July 2010
- Helped students to be religious through various prayer programs

2. Education Team Leader, Student Venture Network, Seoul National University — Mar. 2003 – Aug. 2005
- Studied various cases of venture enterprises, wrote business plans

Voluntary services

1. Saturday mass music group, St. Thomas Aquinas Church, Ames, IA — 2010-2012

2. Pre-K Catechist, St. Thomas Aquinas Church, Ames, IA — 2014-2015

3. Sensory test preparation, FFA Product Development Competition, IA — June 2014

4. Vacation Bible School music assistant, St. Thomas Aquinas Church, Ames, IA — June 2013

5. Sensory test preparation, FFA Product Development Competition, IA — June 2012

6. Vacation Bible School Nursery leader, St. Thomas Aquinas Church, Ames, IA — June 2012

7. Environment-protecting Volunteer, Korea — Mar. 2008
- Removed oil band spilled by a ship crush in Yellow Sea

8. Catechist, Song-pa dong Catholic Church, Korea — Dec. 2002 – Dec. 2004
- Taught middle & high school students and prepared for mass

RESUME: Dr. Richard A. Keen

Address: [redacted]
e-mail: richard keen@colorado.edu , [redacted]

Citizenship: [redacted]

Education: Ph.D., Geography (Climatology), University of Colorado, 1979.
M.S., Astro-geophysics, University of Colorado, 1972.
B.A., Astronomy, Northwestern University, 1968.

Major Skills and Interests:

- Research in climatology, meteorology, and astronomy.
- In-depth knowledge of the weather and climate of Colorado, the Rocky Mountains, Alaska, and the world.
- Ability to communicate clearly to scientists and the public.
- Professional writing and photography.

Employment:

1998-2011:	Instructor, University of Colorado, Boulder, CO (Instructor emeritus as of 2011).
1986-present:	Author, Photographer, and Meteorological Consultant.
1996-2011:	Academic Scientist, Juneau Ice Field Research Program, Juneau, AK.
1997:	Teacher (Weather & Climate), Summit Middle School, Boulder, CO.
1990-93:	Meteorologist, National Center for Atmospheric Research (NCAR), Boulder, CO.
1987:	Meteorologist, TS Infosystems, Boulder, CO.
1979-87:	Research Associate, University of Colorado, Boulder, CO.
1978:	Science Journalist, *The Miami Herald*, Miami, FL.
1972-79:	Research Assistant, University of Colorado, Boulder, CO.
1969-70:	Meteorological Observer, U.S. Army, Fort Clayton, Canal Zone.
1968:	Research Assistant, NCAR, Boulder, CO.
1968:	Student Advisor, Northwestern University, Evanston, IL.
1967:	Technical Asst., National Radio Astronomy Observatory, Charlottesville, VA
1966:	Research Assistant, Dearborn Observatory, Evanston, IL.
1965:	Computer Operator, Central Penn National Bank, Phila., PA.
1958-64:	Newspaper Carrier, *News of Delaware County*, Upper Darby, PA.

Memberships:

- American Meteorological Society (President, Denver-Boulder chapter, 1984-85, 91-95).
- Lightning Data Center (St. Anthony's Hospital, Denver, CO; Chair, 1997-98).
- Coal Creek (CO) Elementary School Improvement Committee (Chair, 1991-93).
- American Association of Weather Observers
- International Dark-Sky Association
- National Weather Service Co-operative Weather Observer Program (since 1994)

Publications:

- Eight books: *Skywatch West: The Complete Weather Guide* (2004), *Skywatch: The Western Weather Guide* (1987), *Skywatch East: A Weather Guide* (1990), *The Audubon Society Field Guide to North American Weather* (1991), *Minnesota Weather* (1992), *Michigan Weather* (1993), *The Audubon Society Pocket Guide to Clouds and Storms* (1995), and *Iowa Weather* (1999). Currently writing *Colorado Weather*. Weather and/or Astronomy chapters in five other books.
- Ph.D. Thesis (1979): *Temperature and Circulation Anomalies in the Eastern Canadian Arctic, Summer 1946-76*.
- 27 Papers in scientific journals, including *Science, Monthly Weather Review, Journal of Climate, Annals of Glaciology, Geophysical Monographs, Bulletin of the Global Volcanism Network,* and *International Comet Quarterly*.
- Numerous science articles in magazines and newspapers, *including Astronomy, Sky & Telescope, The Denver Post*, and *The Miami Herald*.
- Photographs of meteorological and astronomical subjects in books, magazines, cloud atlases, slide sets, audio recording covers, and as posters and postage stamps.
- Monthly weather column in Coal Creek (CO) *Mountain Messenger* 1984-1997.

DETAILS OF EMPLOYMENT, RICHARD A. KEEN

1998-2010: INSTRUCTOR, Dept. of Atmospheric and Oceanic Sciences, University of Colorado, Boulder, CO.
Duties: Teaching and curriculum development for undergraduate and graduate meteorology and climate courses, including introductory level courses and associated laboratory sections, an upper level course on meteorological data analysis, and a graduate level course on Sun & Climate. Retired January 2011 with title Instructor Emeritus.

1986-present: AUTHOR, PHOTOGRAPHER, and METEOROLOGICAL CONSULTANT.
Duties: As a self-employed writer I authored *Skywatch West: The Complete Weather Guide*, *Skywatch: The Western Weather Guide*, and *Skywatch East: A Weather Guide* (Fulcrum, 2004, 1987 and 1992) and *Minnesota Weather*, *Michigan Weather*, and *Iowa Weather* (American Geographic, 1992, 1993, 1999); co-authored *The Audubon Society Pocket Guide to Clouds and Storms* (Knopf, 1995); and edited and contributed to *The Audubon Society Field Guide to North American Weather* (Knopf, 1991) and nine other books. I have presented lectures and seminars about weather and astronomy to audiences ranging from grade school students to adult education classes, mountaineering clubs, and resort hotel visitors; and, as a consultant, provided meteorological and climatological information to aviation, energy, and legal interests. Some of my weather and astronomy lectures and seminars have been offered for college and/or continuing education credits at the University of Northern Colorado, Colorado State University, Fort Lewis College, the University of Idaho, and the University of Alaska.
Skills: Researching and reporting on a wide variety of weather and climate issues; Writing and editing; Use of personal computers and the Internet; Organizing and presenting weather- and astronomy-related class material; Nature photography.

1996-2011: ACADEMIC SCIENTIST, Juneau Ice Field Research Program, Juneau, AK.
Duties: Teaching and mentoring High School, College, and Graduate students enrolled in a summer field expedition sponsored by the University of Idaho, the University of Alaska, the National Science Foundation, NASA, and other agencies.
Skills: Teaching and advising a variety of students; Operation of meteorological instruments under adverse field conditions; Working and surviving on an Arctic field expedition.

1997: TEACHER (Weather & Climate), Summit Middle School, Boulder, CO.
Duties: Developing curriculum of and teaching a new course on Weather and Climate to 6th, 7th, and 8th grade students at a charter middle school.
Skills: Teaching and curriculum development.

1990-93: METEOROLOGIST, National Center for Atmospheric Research (NCAR), Boulder, CO.
Duties: Observing and forecasting tornadoes over Eastern Colorado for the NCAR "Nowcasting" Experiments during the summers of 1990, 1992, and 1993.
Skills: Short-term weather forecasting; Familiarity with structure and development of severe weather; Use of computerized weather observing and forecasting tools, including AFOS and Doppler Radar.

1987: METEOROLOGIST, TS Infosystems, Boulder, CO.
Duties: Observing and reporting severe local storms over Eastern Colorado for the PROFS (Program for Regional Observing and Forecasting Services, NOAA, Boulder, CO) Severe Storm Verification Experiment.
Skills: Same as for 1990-93 Meteorologist position.

1979-87: RESEARCH ASSOCIATE, University of Colorado, Boulder, CO.
Duties: Basic research on climate change, emphasizing the role of storm systems in year-to-year global climate variations, using a wide variety of weather data; and application of research results to operational monitoring and prediction of el Nino in the tropical Pacific.
Skills: Analysis and prediction of tropical and mid-latitude weather; Extensive knowledge of global, regional, and local climate trends and fluctuations; Publication of scientific results and presentations at conferences; Statistical analysis techniques; Fortran programming.

1978: SCIENCE WRITER, The Miami Herald, Miami, FL.
Duties: Reporting on various science-related stories, most of which were about weather, space, or astronomy. This internship was sponsored by the American Association for the Advancement of Science.
Skills: Ability to investigate and report on newsworthy stories.

1972-79: RESEARCH ASSISTANT, University of Colorado, Boulder, CO.
Duties: Basic research into climate fluctuations of the Arctic, including publication of results and presentations at conferences.
Skills: Statistical analysis techniques; Fortran programming.

1969-70: METEOROLOGIST, US Army Tropic Test Center, Panama Canal Zone
Duties: Surface weather observations; Radiosonde and rocketsonde operations; Operation and maintenance of micro-meteorological network; Field testing of electronic equipment; Meteorological support to aircraft and artillery operations.
Skills: Weather observing and recording, data quality control, and operating, maintaining, and repairing meteorological equipment.

PUBLICATIONS, RICHARD A. KEEN

PROFESSIONAL PUBLICATIONS

Two Centuries of Volcanic Aerosols Derived from Lunar Eclipse Records, 1805-2015
NOAA ESRL Global Monitoring Annual Conference May 23-24, 2017, Boulder, Colorado
https://www.esrl noaa.gov/gmd/annualconference/abs.php?refnum=98-170407-A and
https://www.esrl noaa.gov/gmd/annualconference/abstracts/98-170407-A.pdf

The Calbuco Chronicle: Volcanic aerosols in the post-Pinatubo stratosphere.
NOAA ESRL Global Monitoring Annual Conference May 17-18, 2016, Boulder, Colorado
https://www.esrl noaa.gov/gmd/publications/annual_meetings/2016/abstracts/121-160425-C.pdf and
https://www.esrl noaa.gov/gmd/publications/annual_meetings/2016/posters/P60-Keen.pdf

2015 "Volcanic Aerosol Forcing of the Global Climate Derived from Lunar Eclipse Observations, 1979-2014"
NOAA ESRL Global Monitoring Annual Conference May 19-20, 2015, Boulder, Colorado
Abstract: http://www.esrl.noaa.gov/gmd/publications/annual_meetings/2015/abstracts/100-150401-A.pdf
Poster: http://www.esrl.noaa.gov/gmd/publications/annual_meetings/2015/posters/P-48.pdf

2013. Climate station analysis of existing weather stations in and around Central Alaska Network: Update through 2010. Natural Resource Technical Report. NPS/CAKN/NRTR—2013/662. National Park Service. Fort Collins, Colorado. Published Report-2192597.
Link to IRMA for most recent report: https://irma nps.gov/App/Reference/Profile/2192597
https://irma.nps.gov/App/Reference/DownloadDigitalFile?code=468891&file=Keen_2011_nrssUpdated2013.pdf

2013 "Earth (and Lunar) Based Observations of Volcanic Emissions to the Stratosphere – An Update Through 2011"
NOAA ESRL Global Monitoring Annual Conference May 21-22, 2013, Boulder, Colorado
Abstract: http://www.esrl.noaa.gov/gmd/annualconference/pdfs/69-130415-A.pdf
Slides: http://www.esrl noaa.gov/gmd/annualconference/slides/69-130415-A/slides.html

2012 "Baked Alaska? A century of climate change in Alaska's National Parks" CU Hydrologic Sciences Symposium 2012
http://hydrosciences.colorado.edu/symposium/abstract_details_archive.php?abstract_id=238

2012 "Climate Data Analysis of Existing Weather Stations in and around the Central Alaska Network (CAKN), Update through 2010" Prepared for: National Park Service, Central Alaska Inventory and Monitoring Network, McKinley Park, AK

2010 "Thirty years in the Bull's-eye: a climatology of meter-class snow storms in the Front Range foothills" in *Abstracts of the Hydrologic Sciences Symposium, Boulder, CO, April 1-2, 2010* url:
http://hydrosciences.colorado.edu/symposium/abstract_details_archive.php?abstract_id=155

2008 "Climate Data Analysis of Existing Weather Stations in around the Central Alaska Network (CAKN), Including Denali National Park and Preserve, Wrangell-St. Elias National Park and Preserve, and Yukon-Charley Rivers National Preserve." Prepared for: National Park Service, Central Alaska Inventory and Monitoring Network, McKinley Park, AK

2008 "Climate Forcing Since 1960: What Does the Moon Have to Say?" in *Proc. 2008 SORCE Science Meeting, Santa Fe, New Mexico, February 5-7, 2008* url: lasp.colorado.edu/sorce/news/2008ScienceMeeting/

2006 (with P. Sousanes, K. Redmond, and D. Simeral) "Monitoring Seasonal and Long-term Climate Changes and Extremes in the Central Alaska Network", in *Alaska Park Science: Crossing Boundaries in a Changing Environment*, Proceedings of the Central Alaska Park Science Symposium, September 12-14, 2006 (Volume 6 Issue 2).

2004 (with D. Hofmann, J. Barnes, E. Dutton, T. Deshler, H. Jäger, and M. Osborn) “Surface-Based Observations of Volcanic Emissions to the Stratosphere” , in Volcanism and the Earth’s Atmosphere, Geophysical Monograph 139, American Geophysical Union. http://www.wiley.com/WileyCDA/WileyTitle/productCd-0875909981.html
http://www.gbv.de/dms/goettingen/379792559.pdf
http://www-das.uwyo.edu/~deshler/articles/Hofmann_2004_Chapman_Monog.pdf

2001 "Color of the Moon during Total Lunar Eclipses: A Measure of Volcanic Eruptions", *in Proc. of Seventh Topical Meeting on Meteorological Optics*, Boulder, CO, June 2001.

2001 "Atmospheric Effects: Volcanic aerosol optical thicknesses", *Bulletin of the Global Volcanism Network*, **26**, 5, May 2001.

1998 (with R.G. Barry) “Comments on ‘the association between the BWA index and winter surface temperature variability over Eastern Canada and West Greenland’”, International Journal of Climatology - INT J CLIMATOL, vol. 18, no. 8, pp. 931-931, 1998. DOI: 10.1002/(SICI)1097-0088(19980630)18:8<931::AID-JOC290>3.0.CO;2-R

1997 "Volcanic Aerosol Optical Thicknesses since 1960", *Bulletin of the Global Volcanism Network*, **22**, 11, Nov. 1997.

1996 "Weather and Climate of the San Juans", chapter in "A Naturalist's Guide to the San Juan Skyway", Four Corners Geological Society, Durango, CO.

1993 (with D. Bromwich, F. Robasky, and J. Bolzan) "Modeled Variations of Precipitation over the Greenland Ice Sheet", *J. Climate*, **6**, 1253-1268.

1988 "Equatorial Westerlies and the Southern Oscillation", *in Proc. U.S. TOGA Western Pacific Air-Sea Interaction Workshop* (Univ. Corp. for Atmospheric Research, Boulder, CO), 121-140.

1987 "Equatorial Westerlies and the Southern Oscillation", Preprints, 17th Conference on Hurricanes and Tropical Meteorology (American Meteorological Society, Boston), 31-32.

1985-87 "Surface westerly winds in the equatorial Pacific during the past season from a synoptic perspective", Quarterly reports in *Climate Diagnostics Bulletin* (Climate Analysis Center, NOAA, Washington, DC)

1985 "Observations of 24 comets, 1961-1981", *Intl. Comet Quarterly*, **7**, 48-57.

1985 "Tropical convection and North American cyclones during the 1982-83 el Nino", *Proc. 9th Annual Climate Diagnostics Worksho*p (NOAA, U.S. Dept. Commerce, Washington), 341-345.

1984 "Very remote sensing of volcanic aerosols: el Chichon vs. Agung", *Proc. 8th Annual Climate Diagnostics Workshop* (NOAA, U.S. Dept. Commerce, Washington; NTIS PB84-192418), 84-85.

1984 "Statistical-dynamical model of accumulation on the Greenland Ice Sheet", *Annals of Glaciology*, **5**, 69-74.

1984 "Synoptic aspects of the 1982-83 ENSO event", *Proc. 8th Annual Climate Diagnostics Workshop* (NOAA, U.S. Dept. Commerce, Washington; NTIS PB84-192418), 136-139.

1984 "Equatorial westerlies during the 1982-83 ENSO event", *Tropical Ocean-Atmosphere Newsletter*, **25** (May, 1984), 10-11.

1983 "Volcanic aerosols and lunar eclipses", *Science*, **222**, 2 December 1983: 1011-1013. [DOI:10.1126/science.222.4627.1011] http://www.sciencemag.org/content/222/4627/1011.abstract
http://www.sciencemag.org/content/222/4627/1011 full.pdf

1983 "Stratospheric aerosol loading estimation from lunar eclipse observations", *Proc. 7th Annual Climate Diagnostics Workshop* (NOAA, U.S. Dept. Commerce, Washington; NTIS PB83-208033), 394-396.

1983 (with G. N. Kiladis) "Reconstruction of Northern Hemisphere long-wave patterns, 1899-1946: Prospects and preliminary results", *Proc. 7th Annual Climate Diagnostics Workshop* (NOAA, U.S. Dept. Commerce, Washington; NTIS PB83-208033), 132-134.

1983 "Tropical cyclone pairs: Their interactions with the equatorial ocean and the Southern Oscillation*", Tropical Ocean-Atmosphere Newsletter*, **15** (January, 1983), 8-10.

1984 "Statistical-dynamical model of accumulation on the Greenland Ice Sheet", *in Climate and Physical Characteristics of the Greenland Ice Sheet*, Pub. 697, CIRES, U. of Colorado, Boulder.

1982 "The Role of Cross-Equatorial Tropical Cyclone Pairs in the Southern Oscillation", *Monthly Weather Review*, **110**, 1405-1416. doi: http://dx.doi.org/10.1175/1520-0493(1982)110<1405:TROCET>2.0.CO;2 http://journals.ametsoc.org/doi/pdf/10.1175/1520-0493(1982)110<1405:TROCET>2.0.CO;2

1981 "Synoptic Processes over the South Pacific Ocean during years of contrasting equatorial circulation and SST anomalies", *Proc. 5th Annual Climate Diagnostics Workshop* (NOAA, U.S. Dept. Commerce, Washington; NTIS PB81-222200), 219-225.

1979 *Temperature and Circulation Anomalies in the Eastern Canadian Arctic, Summer 1946-76*. Ph.D. Thesis, Dept. Geography, U. Colorado, Boulder, 1979, 157pp. Published as **Occasional Paper 34**, Institute of Arctic and Alpine Research (INSTAAR), U. Colorado, Boulder, 1980, 159pp.

1978 "Regional climatic setting", with R. G. Barry, *in Energy Budget Studies in Relation to Fast-Ice Breakup in Davis Strait*, **Occasional Paper 26**, INSTAAR, U. of Colorado, Boulder, 8-67.

1977 "Response of Baffin Bay ice conditions to changes in atmospheric circulation patterns", in *Proc. 4th Intl. Conference on Port and Ocean Engineering under Arctic Conditions*, St. John's, Nfld., Sept. 26-30.

PUBLICATIONS, RICHARD A. KEEN (continued)

BOOKS

2004 Skywatch West: the Complete Weather Guide (revised edition), Fulcrum, Inc., Golden, CO.

1999 Iowa Weather, American Geographic, Helena, MT.

1995 The Audubon Society Pocket Guide to Clouds and Storms (co-author), Knopf, New York, NY.

1993 Michigan Weather, American Geographic, Helena, MT.

1992 Skywatch East: A Weather Guide, Fulcrum, Inc., Golden, CO.

1992 Minnesota Weather, American Geographic, Helena, MT.

1991 The Audubon Society Field Guide to North American Weather (contributor and editor), Knopf, New York, NY.

1987 Skywatch: The Western Weather Guide, Fulcrum, Inc., Golden, CO.

FIELD WORK and OBSERVATIONAL STUDIES

1984-Present: National Weather Service Cooperative Weather Observer, Coal Creek Canyon, CO.

1996-2010: Meteorologist, Juneau Ice Field Research Program, Juneau, AK.

1990-93: Severe storm spotter ("Tornado Chaser"), National Center for Atmospheric Research (NCAR/RAP) Tornado Nowcasting experiment.

1983-87: Severe Storm Verification Group, PROFS (Program for Regional Observing and Forecasting Services), NOAA, Boulder, CO.

1985-87: International Halley (comet) Watch, NASA/JPL, Pasadena, CA.

1982: Joint Airport Weather Study (JAWS)/PROFS Severe Storm Intercept Group, Boulder, CO.

1975: Co-discover of Nova Cygni, the brightest nova in the past 70 years.

1978: Project Stormfury (NOAA/NHC, Miami): flew two hurricane hunter missions as a reporter for The Miami Herald.

1973: Wave Momentum Flux Experiment, NCAR, Boulder, CO.

1969-70: Tropical Testing and Evaluation Activity, U.S. Army Meteorological Team, Panama Canal Zone.

SPEAKING ENGAGEMENTS

In addition to scientific presentations at professional conferences and symposia, I have given numerous weather- and astronomy-related talks to groups such as the National Park Service, Rocky Mountain Nature Assn., National Association of Interpretation Colorado Chapter, Colorado Mountain Club (Boulder, Longmont, and Pike's Peak chapters), Rocky Mountain Philatelic Assn., St. Anthony's Hospital, Denver Astronomical Society, Hawaiian Astronomical Society, American Meteorological Society, Colorado Climate Center, Association of American Weather Observers, KCNC-TV Channel 4 Denver Weather Watchers, National Storm Chaser Convention, Environment of the San Juan Mountains workshop (Fort Lewis College), Centennial Institute (Colorado), Program for Leadership in Earth Systems Education - Earth Systems Education Workshop (UNC), Rocky Mountain Rescue, Snowcraft Industries Winter Weather safety seminars, American Association of Physics Teachers, college classes as a guest lecturer at CU, UNC, and elsewhere, Jefferson County Schools Adult Education, Senior centers and retirement homes, resort hotels, political groups, and K-12 schools in the USA and Egypt. I have also appeared in several documentary films about climate and climate change.

LEO T. KENNY, PHD

[redacted]
[redacted] | https://www.linkedin.com/in/leotkenny | http://www.planetsingular.com

TECHNICAL LEADER

Senior technologist, leader and manager, with broad range of technical experience in the semiconductor industry, focusing on environmental technology development, green chemistry and engineering, Internet of Things, Smart Cities and infrastructure, advanced sensor development and green supply chain. Holistic technology life cycle expertise, from long range strategic planning and goal setting (at a global industry and corporate level) for addressing environmental and sustainability challenges, developing key tools and systems that enabled semiconductor process development to addressing compliance and regulatory requirements for a large scale semiconductor processing factory.

SKILLS & EXPERTISE

Strategic Technical Leadership | Systems Integration | Environmental Technology Development | Sustainability Systems
Interpersonal Skills Teamwork & Collaboration | Customer Engagement | Consulting | Stakeholder Management| Partnering
Wastewater Treatment Systems & Materials Repurposing |Effective Decision Making |Community Engagement| Results Focus
Chemistry (environmental, analytic, Green) |Energy & Water/Aquatic Systems| Semiconductor Processing | Green Supply Chain
Internet of Things (IoT) |Risk & Alternative Assessment Methodologies |Scientific & Regulatory/Public Policy
Smart Cities & Infrastructure | Product/Program/Project Development | Urban Sustainability

- Over 20 years of experience in technology development (operations, environmental process engineering, supply chain).
- Recognized thought leadership in green chemistry, materials risk assessment and green supply chain, environmental technology development and sustainability in the semiconductor and electronics industries and its application to smart cities and infrastructure.
- Technology Roadmapping Leadership (3 years as Chair of the Global Semiconductor ESH Technical Work Group) working with NIST and EPA on global PFC reduction and other key projects, and as Co-Chair of the INEMI (Sustainable Electronics Section) Roadmap, integrating Green Goals and Strategies
- Technical Advisory role to the Semiconductor Research Corporation, Semiconductor Industry Association, American Chemical Council and the NSF SRC Engineering Research Center for Environmentally Benign Semiconductor Manufacturing (ERC), based at the University of Arizona
- Visionary skilled in organizational management, integration solutions development, and changing the culture of an organization towards utilizing a proactive approach to green chemistry and sustainable practices.
- Value-add, results-driven approach to realizing tangible cost savings/avoidance through an innovative and proactive approach to the design and development of environmental systems.
- Ongoing engagement with non profits and associations (American Chemical Society, Green Chemistry Institute, American Physical Society, Silicon Valley Leadership Group, Meeting of Minds, GreenBiz and TSensors Group.

CAREER HISTORY

PLANET SINGULAR (consulting), Pleasanton, CA **August 2015 - Present**
Technologist, Leader for environmental and sustainability

Ongoing engagement with professional associations/consortia, consulting technical role with industry, startups, non profits in the areas of sustainability, IoT, smart cities, environmental, natural resource and infrastructure management and materials design.

- Executive in Residence, at the Silicon Valley Leadership Group, San Jose CA, coordinating senior level technical panel discussions on Circular Economy and Innovative Water Management topics for their Summit on Energy/Sustainability
- ACS Green Chemistry Conference, Symposia introductory keynote (June 2017, Reston VA), '*Green Chemistry, materials design in the semiconductor and electronics industry*'
- APS Invited talk (April 2017) : *'Actualization of IoT: Environmental, Sustainability & Infrastructure'*
- Zero Waste Youth Conference (SF, March 2017), *"Thoughts on a Green Career'*
- INEMI (electronics industry): Sustainable Electronics Roadmap Committee, Co-Chair, from March 2016 - present
- ACS Conference invited talk: *"Opportunities and challenges for green chemistry in semiconductor industry"* June 2016
- MEMS/TSensors talk: on *'Ubiquitous sensing: the initial step in enabling a holistic water management system'* Dec. 2015
- Seminar at Harvard University: *'Green Chemistry in the Electronics & Semiconductor Industries'* Sept. 2015

- Invited Technical Panel Discussion on the 'Future of Transparency in the Electronics Industry Sept. 2015
- Co-Chair of the INEMI sponsored project on Alternative Assessments Method Evaluation, on first phase results presented at the Emerging Green Conference, Sept. 2015, a cross industry collaboration
- Presentation at SEMI Forum on Sustainable Manufacturing at SEMICON West 2015 (July), on '*Sustainability Opportunities and Challenges in the Next Decade',* on behalf of the Director of SRC Engineering Research Center, University of Arizona

INTEL CORPORATION, Santa Clara, CA **October 2008 - July 2015**

Senior Materials Development Technologist

Primary driver for establishing green chemistry as a corporate goal; set the direction, defined and mapped out strategic vision and roadmap for integrating green factors into the supply chain.

- Drove the creation, integration, and adoption of a corporate environmental goal for green chemistry to proactively address environmental, health, safety, and sustainability issues across the domain.
- Developed organizational strategy for the implementation of green chemistry as a companywide commitment. Incorporated corporate social responsibility, EHS corporate policy, and long-range operational environmental objectives into the 2020 corporate environmental goal.
- Maintained a proactive approach to green chemistry with a focus on EHS-related issues for material use that led to changes in organizational structure including the design of collaborative, technical pilots with key suppliers.
- Served as co-chair of the International Electronics Manufacturing Initiative comprised of several industry-wide consortia focused on the development of a comprehensive evaluation reference document of alternative assessment methodologies and tools for the selection of more EHS-friendly materials for use in manufacturing.
- Chaired corporate cross-organizational strategic objective team. Set the foundation for the development of a policy for EHS, governance and social responsibility (ESG) now adopted for all corporate procurement functions.
- Industrial Advisory Board Representative for the Semiconductor Research Council's Engineering Research Center.
- Primary point of contact for assessment of all lithographic materials to ensure compliance with all global regulations to ensure safe use in commerce.
- Former Chair of the Environmental, Safety and Health Work Group (3 years) to develop an International Technology Roadmap for the Semiconductor Industry (ITRS) that paved the way for long range technical planning process and a 15 look-ahead technology assessment to identify technology gaps and provide overall guidance to the industry.

INTEL CORPORATION, Santa Clara, CA **February 2014 – March 2015**

Senior Program/Project Manager: Smart City San Jose

Served as senior program manager and technical content expert for the Smart Cities (San Jose) initiative. Primary driver of the first of a kind IoT project for the company that was selected as part of the White House Smart America Challenge. Managed this 14 month project while maintaining current responsibilities.

- Coordinated the successful rapid installation of the first two air quality sensors and subsequent promotional project filming with the city. Presented on behalf of the company at the Smart America exhibition.
- Drove Smart Cities strategic direction and long-term roadmap and enabled broader integrated solutions by working with working with internal sales, marketing, and development teams to support engagements with other prospective cities and company partners while connecting Intel to a working Global Cities initiative.
- Organized and led 2.5 day joint engagement workshop with senior Intel and San Jose officials. Output included key engagement framework, preliminary project plan, and use cases that led to signed NDA and MOU agreements.
- Presented Smart Cities initiatives managed by Intel Research Labs and the Internet of Things Group to a key Asia Pacific internal sales and marketing regional event.

INTEL CORPORATION, Santa Clara, CA **August 2000 - September 2008**

Environmental TD Process Engineering Manager

Managed the full range of the technology life cycle for the proactive development and implementation of long-term and sustainable technology solutions that directly address EHS and sustainability issues that impact technology transfer timelines, cost targets, site permitting, and material regulations at high-volume manufacturing locations.

- Drove sustaining excellence processes to ensure performance and continuous improvement in environmental level facilities and systems for the technology development (TD) factory.
    - Achieved zero site violations for 8 years with no negative impact to technology development and transfer across eight different technologies with the most stringent permit requirements of any company site.

- Introduced processes and systems for improvement that were adopted across the technology and manufacturing organization including four ground-breaking waste treatment systems that were adopted across the factory network and a volatile organize compound air emission treatment system.
- Developed a proactive system for the monitoring of wastewater metals. Created sampling methodology, instrument calibration, and control procedures for dedicated wastewater analytic testing to ensure proper liquid waste drain connections for new process tools, material incompatibilities, and ensure no environmental violations.
- Managed and oversaw environmental emissions modeling and validation testing for air, wastewater, and solid chemical waste across successive technology process and for transfer to high volume manufacturing sites. Achieved four successful technology transfers with no environmental issues.
- Provided key technical support, that enabled ISO14001 certification for TD factory site and Intel overall. Primary interview contact on environmental management and development systems for ISO renewal.
- Received Corporate Environmental and Technology as well as Manufacturing Group Excellence awards for efforts to drive global warming gas (PFC) and VOCI emissions reductions projects for flash technologies. Efforts enabled corporate external commitment for emission reduction through chemical replacement and reduction projects.
- Oversaw the design and successful implementation of Cu, HF, VOC treatment systems for a technology development semiconductor factory. Received Division Recognition Awards for their successful completion.
- Developed and maintained capital and expense budget planning documents, actively supporting cost reduction activities across multiple fabrication facilities to drive $8M in cost savings and avoidance over a five-year period.
- Instrumental and a key driver of the Intel certification process for achieving green partner status by a major international semiconductor device and consumer product company.

ADDITIONAL EXPERIENCE

SUMCO USA (formerly Mitsubishi Silicon), Salem, OR, **Senior Development Engineer**

- Responsible for customer support for new product development of epitaxial Si products to power discrete and DRAM device manufacturers (8 key customers, 100+ products developed)
- Support of new epi deposition furnaces and metrology equipment development and qualifications
- Direct involvement with factory operations in product manufacturing and process troubleshooting.

Tufts University, Medford, MA Chemistry Department, **Dissertation Research**

- Acquisition of more than $300K of equipment for the design and construction of two working CVD thin film deposition systems, used to successfully grow thin film battery and electro-chromic device counter-electrodes
- Creative problem solving: leveraging outside resources, contacts for analytic chemical support ($10K+)

Tufts University, Medford, MA Chemistry Department **Instrumentation Specialist Assistant**

- Responsible for operation and maintenance of all Department instrumentation (AA, ICP, UV VIS, NMR, GC, LC, MF, GC-MS), with demonstrated applications support for sampling & analytic methodology of novel research materials
- Provided inputs on new instrument acquisitions, equipment facilitization and equipment installation.

Tufts University, Medford, MA Chemistry Department **Teaching Assistant**

- Taught undergraduate lab courses in Physical, Analytic and Freshman Chemistry and graduate Analytic Chemistry, including curriculum planning, direct instruction, and laboratory supervision
- Solid rapport with a diverse undergraduate and graduate student population; with classroom, laboratory and small group, including remedial chemical instruction

Massachusetts Institute of Technology, Cambridge, MA ***Research*** **Associate**

- Member of multi-disciplinary team developing a novel laser-fiber optic treatment for atherosclerotic plaque removal in humans (alternative to balloon angioplasty); in collaboration with two large research hospitals and a leading hospital supply company
- Area of focus in development of spectral diagnostic capability for this medical device; receiving a patent with the development team for catheter device and initial diagnostic capability

Thibeault & Associates, Environmental Engineering Firm, Providence, RI, **Chemical Technician**

- On-site wastewater sampling for industrial (chemical, pharmaceutical, plating), research, field site applications.
- Analytic chemical support of air and wastewater emissions (metal and organic constituents), with data analysis and analysis report preparation

US Department of Agriculture (Agricultural Research Service), Tucson, AZ **Research Associate**

- Field ecological evaluation of rangeland in support of grassland re-vegetation (species evaluation, coverage, alternative grazing strategies & affects, implantation methods, re-seeding), DOE, sampling, assessments
- Chemical analytic support:: micronutrient and herbicide analysis (GC, UV-Vis, AA)

EDUCATION

- Doctorate of Philosophy, Physical Inorganic Chemistry | Tufts University, Medford, MA
- Bachelor of Science, Chemistry | University of Arizona, Tucson, AZ
- Bachelor of Science, Ecology & Evolutionary Biology | University of Arizona, Tucson, AZ

Annie Bernadette Kersting

Director, University Relations & Science Education
Deputy Director for Science and Technology Office, L-019
Lawrence Livermore National Laboratory
L-231, Livermore CA 94550
[redacted]
https://seaborg.llnl.gov/

EDUCATION

Ph.D.	**University of Michigan**, Dept. of Geological Sciences
M.S.	**University of Michigan**, Dept. of Geological Sciences
B.A.	**University of California, Berkeley**, Dept. of Geology and Geophysics

PROFESSIONAL EXPERIENCE

Over 25 years of research experience, building programs and conducting science at the intersection of chemistry, geology, environmental, and nuclear science. Current research focuses on the geochemical mechanisms that control actinide transport in soil and groundwater with applications to nuclear forensics. Over 20 years of supervising staff scientists, postdoctoral fellows and graduate students to carry out cutting-edge research in the field of environmental radiochemistry.

Director, University Relations and Science Education at LLNL. (February, 2016- current) She works with the Laboratory's senior leadership to develop and execute strategies, build strategic partnerships and foster collaborative research and education initiatives to ensure a workforce pipeline of top-tier science and technology talent. She oversees a broad range of educational science and technology programs and initiatives that advance the mission and vision of the Laboratory. She oversees all institutes and centers, the Institutional Postdoc Program, Lawrence Fellow and Livermore Scholar programs and all science education outreach efforts.

Director, Glenn T. Seaborg Institute at LLNL. (2003-2016) *i)* Facilitated collaborative research between LLNL and the national and international academic community in radiochemistry, nuclear forensics and super heavy element discovery. *ii)* Developed the Seaborg Institute as a national center for the education and training of undergraduate and graduate students, postdocs and faculty in nuclear science. Each year approximately 60 visiting scientists collaborate with the Seaborg Institute staff to conduct research using some of LLNL's state of the art facilities (super computers, NanoSIMS, TEM, SEM, radiochemistry facilities). *iii)* Coordinated a summer program in nuclear forensics & nuclear science designed to train the next generation of nuclear scientists and engineers needed to solve critical national security problems. This successful program has created a much needed pipeline of talented young scientists and has become a model for education programs at other national laboratories, with over 17 students becoming postdocs and 15 staff members.

Director of the PLS Postdoc Program, LLNL. (2004-2016) Developed and directed a postdoctoral program to enhance the experience of the postdoctoral fellows. Manage professional development for approximately 120 postdocs, and supervise a staff to help hire, mentor, and evaluate our postdocs. Program goals include helping postdocs achieve their scientific potential, and assess the skills, knowledge, and ability of each postdoc at the end of their fellowship.

Program Manager/Office Science Biological Environmental Reserach SFA, LLNL. (2009-current) Currently leading a research group of 8 staff scientists, postdoctoral fellows, and graduate students to conduct research on the fate and transport of actinides in the environment. Our research group is currently focused on field, laboratory, and modeling efforts to better understand the controlling biological, geological, and chemical processes that enhance or inhibit transport of actinides in the environment.

Principal Investigator Nuclear Energy-53 Used Fuel Disposition Campaign LLNL. (2011-2013) Designed and executed a research program to evaluate the transport of radionuclides under high temperatures and high radioactivity levels expected in nuclear waste repositories.

Program Manager/Principal Investigator Defense Program, Hydrologic Remediation Management Program LLNL. (2000-2005) Managed a field, experimental, and modeling program to better understand radionuclide transport at the Nevada Nuclear Security Site (Nevada Test Site).

Deputy Group Leader in Environmental Radiochemistry CMELS, LLNL. (1995-2002) Wrote performance assessments, helped with ranking, career planning, and mentored younger staff.

Postdoctoral Fellow, Institute Geophysics & Planetary Physics, LLNL. (1992-1995) Conducted independent research to study the geochemical evolution of the Earth with an emphasis on the formation of island arcs and geochemical cycling between the crust and mantle.

Environmental Consultant, Erler & Kalinowski Inc. San Mateo, CA. (1991-1992) Staff scientist. Evaluated fate and distribution of contaminants in groundwater and soil. Designed and implemented clean-up remedies.

Geologist and Field Assistant:

1985: Staff Geologist, Chevron Oil, Concord CA

1985: Field geologist, Union Geothermal, Santa Rosa, CA,

1984: Field Technician, Mexico with Dr. Ian Charmichael, U.C. Berkeley Geology Dept.

1982-3: Lab technician with Dr. George Brimhall, U.C. Berkeley Geology Dept.

LEADERSHIP & SERVICE EXPERIENCE

Over 20 years of successfully enhancing scientific collaborations by organizing international/national conferences, national and international workshops, and promoting research in nuclear and environmental radiochemistry. Served on committees to promote outstanding science by providing objective, science-based advice on critical issues affecting the nation.

Committee Member on Scientific Boards and Review Committees

- LANL Science of Signatures Review Committee (5/2016)
- BES Basic Research Needs workshop for Environmental Management (hosted by BES/BER/OSCR), 7/2015
- Laboratory Directed Research & Development, LLNL Review Committee (2015, 2016, 2017)
- Environmental Protection Agency (EPA), Radiation Advisory Board member (2014-current)
- LANL Seaborg Institute Review Committee (June, 2014)
- Helmholtz-Programme Nuclear Waste Management, Safety and Radiation Research Review, Germany (Jan. 2014)
- National Academy Sciences, National Research Council, Nuclear and Radiation Studies Board. Board member (2010-2015)

- Laboratory Directed Research & Development, CMELS Directorate review committee (2007-2008)
- National Academy Sciences, National Research Council, Committee member (2005-2007) *Plans and Practices for Groundwater Protection at the Los Alamos National Laboratory: Final Report* (2007)
- LANL Postdoctoral Program Review Committee, August 2006
- Environmental Management Science Program Review Panel, Office of Science, DOE August, 2006
- BES Review Panel, Heavy Element Sciences, Argonne National Laboratory, 2004
- Scientific advisor on the Actinide Migration Committee for Rocky Flats, 2000-2003
- Omsbudman representative, Chemistry & Materials Science Directorate, LLNL 1999-2002

Awards

- 2016 Secretary of Energy's Achievement Award, Department of Energy, for contribution to the Department and the Nation, WIPP Technical Assessment Team and Accident Investigation Board.
- Excellence in Science and Leadership, 2016 PLS, LLNL
- 2016 American Chemical Society Garvan-Olin national award for excellence in chemistry, leadership and service. March, San Diego, CA.
- Excellence in Publication 2000, LLNL.

Editorial Boards

Geochimica et. Cosmochimica Acta. Associate Editor, 2013-present

Steering Committee Member for Conferences and Workshops

- Pu Futures Conference, 2002, 2006, 2008, 2010, 2014
- Methods and Applications of Radioanalytical Chemistry Conference, 2012, 2015
- Glenn T. Seaborg Symposium, 100 year celebration, UC Berkeley April 21, 2012.
- Asian-Pacific Symposium on Radiochemistry, 2011
- Plutonium Processing Workshop, Los Alamos, NM 2011
- Chemistry and Migration Behaviour of Actinides and Fission Products in the Geosphere, 1999, 2015

Scientific Sessions Organized at Conferences and Workshops (Selected)

- Methods and Applications of Radioanalytical Chemistry Conference, Session: Environmental Radiochemistry, Kona Hawaii, 2015, 2017
- Pu Futures Conference, Session: Environmental Radiochemistry, Las Vegas, NV, 2014
- Goldschmidt: Biological and Geochemical Processes Controlling Subsurface Radionuclide Mobility, Sacramento, CA, 2014
- Methods and Applications of Radioanalytical Chemistry Conference, Session: Advances in Nuclear Forensics, Kona Hawaii, 2012
- Pu Futures Conference, Session: Radionuclides in the Environment, Pacific Grove, CA, 2006
- American Chemical Society, Session: Transport Behavior of Actinides and Fission Products in the Subsurface. 2005, San Diego, CA
- American Chemical Society, Session: Colloid-Facilitated Transport of Contaminants in the Subsurface: The Life and Death of a Colloid. 2004, Anaheim, CA

EDUCATIONAL OUTREACH EXPERIENCE

Over 25 years of involvement in educational programs and workshops to help train the next generation in STEM, with a special emphasis on women and minorities.

- 2002-present: Developed and currently direct a Nuclear Forensics Undergraduate & Graduate Summer Internship Program within the Seaborg Institute to train the next generation of nuclear scientists and engineers needed to solve critical national security problems. This successful program has created a needed pipeline of talented young scientists and has become a model for education programs at other national laboratories. These accomplishments have been recognized in the National Academy of Science's report, "Assuring a Future U.S. –Based Nuclear and Radiochemistry Expertise" (NRC, 2012).
- *Expanding your Horizons*, middle school girls in science program, Livermore, CA 2014, 2015
- *Dinner with a Scientist* for minority students and girls in Oakland CA, 2012, 2013
- Career day for Oakland Middle School students, 2011, 2012
- Department of Homeland Security Nuclear Forensics Graduate Fellow Program Selection Committee, 2010, 2011, 2013 and point of contact for LLNL.
- Director of the Undergraduate Summer Program at LLNL, 2003-2007, Thirty undergraduate students/year were hired to conduct hands-on research in the Physical & Life Sciences. Special effort was made to recruit at Historically Black Colleges.
- Lawrence Fellow Postdoctoral Selection Committee, LLNL, 2004-2006
- Lawrence Scholar Graduate Selection Committee, LLNL, 2003-2005
- Women in Science, panel discussion, LLNL, 2006, 2007, 2008
- University of Michigan, high school girls in science workshop, 1989, 1990

Mentored Postdoctoral Fellows and Graduate Students

Mentored (or currently mentoring) 11 postdoctoral fellows in environmental radiochemistry. 100% of the postdoctoral fellows have gone on to successful careers in science and engineering. Mentored 10 graduate students whose research at LLNL comprised part of their Ph.D. thesis.

Postdocs:
Enrica Balboni 2016-present [Co-mentor with Mavrik Zavarin]
Keith Morrison Dec. 2015-present [will Co-mentor with Yongqin Jiao & Mavrik Zavarin]
Tashi Parsons-Moss 2014-present [Co-mentored with Mike Kristo]
Claudia Joseph 2013-present [Co-mentored with Mavrik Zavarin], staff scientist KIT, Germany
Mark Boggs 2012-2015 [Co-mentored with Mavrik Zavarin] staff scientist LLNL
James Begg 2010-2013 [Co-mentored with Mavrik Zavarin] staff scientist LLNL
Ruth Kips 2009-2011 [Co-mentored with Ian Hutcheon] staff at IAEA, Vienna, staff scientist LLNL
Ruth Tinnacher 2008-2011 [Co-mentored with Mavrik Zavarin], staff scientist LBNL, faculty CSEB
Brian Powell 2006-2008 [Co-mentored with Mavrik Zavarin] Associate Professor, Clemson U.
Axel Brachmann 2002-2005 Germany, Private sector
Nadia Hakem 2000-2003 Staff Engineer at Qualcomm, CA

Graduate Students:
Katie Hoffman (U. Cincinnati, 2107)
Daisy Ray (U. Manchester, 2015)
Jennifer Wong (Clemson University, 2011-2015)
Chad Durant (U. Penn. 2013-present). Nuc For Grad. Fellow, Livermore Scholar (2015-2017)
Jennifer Shusterman (UC Berkeley, 2013-2015)
Ana Benedicto Cordoba, (CIEMAT, Spain 2012)

Sandra Fernando (University of Michigan, 2011) , now postdoc at Argonne
Mathew Snow (Washington State University, 2010, 2011), now postdoc at INL
Kathryn Flynn (UC Davis, 2008)
Lindsay Shuller (U. Michigan, 2006), now faculty Clemson University
Justin Walensky (The New college of Florida, 2004-2005) now faculty U. Missouri

PUBLICATIONS AND PRESENTATIONS

Publications (peer reviewed)

Durrant, C. B., Begg, J. D., Zavarin, M., Ünlü, K., **Kersting, A. B.** Cesium sorption reversibility and kinetics on illite, montmorillonite, and kaolinite, *submitted to Sci. Total Environ.* 2017.

Huang, P., Lo, C., Zavarin, M., **Kersting, A.B.**, Tetravalent actinide hydration from first principles simulations: Characterization of the monomeric hydrolysis products of thorium(IV), *in press to Chem. Phys. Lett.*

Boggs, M.A., Jiao,Y., Dai, Z., Zavarin, M., and **Kersting, A.B.** (2016). Plutonium reaction with Pseudomonas sp. and its extracellular polymeric substances. *Applied and Environmental Microbiology*, 82: 7093-7101.

Begg, J., Zavarin, M., and **Kersting, A.B.** (2017). Desorption of plutonium from montmorillonite: An experimental and modeling study. *Geochim. Cosmochim. Acta*, 197: 278-293.

Conroy, N.A., Zavarin, M., **Kersting, A.B.**, and Powell, B.A. (2017). The effect of natural organic matter on plutonium sorption to goethite. *Environ. Sci. Technol.*, 51: 699-708.

Joseph, C., Mibus, J., Trepte, P., Müller, C., Brendler, V., Park, D.M., Jiao, Y., **Kersting, A.B.**, Zavarin, M. (2017). Long-term diffusion of U(VI) in bentonite: Dependence on density. *Science Total Environment*, 575: 207-218.

Romanchuk, A. Y., Kalmykov, S. N., Kersting, A. B., Zavarin, M. (2016). Behavior of plutonium in the environment. *Russian. Chem. Rev.*, 85: 995-1010. DOI: 10.1070/RCR4602.

Zhao, P., Begg, J.D., Zavarin, M., Tumey, S.J., Williams, R., Dai, Z.R., Kips, R., and **Kersting, A.B.** (2016). Plutonium(IV) and (V) sorption to goethite at sub-femtomolar to micromolar concentrations: Redox transformations and surface precipitation. *Environ. Sci. Technol.*, 50: 6948-6956. DOI: 10.1021/acs.est.6b00605.

Mason, H.E., Begg, J.D, Maxwell, R.S., **Kersting, A.B.**, Zavarin, M. (2016). A novel NMR method for the investigation of trivalent lanthanide sorption on amorphous silica at low surface loadings. *Envir. Sci. Process. Impact*, 18: 802-809.

Huang, P., Lo, C., Zavarin, M., **Kersting, A.B.**, Hydration of tetravalent actinides from first principles simulations: Structure and energetics of monomeric Th(OH)4(aq), *in prep. to J. Phys. Chem. B*.

Boggs, M.A., Jiao,Y., Dai, Z., Zavarin, M., and **Kersting, A.B.** (2016) Plutonium Reaction with *Pseudomonas* sp. and its Extracellular Polymeric Substances. *In press to Applied and Environmental Microbiology.*

Begg, J., Zavarin, M., and **Kersting, A.B.** Desorption of plutonium from montmorillonite: An experimental and modeling study. *(In press) Geochim. Cosmochim. Acta.*

Conroy, N.A., Zavarin, M., **Kersting, A.B.**, and Powell, B.A. The Effect of Natural Organic Matter on Plutonium Sorption to Goethite. *(2016) in press. Environmental Science & Technol.*

Joseph, C., Mibus, J., Trepte, P., Müller, C., Brendler, V., Park, D.M., Jiao, Y., **Kersting, A.B.**, Zavarin, M. (2016) Long-term diffusion of U(VI) in bentonite: Dependence on density. *(2016) Science Total Environment.* 575:207-218.

Romanchuk, A Yu, Kalmykov, S N, Kersting, A B, Zavarin, M. (2016) Behavior of plutonium in the environment. *(2016) Russian Chem. Rev.*, **85**(9): 995-1010 DOI: 10.1070/RCR4602

Zhao, P*. Begg, J.D*., Zavarin, M., Tumey, S.J., Williams, R., Dai, Z.R., Kips, R., and **Kersting, A.B.** (2016) Plutonium(IV) and (V) Sorption to Goethite at Sub-Femtomolar to Micromolar Concentrations: Redox Transformations and Surface Precipitation. *(2016) Environ. Sci. Technol.* 50(13):6948-56. DOI: 10.1021/acs.est.6b00605.

Mason, H.E., Begg, J.D, Maxwell, R.S., **Kersting, A.B.**, and Zavarin, M., A novel NMR method for the investigation of trivalent lanthanide sorption on amorphous silica at low surface loadings, *(2016) Envir. Sci. Process. Impact.* 18:802-809 DOI: 10.1039/C6EM00082G

Shusterman, J.A., Mason, H.E., Bowers, J., Bruchet, A., Uribe, E.C., **Kersting, A.B.** and Nitsche, H. (2015) Development and Testing of Diglycolamide Functionalized Mesoporous Silica for Sorption of Trivalent Actinides and Lanthanides. *Applied Materials & Interfaces 7* (37), 20591-20599. DOI:10.1021/acsami.5b04481

Wong, J., Zavarin, M., Begg, J.D., **Kersting, A.B.,** and Powell, B.A. (2015) Effect of Equilibration Time on Pu Desorption from Goethite, *Radiochim. Acta*. DOI:10.1515/ract-2015-2404

Tinnacher, R.M., Begg, J.D., Mason, H., Ranville, J., Powell, B.A., Wong, J.C., **Kersting, A.B.**, and Zavarin, M. (2015) Effect of Fulvic acid Surface Coatings on Plutonium Sorption and Desorption Kinetics on Goethite, *Environ. Sci. Technol*., 49(5):2776-2785, *doi: 10.1021/es505120s.*

Begg, J.D., Zavarin, M., Tumey, S.J., and **Kersting, A.B.** (2015) Plutonium Sorption and Desorption Behavior on Bentonite. *J. Environ. Radioact.*, 141:106-114. doi: 10.1016/j.jenvrad.2014.12.002

Boggs, M.A., Dai, Z., Zavarin, M., and **Kersting, A.B.** (2015) Plutonium(IV) Sorption to Montmorillonite in the Presence of Organic Matter. *J. Environ. Radioact.*, 141:90-96. doi: 10.1016/j.jenvrad.2014.12.005

Begg, J.D., Zavarin, M., and **Kersting, A.B.** (2014) Plutonium Desorption From Mineral Surfaces at Environmental Concentrations of Hydrogen Peroxide. *Environ. Sci. Technol*., 48:6201–6210. doi:10.1021/es500984w

Zhao, P., Tinnacher, R. M., Zavarin, M., and **Kersting, A. B.** (2014). Analysis of Trace Neptunium in the Vicinity of Underground Nuclear Tests at the Nevada National Security Site. *J. Environ. Radioact.*, 137:163-172. doi: 10.1016/j.jenvrad.2014.07.011

Benedicto, A., Begg, J.D., Zhao, P., **Kersting, A.B.**, Missana, T., and Zavarin, M. (2014) Effect of Major Cation Water Composition on the Ion Exchange of Np(V) on Montmorillonite: NpO^{2+}-Na^{+}-K^{+}-Ca^{2+}-Mg^{2+} Selectivity Coefficients. *Appl. Geochem.*, 47:177-185. doi: 10.1016/j.apgeochem.2014.06.003

Zavarin, M., Zhao, P., Dai, Z.R., and **Kersting, A.B.** (2014) Plutonium Sorption and Precipitation in the Presence of Goethite at 25 and 80°C. *Radiochim. Acta*, 102:983-997.

Parsons-Moss, T., Wang, J., Jones, S., May, E. Olive, D., Dai, Z., Zavarin, M., **Kersting, A.B.,** Zhao, D., and Nitsche, H. (2014) Sorption Interactions of Plutonium and Europium with Ordered Mesoporous Carbon. *J. Mater. Chem. A*, 2:11209-11221. doi: 10.1039/C4TA01740D

Boggs, M.A., Mason, H.E., Arai, Y., Powell, A., **Kersting, A.B.,** and Zavarin, M. (2014) Nuclear Magnetic Resonance Spectroscopy of Aqueous Plutonium (IV) Desferrioxamine B Complexes. *Eur. J. Inorg. Chem.*, 21:3312-3321. doi: 10.1002/ejic.201402105

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Snow, M.S., Zhao, P., Dai, Z., **Kersting, A.B.,** and Zavarin, M. (2013) Neptunium(V) Sorption to Goethite at Attomolar to Micromolar Concentrations. *J. Colloid Interface Sci.*, **390**:176-182. doi:10.1016/j.jcis.2012.08.058

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Zhao P., Zavarin M., Leif R., Powell B., Singleton M., Lindvall R., and **Kersting, AB.** (2011). Mobilization of Actinides by Dissolved Organic Compounds at the Nevada Test Site. *Applied Geochemistry*. 26(3):308-318.

Tinnacher, R. M.; Zavarin, M.; Powell, B. A.; **Kersting, A. B.** (2011). Kinetics of Neptunium(V) Sorption and Desorption on Goethite: An Experimental and Modeling Study. *Geochimica et Cosmochimica Acta*, 75:6584–6599.

Kersting, A.B. and Zavarin, M. (2011). Colloid Facilitated Transport of Plutonium at the Nevada Test Site, NV, USA. In: Actinide Nanoparticles Research. Ed. Kalmykov, S. and Denecke, M. *Springer*. ISBN 978-3-642-11431-1. 399-412p.

Utsunomiya, S., **Kersting, A.B.,** Ewing, R.C. (2009). Groundwater Colloids: Characterization of Radionuclides in the Far Field at the Nevada Test Site. *Environ. Sci. Technol,* 43(5):1293-1298.

Kersting A.B. (2006). Colloids and Radionuclide Transport. In: Uncertainty Underground: Yucca Mountain and the Nation's High Level Nuclear Waste. Eds: MacFarlane A. and Ewing, R. M.I.T. Press. 335-364p.

Zavarin, M., Roberts, S. K., Hakem, N., Sawvel, A. and **Kersting, A.B.** (2005). Eu(III), Sm(III), Np(V), Pu(V) and Pu(IV) Sorption to Calcite. *Radiochim. Acta* 93:93-102.

Traexler, K.A., Utsunomiya, S., **Kersting, A.B.,** and Ewing, R. C. (2004). Colloid Transport of Radionuclides: Yucca Mountain Performance Assessment. *Proceedings of the Material Research Society Symposium*, 807: 653-658. (Refereed article).

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Smith, D. K., **A.B. Kersting**, J. L. Thompson, and D. L. Finnegan, (2001). Insights to Repository Performance Through Study of a Nuclear Test Site, Lawrence Livermore National Laboratory, *MRS* 663:1023-1032.

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Gust D.A., Arculus R.J., and **Kersting A.B.** (1997) Aspects of Magma Sources and Processes in the Honshu arc. *Can. Min.* No 2, 35:347-365.

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Kersting A.B. and Arculus, R. J. (1995). Pb Systematics of Klyuchevskoy Volcano, Kamchatka, and North Pacific Sediments: Implications for Magma Genesis and Sediment Recycling in the Kamchatkan Arc. *Earth Planet. Sci. Lett*. 136:133-148

Kersting A.B. (1995). Pb Isotope Ratios of North Pacific Sediments, Sites 881,883 and 884: Implications for Sediment Recycling in the Kamchatkan Arc. *Ocean Drilling Program*, Leg 145: 383-388.

Kersting A.B. and Arculus, R.J. (1994). Klyuchevskoy Volcano, Kamchatka, Russia: The Role of High-Fluxed, Recharged, Tapped and Fractionated Magma Chamber(s) in the Genesis of High-Al_2O_3 Basalt from High-MgO Basalt. *J. Petrology* 35, 1-42.

Holmes R.D., **Kersting A.B.,** and Arculus R.J. (1990). Standard Gibbs Free Energy of Formation for Cu_2O: High Resolution Electrochemical Measurements from 900-1300 K. *J. Chem. Thermo*. 21, 351-361.

Kersting A.B., Arculus R.J., Delano J.W., and Loureiro D. (1989). Electrochemical Measurements Bearing on the Oxidation State of the Skaergaard Layered Intrusion. *Contrib. Mineral. Petrol*. 102, 376-388.

Selected Proceedings and Reports

Clark, D.L. and **Kersting, A.B.** (2011). Plutonium Processing Workshop Report. Los Alamos National Laboratory. LA-UR-11-06190. 12 p.

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Zavarin, M. Johnson, M. R., Roberts, S. K. Pletcher, R., **Kersting, AB.**, T. P. Rose, Q. Qinhong Hu, E. Ramon, J. Walensky, P. Zhao, and G. A. Eaton (2005). Radionuclide transport in tuff and carbonate fractures from Yucca Flat, Nevada Test Site. Lawrence Livermore National Laboratory, UCRL-ID, 65 p.

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Zavarin, M., Maxwell, R.M., **Kersting, A.B.,** Zhao, P., Sylvester, E.R., Allen, P.G., Williams, R.W., "Plutonium Colloid-Facilitated Transport in the Environment-Experimental and Transport Modeling Evidence for Plutonium Migration Mechanism, Pu Futures 2003," *American Institute of Physics* (2003).

Kersting AB. and P. W. Reimus, (2003). Eds: Colloid-facilitated transport of low-solubility radionuclides: A field, experimental, and modeling investigation. Lawrence Livermore National Laboratory, UCRL-ID-149688, 269 p.

Rocky Flats Environmental Technology Site: Actinide Migration Evaluation Pathway Analysis Summary Report. Kaiser Hill Co. 2002. 30p. Contributing Author

Talks (invited only)

American Chemical Society, *Invited*. Stability and persistence of plutonium colloids in nature. D.C. August, 2017

Penn State, *Invited* Actinide behavior in the environment. Chemistry Dept. February, 2017

Pu Futures, *Invited* Identification of processes controlling plutonium transport. Baden-Baden, Germany, September, 2016

Lawrence Berkeley National Laboratory, Seaborg Institute. *Invited*. Twenty years of insight into the behavior of plutonium in the environment: What we have learned. April, 2016.

American Chemical Society, *Session Keynote*. Role of organic matter and microbes in plutonium redox transformations and sorption reactions, San Diego, CA. March, 2016

Frontiers in Environmental Radiochemistry, Royal Society of Chemistry & UK Science and Technology Facilities Council, *Keynote*. London, England, January, 2016.

Pacific Northwest National Laboratory. *Invited* December, 2015.

Washington State University, *Invited*. Biogeochemistry of Plutonium in the Environment. November, 2015.

American Chemical Society, *Session Keynote*. Transformation & Transport of Radionuclides in the Environment, Boston MA, August, 2015

American Chemical Society. *Invited*.Training the next generation of radiochemists: Education efforts at Lawrence Livermore National Laboratory. Denver, CO, April 2015

German Physical Society, Heidelberg, Germany. *Plenary speaker*. Plutonium in the environment: Can we predict it behavior?. April, 2015.

University of Notre Dame, Dept. of Civil and Environmental Engineering and Earth Sciences. Actinide behavior in the environment. *Invited*. October, 2014.

International Conference on Isotopes and Expo, *Plenary Speaker*. Radionuclide transport in the environment Chicago, IL, August, 2014.

TALISMAN graduate summer school. *Plenary Speaker*. Lectures on the environmental impact of the nuclear fuel cycle, Avignon, France, June 2014.

National Academies Science Keck Futures Initiative (NAKFI) *Invited*. Conference on Advanced Nuclear Technologies. Irvine CA. Nov. 2013.

Radiobioassay and Radiochemical Measurements, *Keynote Speaker*. Environmental radiochemistry and nuclear forensics research and education programs within the Seaborg Institute at LLNL. Rohnert Park, CA. Oct. 2013

Geological Society America, *Keynote Session Speaker*. Understanding geochemical processes controlling colloid-facilitated transport of Pu: from 10 in. core experiments to kilometer scale field observations. Denver, CO., Oct. 2013

ACS, *Invited*. Special session in honor of Darleane Hoffman. Seaborg Institute research highlights in actinide chemistry Oct. 2013

ACTINIDES, *Invited*. Determining the biogeochemical mechanisms that control plutonium transport. Karlsruhe, Germany, July, 2013

U. Missouri, Chemistry Dept., *Invited*. Actinides in the environment: Pu transport. Nov. 2012

U. C. Davis, Chemistry Dept. *Invited* Actinides in the environment Oct. 2012

Glenn T. Seaborg Symposium, Celebrating the 100th anniversary of Dr. Seaborg's life and legacy. *Invited* U.C. Berkeley April 21, 2012.

Goldschmidt, *Keynote Session speaker*, Pu transport: Identifying the biogeochemical mechanisms controlling its behavior. Prague, Czech, Aug. 2011

National Research Council. *Invited.* Educating the next generation of nuclear scientists at LLNL, D.C. May, 2011

ACS Fall 2011, *Invited*, Special session honoring 100th anniversary of Marie Curie's contribution to science.

International conference on radionuclides in the environment, *Invited*. Beijing, China, 2009

Methods & Applications Radioanalytical Chemistry Conference, *Invited*, Seaborg Institute education program, Hawaii, 2009

New College, Florida, Plutonium transport in the environment. Tampa FL June, 2006

Pu Futures Conference, *Invited*. Workshop: Tutorial on colloidal transport of actinides, Santa Fe, NM, 2006

UC Santa Cruz, Geology Department. Evolution of island arcs, 1995

UCLA, Geology Dept., Petrogenesis of Klyuchevskoy Volcano, 1995

Stanford University, Geology Dept. 1994, Women in science panel discussion, 1994

Jagdish Khubchandani, MBBS, PhD, MPH

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1. EDUCATION

2010	Ph.D.	Health Education/Epidemiology University of Toledo
2007	M.P.H	Public Health/ Health Education Western Kentucky University
2003	M.B.B.S.	Doctor of Medicine and Surgery DAVV University, (M.P), India

2. PROFESSIONAL EXPERIENCE

2014- Present	Associate Professor of Community Health Education (tenured) Department of Nutrition & Health Science, Ball State University, Muncie, IN
2011- 2013	Faculty Fellow- Global Health Institute Ball State University, Muncie, IN
2010- 2014	Assistant Professor of Community Health Education Department of Physiology & Health Science Ball State University, Muncie, IN
2009- 2010	Research Associate, Department of Neurology, College of Medicine, University of Toledo Medical Center, Toledo, OH
2007- 2009	Doctoral Research Assistant Dept. of Health & Rehab. Services, University of Toledo, Toledo, OH
2005-2007	Teaching & Research Graduate Assistant, Department of Public Health, Western Kentucky University, Bowling Green, KY
2004- 2005	Junior Resident Physician, Department of Psychiatry St. Lady Harding Medical College (Govt. of India), New Delhi, India.
2004-2004	Junior Resident Physician, Department of Medicine, Hindu Rao Hospital, (Govt. of Delhi), New Delhi, India.
2002- 2003	Physician Intern-MGM Medical College, Indore (MP), India

3. TEACHING EXPERIENCE

Courses Taught: The list does not include summer online courses taught every year.

Year/ Semester/ Cr Hours	Course/ Institution	Students (n)
	Ball State University	
2017/ Spr/ 3 Cr	HSC 180- *Principles of Community Health*	31
2017/ Spring/ 3 Cr	HSC 482/582- *Environmental Health*	18
2016/ Fall/ 3 Cr	HSC 464/564- *Hlth Ed. in the Clinical Settings*	19
2016/ Fall/ 3 Cr	HSC 482/582- *Environmental Health*	32
2016/ Fall/ 3 Cr	HONR 298- *Global Health*	25
2016/ Spring/ 3 Cr	HSC 180- *Principles of Community Health*	81
2016/ Spring/ 3 Cr	HSC 482/582- *Environmental Health*	31
2015/ Spring/ 3 Cr	HSC 180- *Principles of Community Health*	90
2014/ Fall/ 3 Cr	HSC 482/582- *Environmental Health*	21
2014/ Fall/ 3 Cr	HSC 180- *Principles of Community Health*	30
2014/ Fall/ 3 Cr	HSC 464/564- *Hlth Ed. in the Clinical Settings*	24
2014/ Spring/ 3 Cr	HSC 482- *Environmental Health*	24
2014/ Spring/ 6 Cr	HSC 180- *Principles of Community Health*	108
2013/ Fall/ 6 Cr	HSC 180- *Principles of Community Health*	102
2013/ Fall/ 3 Cr	HSC 464/564- *Hlth Ed. in the Clinical Settings*	21
2013/ Spring/ 12 Cr	HSC 180- *Principles of Community Health*	180
2012/ Fall/ 6 Cr	HSC 180- *Principles of Community Health*	93
2012/ Fall/ 3 Cr	HSC 464/564- *Hlth Ed. in the Clinical Settings*	18
2012/ Spring/ 6 Cr	HSC 180- *Principles of Community Health*	98
2012/ Spring/ 3 Cr	HSC 464/564- *Hlth Ed. in the Clinical Settings*	21
2011/ Fall/ 3 Cr	HSC 444- *Disease Management*	36
2011/ Fall/ 6 Cr	HSC 180- *Principles of Community Health*	108
2011/ Spring/ 3 Cr	HSC 464/564- *Hlth Ed. in the Clinical Settings*	22
2011/ Spring/ 6 Cr	HSC 180- *Principles of Community Health*	69
2010/ Fall/ 6 Cr	HSC 180- *Principles of Community Health*	105
	University of Toledo	
2009/ Fall & Spring/ 3 Cr	HEAL 2600- *Mental Health*	72
2009/ Spring/ 3 Cr-2 Secs.	HEAL 1800- *Medical Terminology*	81
2008/ Fall/ 3 Cr- 2 Sections	HEAL 1800- *Medical Terminology*	60
2008/ Spring/ 3 Cr- 2 Secs.	HEAL 1800- *Medical Terminology*	75
2008/ Summer/ 3 Cr	HEAL 3600- *Prevention & Control of Disease*	36
2007/ Fall/ 3 Cr	HEAL 1800- *Medical Terminology*	27
Courses Assisted: Western Kentucky University and University of Toledo		
2009/ Summer/ 3 Cr	HEAL 2600- *Mental Health*	21
2007/ Fall/ 3 Cr	PH 585- *International Health*	18
2006/ Spring/ 3 Cr	PH 548- *Community Health Organization*	24
2006/ Fall/ 3 Cr	PH 580- *History & Philosophy of Pub. Hlth*	30

Thesis and Dissertation Committees

Chair (Undergraduate Honors Thesis)

1. *Dayna Arnett* (Honors Student). Maternal Mortality in African-American Women: A Systematic Investigation. May 2017
2. *Emily Miller* (Health Science Major). Knowledge and perceptions of reproductive health and family planning among women in Tena, Ecuador. May 2013.
3. *Bailey Ditmer* (Honors Student). Free clinics in the United States: An exploratory review. December 2012.
4. *Nathan Roach* (Honors Student). Association of tobacco use with selected risk factors in the youth of Quito (Ecuador): Results from the Global School-Based Student Health Survey. May 2011. *Presented at American School Health Association Annual Conference in 2011*.

Committee Member

1. *Kiya Dues* (Nutrition & Dietetics Graduate Student). Weight perception & health behaviors in American adolescent females. May 2017
2. *Michael Dugan* (Physiology Graduate Student). *VAMP-3* presence in rabbit B-lymphocyte hybridomas. June 2014.
3. *Mariam Jeddah* (Physiology Graduate Student). Porosome presence in rabbit B-lymphocyte hybridomas. May 2014.
4. *Musaad Alsahly* (Physiology Graduate Student). Colonic morphological changes in rat model of TNBS-induced colitis after oral feeding of Bifidobacterium Infantis (BI). November 2013. *Research published in a peer reviewed journal.*
5. *Alaa Eisa Abdulaziz* (Physiology Graduate Student). Comparison between the binding site of streptococcal monoclonal antibody 10F5 and IgG2 subtype controls in the heart of the Lewis rat. May 2013.
6. *Mohammed Alassiri* (Physiology Graduate Student). Study of iron overload on the immune system of mice: Evidence of autoreactive immune cells. July 2011.
7. *David Furman (*Physiology Graduate Student). The regulatory effects of Bifidobacterium infantis on the secretomotor activity of the enteric nervous system after oral feeding in animal model of TNBS colitis. July 2011. *Research published in a peer reviewed journal.*

Research Paper/ Creative Project Adviser

(* indicates funding received for projects, details given in student grants section)
(**¥** indicates award won by the student at state level conference presentation/ conference presentation for the project)

1. *Adam Null & Tanner Barton****** (Health Science Major, 2017). Title: Depression and diabetes in the United States: A national assessment. **¥**
2. *Sabrina Mangapora* (Health Science Major, 2017). Title: Forced sexual victimization in adolescent females: Prevalence and predictors.
3. *Jelena Petricevic* (Biology Major, 2016). Title: Work-Family conflict in women in US. **¥**
4. *Alyssa Ham* (Health Science Major, 2015). Title: College students' perceptions and practices on e-cigarette use. **¥**
5. *Chelsea Smith** (Honors College Student, 2014). Title: Understanding the prevalence& predictors of mental health issues: Exploration of understudied local and global populations. (presented at a national conference in Spring 2015).
6. *Andrew Deathe* (Health Science Major, 2014). Title: Diet counseling for adults in the United States: Trends and determinants from the 2011-2013 National Health Interview Survey. (presented at a national conference in Spring 2015).
7. *Olivia Cosgray* (Health Science Major, 2014). Title: Indian adolescents' sources of information on menstruation (presented at BSU symposium Spring 2014).
8. *Jason Anderson* (Physiology Graduate, 2013). Title: Reliability and validity of a four item depression and anxiety diagnosis scale in college students. (one poster presented at a national conference in Spring 2014).
9. *Nicole Szoko****** (Honors College Student, 2013). Title: Technology and media use behavior: Association with health behaviors in college students.
10. *Emily Sullivan****** (Health Science Major, 2012). Title: Adolescent dating violence prevention: High school principals' practices.
11. *Jillian Hicks****** (Health Science Major, 2012). Title: Racial and ethnic disparities in mental health of youth.
12. *Emily Sullivan****** (Health Science Major, 2012). Title: Psychosocial correlates and disparities in prevalence of diabetes: Results from NHIS 2011.
13. *Eryn Pulliam Cannon****** (Health Science Major, 2012). Title: Racial and ethnic disparities in mental health of youth. **¥**
14. *Alicia McClendon****** (Chemistry Major, 2012). Title: Racial and ethnic disparities in mental health of youth.
15. Chaztan Moore***** (Health Science Major, 2012). Title: Racial and ethnic disparities in mental health of youth.
16. *Erica Bailey* (Community Health Graduate Student, 2012). The efficacy of educational interventions for self-management of asthma in children.
17. *Devon Rayasa* (Physiology Graduate Student, 2011). Title: Tobacco use prevention education of healthcare professionals in the United States: A systemic review. Presented at BSU student research symposium 2011.
18. *Emily Sullivan****** (Health Science Major, 2011). Title: Psychosocial predictors for alcohol use in youth of Quito (Ecuador): Results from the Global School-Based Student Health Survey. Presented at the Society for Public Health Education national conference 2012.
19. *Crystal Long****** (Health Science Major, 2011). Title: Correlates of youth bullying in Argentina: Results from the global school-based student health survey. **¥**

Advanced Studies and Professional Improvement

Advanced Study and Certifications

2015 *Mental Health: A Global Priority*
Online Certificate by The University of Edinburgh, UK.

2015 *The Challenges of Global Health*
Online Certificate by Duke University, NC

2015 *Global Adolescent Health*
Online Certificate by The University of Melbourne, AU

2014 *Applying the QM Rubric:* Training to Teach Online Courses
Quality Matters, Annapolis, MD.

2014 *Improving Global Health: Focusing on Quality and Safety*
Online Certificate by Harvard University, Boston, MA

2014 *Theory and Practice of Occupational Health and Safety*
Online Certificate by School of Public Health, University of Minnesota, MN

2014 *Environmental Health Online: Water Supply and Waste Water*
Online Certificate by School of Public Health, University of Minnesota, MN

2014 *REAL Certificate:* Collecting and Using Information to Promote Health Care Equity.
Sponsored by the Indiana Public Health Training Center, Indianapolis, IN

2014 *Behavioral Medicine: A Key to Better Health* (5 Week Course)
EdX Online Certificate by Karolinska Institutet, Stockholm

2014 *Health Literacy for Public Health Professionals*
Online Certificate Sponsored by the Centers for Disease Control and Prevention, GA

2012 *Community Health Leader: Office of Women's Health* (US Department of Health and Human Services). Selected from a national pool of applications to attend a Leadership Institute on Women's Health in Chicago, IL.

2009- Certified Health Education Specialist (#16073)
National Commission for Health Education Credentialing.

2008 Certified for epidemiologic case study: 'Food borne disease outbreak investigation'.
Sponsored by US Centers of Disease Control and Prevention.

2006 Certified HIV Educator.
American Red Cross Society, South Central Kentucky Chapter, KY.

2005 Licensed to practice and teach clinical medicine.
Rajasthan State Medical Council, India.

2004 Licensed to practice and teach clinical medicine.
New Delhi State Medical Council, India.

2004 Licensed to practice and teach clinical medicine.
Madhya Pradesh State Medical Council, India.

2003 Certified for monitoring National Polio Eradication Program
World Health Organization (Govt. of India and WHO collaboration).

2000 Certified for completing training in 'Problem Solving for Better Health'
Dreyfus Health Foundation, USA.

Professional Development

2017 Selected for Entrepreneurial Learning Academy
Sponsored by Office of Entrepreneurial Learning, Ball State University

2016 Selected for Inclusive Pedagogy Summer Seminars
Sponsored by Office of Institutional Diversity, Ball State University

2015 Blackboard Certified for Basic Use
Sponsored by Ball State University Distance Learning and iLearn

2014 Selected for Inclusive Pedagogy Summer Seminars
Sponsored by Office of Institutional Diversity, Ball State University

2013 Selected for the Faculty Seminar on Teaching First-Year Students.
Sponsored by Office of Educational Excellence, Ball State University

2013 Selected for Inclusive Pedagogy Summer Seminars
Sponsored by Office of Institutional Diversity, Ball State University

2012 Selected for Faculty Seminar on Teaching First-Year Students.
Sponsored by Office of Educational Excellence, Ball State University

2012 Selected for SOTL Fellowship (Scholarship of Teaching and Learning)
Sponsored by the Office of Educational Excellence, Ball State University.

2011 Selected for Faculty Seminar on Teaching First-Year Students.
Sponsored by Office of Educational Excellence, Ball State University

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4. RESEARCH EXPERIENCE

Refereed Publications.

1. **Khubchandani, J.,** Sharma, M., Huston, D., Tahiliani, J. (2017). Tobacco use related attitudes and behaviors in Indian adolescents: Association with school-based prevention education. *Health Promotion Perspectives*, in press
2. Tietjen, G. E., **Khubchandani, J.,** Herial, N., Palm-Meinders, I. H., Koppen, H., Terwindt, G. M., ... & Kruit, M. C. (2017). Migraine and vascular disease biomarkers: A population-based case-control study. *Cephalalgia*, in press
3. Price, J. H., & **Khubchandani, J.** (2017). Adolescent homicides, suicides, and the role of firearms: A narrative review. *American Journal of Health Education*, in press.
4. **Khubchandani, J.,** Price, J. H. (2017). Association of job insecurity with health risk factors and Poorer Health in American Workers. *Journal of Community Health*, in press
5. Payton, E., **Khubchandani, J.,** Thompson, A., & Price, J. H. (2017). Parents' expectations of high schools in firearm violence prevention. *Journal of Community Health*, in press

6. Maarefvand, M., Babaeian, N., Rezazadeh, S., **Khubchandani, J.** (2017). Engagement with peer-supported vocational networks: Recovered Iranian substance users' perspectives and practices. *Journal of Psychosocial Rehabilitation and Mental Health, in press*
7. Jordan, T.R., **Khubchandani, J.,** Wiblishauser, M. (2017). The impact of perceived stress and coping adequacy on the health of nurses: A pilot investigation. *Nursing Research and Practice,* in press
8. Stanford, J., Biba, A., **Khubchandani, J.,** Webb, F., & Rathore, M. H. (2017). Community-engaged strategies to promote hepatitis B testing and linkage to care in immigrants of Florida. *Journal of Epidemiology and Global Health*, in press
9. Price, J. H., **Khubchandani, J.** (2017). Latina adolescents' health risk behaviors and suicidal ideation and suicide attempts: Results from the National Youth Risk Behavior Survey 2001–2013. *Journal of Immigrant and Minority Health*, in press.
10. Moradi-Lakeh, M., Forouzanfar, M. H., Vollset, S. E., El Bcheraoui, C., Daoud, F., Afshin, A., …**Khubchandani, J.**,…... & Kiadaliri, A. A. (2017). Burden of musculoskeletal disorders in the Eastern Mediterranean Region, 1990–2013: findings from the Global Burden of Disease Study 2013. *Annals of the Rheumatic Diseases- BMJ,* in press
11. Sharma, M., **Khubchandani, J.,** & Nahar, V. K. (2017). Applying a new theory to smoking cessation: case of multi-theory model (MTM) for health behavior change. *Health Promotion Perspectives*, in press.
12. Fitzmaurice C, Allen C, Barber RM, Barregard L, Bhutta ZA, Brenner H, Dicker DJ, Chimed-Orchir O, Dandona R, Dandona L, Fleming T, Forouzanfar MH, Hancock J, Hay RJ, Hunter-Merrill R, Huynh C, Hosgood HD, Johnson CO, Jonas JB, **Khubchandani J**, ……..et. al. (2017). Global, regional, and national cancer incidence, mortality, years of life lost, years lived with disability, and disability-adjusted life-years for 32 cancer groups, 1990 to 2015. *Journal of American Medical Association (Oncology),* in press
13. Forouzanfar, M. H., Afshin, A., Alexander, L. T., Anderson, H. R., Bhutta, Z. A., Biryukov, S.,……..**Khubchandani, J.**,…..….Cohen, A. J., et. al. (2016). Global, regional, and national comparative risk assessment of 79 behavioral, environmental and occupational, and metabolic risks or clusters of risks, 1990–2015: a systematic analysis for the Global Burden of Disease Study 2015. *The Lancet*, *388*(10053), 1659-1724.
14. Wang, H., Bhutta, Z. A., Coates, M. M., Coggeshall, M., Dandona, L., Diallo, K., ...**Khubchandani, J.,** …. Hay, S. I. et. al. (2016). Global, regional, national, and selected subnational levels of stillbirths, neonatal, infant, and under-5 mortality, 1980–2015: a systematic analysis for the Global Burden of Disease Study 2015. *The Lancet*, *388*(10053), 1725-1774.
15. Kassebaum, N. J., Arora, M., Barber, R. M., Bhutta, Z. A., Brown, J., Carter, A.,…….. **Khubchandani, J.,** ……et. al. (2016). Global, regional, and national disability-adjusted life-years (DALYs) for 315 diseases and injuries and healthy life expectancy (HALE), 1990–2015: a systematic analysis for the Global Burden of Disease Study 2015. *The Lancet*, *388*(10053), 1603-1658.
16. Lim, S. S., Allen, K., Bhutta, Z. A., Dandona, L., Forouzanfar, M. H., Fullman, N., **Khubchandani, J**.,…..…..et.al. (2016). Measuring the health-related Sustainable Development Goals in 188 countries: a baseline analysis from the Global Burden of Disease Study 2015. *The Lancet*, *388*(10053), 1813-1850.
17. **Khubchandani, J**., Balls-Berry, J., Price, J. H., & Webb, F. J. (2016). Community engaged strategies to increase diversity of participants in health education research. *Health Promotion Practice*, *17*(3), 323-327.
18. **Khubchandani, J.,** Brey, R., Kotecki, J., Kleinfelder, J., Anderson, J. (2016). The psychometric properties of PHQ-4 depression and anxiety diagnosis scale in college students. *Archives of Psychiatric Nursing*, 30(4), 457–462.

19. Wang, H., Wolock, T. M., Carter, A., Nguyen, G., **Khubchandani, J.,** Kyu, H. H., Gakidou, E., ……. & Coates, M. M. (2016). Estimates of global, regional, and national incidence, prevalence, and mortality of HIV, 1980-2015: The Global Burden of Disease Study 2015. *The Lancet HIV*, 3(8).
20. Price, J. H., **Khubchandani, J.,** Price, J. A., Whaley, C., & Bowman, S. (2016). Reducing premature mortality in the mentally ill through health promotion programs. *Health promotion practice*, *17*(5), 617-622.
21. Maarefvand, M., Kassaie, B., Ghiasvand, H., Gharibdoosti, R. A., & **Khubchandani, J**. (2016). Sexual and Drug Use Risk Behaviors of Internal Long Distance Truck Drivers in Iran. *Iranian Journal of Public Health*, *45*(5), 606-613.
22. Safarabadi-Farahani, A., Maarefvand, M., Biglarian, A., **Khubchandani, J.** (2016). Effectiveness of a brief psychosocial intervention on quality of life of primary caregivers of Iranian children with cancer: A randomized controlled trial. *Journal of pediatric nursing*, 31(4), e262–e270.
23. Javed, N. H., Alsahly, M. B., & **Khubchandani, J.** (2016). Oral Feeding of Probiotic Bifidobacterium infantis: Colonic Morphological Changes in Rat Model of TNBS-Induced Colitis. *Scientifica*, *2016*.
24. Price, J. H., & **Khubchandani, J.** (2016). Firearm Violence by the Mentally Ill: Mental Health Professionals' Perceptions and Practices. *Violence and Gender*, *3*(2), 92-99.
25. Price, J.H., **Khubchandani, J.,** Payton, E., Thompson, A. (2016). Reducing the risks of firearm violence in high schools: Principals' perceptions and practices. *Journal of Community Health*, 41(2), 234-243.
26. Price, J.H., **Khubchandani, J.** (2016). Health Education Research and Practice Literature on Hispanic Health Issues Have We Lost Sight of the Largest Minority Population? *Health Promotion Practice*, 17, 172-176.
27. Webb, F.J., **Khubchandani, J.,** Hannah, L., Doldren, M., Stanford, J. (2016). The perceived and actual physical activity behaviors of African-American women. *Journal of Community Health*, 41(2), 368-375.
28. Stanford, J., **Khubchandani, J.,** Webb, F.J., Lee, J., Doldren, M., Rathore, M. (2015). Teacher and friend social support: Association with body weight in African-American adolescent females. *Journal of Racial and Ethnic Health Disparities*, 2(3), 358-364.
29. Balls-Berry, J., ……..**Khubchandani, J.,** et. al. (2015). Black men's perceptions and knowledge of diabetes: A church-affiliated barbershop focus group study. *Journal of Racial and Ethnic Health Disparities*, 2(4), 465-472.
30. **Khubchandani, J.,** Price, J.H. (2015). Workplace harassment and morbidity among US adults: Results from the National Health Interview Survey. *Journal of Community Health*, 40(3),555-563.
31. Kotecki, J.E., **Khubchandani, J.,** Simmons, R., Sharma, M. (2015). Mind–body interventions: Applications and potential opportunities for health education practice. *Health Promotion Practice*, 16(2),157-161.
32. Price, J.H., **Khubchandani, J.,** (2015). Vision impaired or professionally blind: Health education research and firearm violence. *Health Promotion Practice*, 16(3),316-319.
33. Wiblishauser, M., **Khubchandani, J.,** Rijhwani, L., Balls-Berry J. (2015). Skin cancer prevention guidelines for school aged children. *Gulf Journal of Dermatology and Venerology*, 22(2), 8-12.
34. Fernandes, N., **Khubchandani, J.,** Seabert, D., Nimkar, S. (2015). Overweight status in Indian children: Prevalence & psychosocial correlates. *Indian Pediatrics*, 52(2),131-134.
35. Tietjen, G., **Khubchandani, J.** (2015). Biomarkers in migraine. C*ephalalgia*, 35(2),95-117.
36. Fan, M., Jin, Y., **Khubchandani, J.** (2014). Overweight misperception among adolescents in the United States. *Journal of Pediatric Nursing*, 29(6), 536-546.

37. **Khubchandani, J.,** Kumar, R., Clark, J.K. (2014). Beyond controversies: Sexuality education for adolescents in India. *Journal of Family Medicine and Primary Care*, 3(3),175-179.
38. Webb, F., **Khubchandani, J.**, Doldren, M., Balls-Berry, J., Blanchard, S., Hannah, L., Stanford, J. (2014). African American women's eating habits and intention to change: A pilot study. *Journal of Racial and Ethnic Health Disparities*, 1(3), 199-206.
39. Price, J.H., Braun, R., **Khubchandani, J.,** Payton, E., & Bhattacharjee, P. (2014). Development of an attribution of racial/ethnic health disparities scale. *Journal of Community Health*, 39(4), 792-799.
40. Price, J.H., Thompson, A.J., **Khubchandani, J.**, Dake, J., Payton, E., & Teeple, K. (2014). University presidents' perceptions and practices regarding concealed handguns on campus. *Journal of American College Health*, 62(7):461-469.
41. Shue, C. K., McGeary, K. A., Reid, I., **Khubchandani, J.,** & Fan, M. (2014). Health care reform: Understanding individuals' attitudes and information source. *BioMed Research International*, Article ID 813851.
42. Chothe, V., **Khubchandani, J.**, Seabert, D., Asalkar, A., Rakshe, A., Firke, J., & Midha, I. (2014). Indian students' perceptions and doubts about menstruation: A case study. *Health Promotion Practice*, 15(3), 319-326.
43. Tang, S., Patel, P., **Khubchandani, J.**, & Grossberg, G. (2014). The psychogeriatric patient in the emergency room: focus on management and disposition. *ISRN Psychiatry*. Volume 2014, Article ID 413572.
44. Price, J.H., Thompson, A.J., **Khubchandani, J.,** & Wiblishauser, M. (2014). Psychiatric residency directors' perceptions of firearm access by the mentally ill in the United States. *Journal of Community Health*, 39 (2), 322-326.
45. Price, J.H., **Khubchandani, J.**, McKinney, M., & Braun, R. (2013). Racial/Ethnic disparities in chronic diseases of youths and access to health care in the United States. *BioMed Research International*, Article ID 787616.
46. Riggs, N., Tewari, A., Stigler, M., Rodrigues, L., Arora, M., **Khubchandani, J.**, Simmons R. (2013). Indian students' perspectives on obesity and school-based obesity prevention: A qualitative examination. *Health Promotion Practice*, 14(6), 816-823.
47. Thompson, A., Price, J., Dake, J., Teeple, K., Bassler, S, & **Khubchandani, J.**, Kerr, D., Brookins Fisher, J., Rickard, M., Oden, L., Aduroja, A., Lyde, A., Philips, K., Adeyanju, M., Eggleston, B., Ferng-Kuo, S.F., et. al. (2013). Student perceptions and practices regarding carrying concealed handguns on university campuses. *Journal of American College Health*, 61(5), 243-253.
48. Javed, N.H., Furman, D., & **Khubchandani, J.** (2013). The regulatory effects of Bifidobacterium Infantis on the secretomotor activity of the enteric nervous system. *Chronicles of Young Scientists*, 4(2), 114-120.
49. Plumb, E., Roe, K., Plumb, J., Sepe, P., Soin, K., Ramirez, A., Simmons, R., & **Khubchandani, J.** (2013). Use of international service learning for global health education: case studies from Rwanda & Mexico. *Health Promotion Practice*, 14(3), 334-342.
50. **Khubchandani, J.**, Telljohann, S., Price, J.H., Dake, J.A., & Hendershot, C. (2013). Providing assistance to victims of adolescent dating violence: A national assessment of school nurses' practices. *Journal of School Health*, 83(2), 127-136.
51. Price, J.H., Kirchoffer, G., **Khubchandani, J.**, Kleinfelder, J., & Bryant, M. (2013). Developing a college student healthcare system mistrust scale. *American Journal of Health Education*, 44(1), 19-25.
52. Tietjen, G.E., **Khubchandani, J.**, Ghosh, S., Bhattacharjee, S., & Kleinfelder, J. (2012). Headache symptoms & indoor environmental parameters: Results from the EPA BASE study. *Annals of Indian Academy of Neurology*, 15(5), 95-99.

53. Price, J.H., Thompson, A., **Khubchandani, J.**, Wiblishauser, M., Dowling, J., & Teeple, K. (2013). Perceived roles of Emergency Department physicians regarding anticipatory guidance on firearm safety. *Journal of Emergency Medicine*, 27(1), 1-10.
54. **Khubchandani, J.,** Price, J.H., Thompson, A., Dake, J.A., Wiblishauser, M., & Telljohann, S.K (2012). Adolescent dating violence: a national assessment of school counselors' perceptions and practices. *Pediatrics*, 130(2), 202-210.
55. Clark, J.K., Brey, R., Banter, A., **Khubchandani, J**. (2012). The delivery of sexuality-related patient education to adolescent patients: a preliminary study of family practice resident physicians. *Journal of Family Medicine and Primary Care*, 1(1), 34-38.
56. **Khubchandani, J.**, & Simmons, R. (2012). Going global: Building a foundation for global health promotion research to practice. *Health Promotion Practice*, 13(3), 293-7.
57. Tietjen, G.E., **Khubchandani, J.,** Herial, N., & Shah, K. (2012). Migraine and biomarkers of endothelial activation in young women: association with adverse childhood experiences. *Headache*, 52(6), 920-929.
58. Thompson, A., Price, J.H., **Khubchandani, J.**, Bryant, M., Reindl, D., & Hogue, P. (2012). Physician assistants' training on firearm injury prevention. *Patient Education and Counseling*, 86(3), 348-353.
59. Simmons, R., & **Khubchandani, J**. (2012). Interview with Dr. Omar Khan, noted global health specialist. *Health Promotion Practice*, 13(4), 444-446.
60. **Khubchandani, J.** (2011). State of the globe: Many challenges of the multifaceted leprosy. *Journal of Global Infectious Diseases*, 3(4), 315-316.
61. Faruqui, T.F., **Khubchandani, J.**, Price, J.H., Reddy, R., & Bolyard, D. (2011). Sleep disorders in children: A national assessment of pediatricians' practices and perceptions. *Pediatrics*, 128(3), 539-546.
62. **Khubchandani, J.,** Price, J.H., Wiblishauser, M., & Thompson, A. (2011). Graduate psychiatric nurses training on firearm injury prevention. *Archives of Psychiatric Nursing, 25(4), 245-252*.
63. Thompson, A., Price, J.H., **Khubchandani, J.**, & Dowling, J. (2011). Sheriffs' perceptions of firearm control policies. *Journal of Community Health*, 36(5), 715-720.
64. Jordan, T.R., **Khubchandani, J.**, Wiblishauser, M., Glassman, T., & Thompson, A (2011). Do respiratory therapists receive training & education in smoking cessation? A National study of post-secondary training programs. *Patient Education & Counseling*, 85(1), 99-105.
65. Price, J.H., Thompson, A.J., **Khubchandani, J.**, Mrdjenovich, A.J., & Price, J.A. (2010). Firearm anticipatory guidance training in psychiatric residency programs. *Academic Psychiatry*, 34, 417-423.
66. Price, J.H., **Khubchandani, J.**, Dake, J.A., Thompson, A., Schmalzried, H., Adeyanju, M., Murnan, J., Pringle, D., Zullig, K.J., Ausherman, J., & Jackson, D.L (2010). College student's perceptions and experiences with health insurance. *Journal of the National Medical Association*, 102(12), 1222-1230.
67. McKenzie, J.F., & **Khubchandani, J** (2010). One more step to profession unity: Is it possible to bring the professional health education organizations together? *Californian Journal of Health Promotion*, 8(1), v-viii.
68. Lalane, N.E., Rijhwani, P., Mehta, S., Meholi, M., Wiblishauser, M., **Khubchandani, J** (2010). Disseminated gonococcal infection: A case report. *Gulf Journal of Dermatology and Venereology*, 17(2), 50-53. *Please note, in this journal, senior author is listed last.*
69. Price, J.H., **Khubchandani, J.**, Bryant, M., Rickard, M., Hendershot, C., & Thompson, A. (2010). Effect of multiple authored versus single authored covering letters on survey return rates. *Psychological Reports*, 107, 209-212.
70. Ubokudom, S.E., **Khubchandani, J**. (2010). The ecology of health policy making and reform in the United States of America. *World Medical and Health Policy*, 2(1), 1-32.

71. Rickard, M., Hendershot, C., **Khubchandani, J.**, Price, J.H., & Thompson, A. (2010). School nurses' perceptions and practices of assisting students in obtaining public health insurance. *Journal of School Health*, 80(6), 312-320.
72. Lokhande, A., Wiblishauser, M., & **Khubchandani, J.** (2010). Keloid and hypertrophic scar formation after male circumcision. *Gulf Journal of Dermatology and Venereology*, 17(1), 50-51. *Please note, in this medical journal, senior author is listed last.*
73. Thompson, A.J., Price, J.H., Mrdjenovich, A.J., & **Khubchandani, J**. (2009). Reducing firearm-related violence on college campuses-police chiefs' perceptions & practices. *Journal of American College Health*, 58(3), 247-254.
74. **Khubchandani, J.**, Nagy, C.M., Watkins, C., Nagy, S. (2009). A preliminary survey of university employees' perceptions of work-related stress: Association with diet and physical activity on campus. *American Journal of Health Studies*, 24(2), 306-313.
75. Tietjen, G.E., & **Khubchandani, J** (2009). Platelet dysfunction and stroke in the female migraineur. *Current Pain & Headache Reports*, 13(5), 386-91.
76. **Khubchandani, J.**, Price, J.H., & Dake, J. (2009). Firearm injury prevention training in preventive medicine residency programs. *Journal of Community Health*, 34(4), 295-300.
77. **Khubchandani, J.**, & Jordan, T.R. (2009). The undermined determinant of a college's success: Health and wellness of a college employee. *Californian Journal of Health Promotion*, 7(2), 101-109.
78. Watkins, C.M., Lartey, G., Golla, V., & **Khubchandani, J**. (2008). Worker's perception: Environmental factors influencing obesity at the workplace. *American Journal of Health Studies*, 23(2), 68-78.

Book Chapters

1. **Khubchandani, J.** (2013). Health Insurance for Students and Staff. In D Wiley & A Cory (Eds.). Encyclopedia of School Health. Sage Publications. (Invited). Pg 292-294.

2. Watkins, C., White, J., Duncan, D.F., Wyant, D., Nicholson, T., **Khubchandani, J.**, & Chekuri, L (2010). Consumer-directed health insurance vs. managed care: Analysis of healthcare utilization and expenditures incurred by employees in a rural area. In Jennie Kronenfeld (ed.) The Impact of Demographics on Health & Health Care: Race, Ethnicity and Other Social Factors (Research in the Sociology of Health Care, Vol. 28), Emerald Publishing Ltd. Pages.197-214.

Published Abstracts

1. Haroldson, A., **Khubchandani, J.,** Kotecki, J.E., Roubal, A. (2015). Diet Counseling for Adults in the United States: Trends and determinants from the National Health Interview Survey (2011-13). *Journal of Nutrition Education and Behavior*, 47(4), S84-S85 **IF=1.90**
2. Sartin, K., Friesen, C.A., **Khubchandani, J.** (2015). Relationship between Fruit and Vegetable Intake, Hypertension, and Body Mass Index: An assessment of BRFSS data. *Journal of the American Academy of Nutrition and Dietetics*, 115(9): A90. **IF=2.07**
3. Tietjen, G.E., **Khubchandani, J.** (2014). Effect of depression and headache on cardiovascular diseases. *Headache*, 54(8), 1423-1424. **IF=2.93**
4. Tietjen, G.E., **Khubchandani, J.** (2014). Depression Has Additive Effect on Headache Associated Pain Comorbidities. *Headache*, 54(8), 1424-1425 **IF=2.93**
5. Tietjen, G., Thotakura, S., Singh, J., Utley, C., Williams, V., **Khubchandani, J.**, Khuder, S. (2013). Headache Prevention with Cranial Electrotherapy Stimulation in Chronic Migraine: A Randomized Controlled Trial. *Cephalalgia*, 33(11), 954-992. **IF=3.45**

6. Raj, S., Bieszczad, J., **Khubchandani, J.**, Dayanathan, A., Dennis, M., Brickman, C., & Ali, I. (2011). Cumulative radiation exposure in epilepsy patients: a retrospective analysis of computer axial tomography. *Neurology*, 76, s4, s552. **IF=8.31**
7. Tietjen, G., Ghosh, S., **Khubchandani, J.**, Bhattacharjee, S., & Kleinfelder, J. (2011). Association of migraine & headache frequency with indoor environmental parameters in US workers: The EPA BASE Study. *Headache*, 51, s1-s66.**IF=2.93**
8. Tietjen, G.E., **Khubchandani, J.**, Herial, N., & Shah, K. (2011). Migraine and biomarkers of endothelial activation in young women: association with adverse childhood experiences. *Headache*, 51, s1-s66. **IF=2.93**
9. Tietjen, G.E., Brandes, J.L., Peterlin, B., Eloff, A., Dafer, R., Stein, M.R., Drexler, E., Martin, V.T., Hutchinson, S., Aurora, S., Recober, A., **Khubchandani, J.**, Herial, N., & Utley, C (2011). Depression has a greater influence than migraine frequency on comorbidity prevalence. *Headache*, 50, s1-s66. **IF=2.93**
10. Tietjen, G.E., Brandes, J.L., Peterlin, B.L., Eloff, A., Dafer, R.M., Stein, M.R., Drexler, E., Martin, V.T., Hutchinson, S., Aurora, S.K., Recober, A., **Khubchandani, J.**, Herial, N., & Utley, C (2011). The influence of childhood trauma on clinical phenotype in depressed migraineurs. *Headache*, 50, s1-s66. **IF=2.93**
11. James, E.G., Tietjen, G.E., & **Khubchandani, J** (2011). "Get with the Guidelines" Predictors of Post-Stroke Recovery: A Retrospective Chart Review. *Neurology*, 76, s4, s552-554. **IF=8.31**
12. Greenfield, L.J., Shah, K., & **Khubchandani, J.** (2011). Utility of the "stuffed animal sign" and other circumstantial and behavioral features in the diagnosis of epileptic and non-epileptic seizures. *Neurology*, 76, s4, s552-554. **IF=8.31**
13. Tietjen, G.E., **Khubchandani, J.**, Herial, N., Kosmyna, J., & Khuder, S.A. (2010). Biomarkers of platelet function in migraine: A case control study. *Headache*, 50, s40-s49. **IF=2.93**
14. Tietjen, G.E., Brandes, J.L., Peterlin, B.L., Eloff, A., Dafer, R.M., Stein, M.R., Drexler, E., Martin, V.T., Hutchinson, S., Aurora, S.K., Recober, A., Herial, N., Utley, C., White, L., Khuder, S.A., & **Khubchandani, J.** (2010). Childhood maltreatment is associated with cardiovascular risk factors and disease in migraineurs. *Headache*, 50, s54. **IF=2.93**
15. Tietjen, G.E., Brandes, J.L., Peterlin, B.L., Eloff, A., Dafer, R.M., Stein, M.R., Drexler, E., Martin, V.T., Hutchinson, S., Aurora, S.K., Recober, A., Herial, N., Utley, C., White, L., & **Khubchandani, J.** (2010). Migraine comorbidity constellations and the association with childhood maltreatment: A multicenter cluster analysis. *Headache*, 50, s62. **IF=2.93**
16. Tietjen, G.E., **Khubchandani, J.**, Khan, M.A., & Herial, N.A (2010). Adiponectin and inflammatory cytokines in young women with migraine. *Headache*, 50, s71. **IF=2.93**
17. Tietjen, G.E., Brandes, J.L., Peterlin, B.L., Eloff, A., Dafer, R.M., Stein, M.R., Drexler, E., Martin, V.T., Hutchinson, S., Aurora, S.K., Recober, A., Herial, N., Utley, C., White, L., Khuder, S.A., & **Khubchandani, J** (2010). The impact of head and neck injuries on migraine and comorbidities. *Headache*, 50, s63. **IF=2.93**
18. Chopra, A., **Khubchandani, J.**, Mehta, S., & Zolty, R (2010). Comparison of prognostic predictors among nonresponders: Vasoreactivity testing in pulmonary artery hypertension. *CHEST*, 138 (4), 361A. **IF=5.85**
19. Thompson, A., **Khubchandani, J.**, Dake, J.A., Price, J.H., Schmalzried, H., Adeyanju, M., Murnan, J., Pringle, D., Zullig, K.J., Ausherman, J., et. al. (2010). College student's coverage and perceptions of health insurance. *Annals of Behavioral Medicine*, 39, s84. **IF=3.98**

Papers Presented at Professional Meetings

For presentations also published as abstracts, see published abstracts on page above.

National and International Conference Presentations

1. **Khubchandani, J.,** Wiblishauser, M., Jordan, T. (2017). Influence of perceived stress and coping adequacy on the health of nurses: a pilot study. Society for Public Health Education's 68th Annual Conference, Denver, CO.
2. **Khubchandani, J.** (2017). Health information technology use & its impact on health outcomes in older adults. Society for Public Health Education's 68th Annual Conference, Denver, CO.
3. Whaley, C.D., Bryzek, J., **Khubchandani, J.,** Stone, G., Gray, J., Payton E.D. (2017). Preventing and responding to youth violence: A national study of school social workers perceptions and practices. Society for Public Health Education's 68th Annual Conference, Denver, CO.
4. **Khubchandani, J.,** Price, J (2017). Job insecurity and worker health in the United States. Society for Public Health Education's 68th Annual Conference, Denver, CO.
5. Payton, E.D., **Khubchandani, J.**, Thompson, A., Price, J (2017). Parents' expectations of high schools in firearm violence prevention: A national assessment of American parents. Society for Public Health Education's 68th Annual Conference, Denver, CO.
6. Seabert, D., & **Khubchandani, J.** (2015). Injury and violent risk behaviors: Are obese adolescents at a higher risk? 66th American School Health Association Annual Conference, Orlando, FL.
7. Wood, M.L., **Khubchandani, J.** (2015). Addressing Health and Social Needs of LGBT led Families: A Comprehensive Review and Recommendations for Health Professionals. 66th Society for Public Health Education Annual Conference, Portland, OR.
8. **Khubchandani, J**., Seabert, D. (2015). Exposures to Anti-tobacco messages: Association with tobacco use behavior in Indian adolescents. 66th Society for Public Health Education Annual Conference, Portland, OR.
9. Wood, M.L., & **Khubchandani, J.,** Payton, E. (2015). Homophobic Victimization of Adolescents: Associations with Health Risk Factors and Psychosocial Distress. 66th Society for Public Health Education Annual Conference, Portland, OR.
10. Kotecki, J. E., **Khubchandani, J.,** Roubal, A. (2015). Neighborhood Social Cohesion and Cardiovascular Risk Factors in African-Americans. 66th Society for Public Health Education Annual Conference, Baltimore, MD.
11. Kerr, D.L., **Khubchandani, J.,** Sorokas, K. (2015). Lesbian and Bisexual Undergraduate Females' Experience of Victimization and Perceived Safety on Campus: Association with Health Risk Factors and Academic Outcomes. 66th Society for Public Health Education Annual Conference, Portland, OR.
12. Bhattacharjee, S., **Khubchandani, J.** (2015). Workplace Exposures to Environmental Health Risk Factors in the United States: Race, Gender, and Occupation Based Disparities. 66th Society for Public Health Education Annual Conference, Portland, OR.
13. Kleinfelder, J., Kotecki, J. E., Brey, R., **Khubchandani, J.,** Ham, A., Reed, E. (2015). College Students' Perceptions and Use of E-cigarettes. 66th Society for Public Health Education Annual Conference, Portland, OR.
14. Knapp, L., Hamilton, C., **Khubchandani, J.,** LeBlanc, D. (2015). Migrant Employment and HIV Prevalence: A Case Study from Lake Victoria Fishing Camps, Tanzania. 66th Society for Public Health Education Annual Conference, Portland, OR.
15. **Khubchandani, J.**, Price, J.H. (2015). Workplace harassment and bullying in the United States: Results from the National Health Interview Survey. 66th Society for Public Health Education Annual Conference, Portland, OR.
16. Smith, C., **Khubchandani, J.** (2015). Adolescent Suicide Attempts and Suicidal Ideation: A 70 country comparison. 66th Society for Public Health Education Conference, Portland, OR.

17. Seabert, D., **Khubchandani, J**., Chothe, V., Cosgray, O. (2015). Indian Adolescents Knowledge and Perceptions on Menstrual Health and Hygiene Practices. 66th Society for Public Health Education Annual Conference, Portland, OR.
18. Seabert, D., & **Khubchandani, J.** (2014). Indian adolescents' perceptions of tobacco use and smoking. 65th American School Health Association Annual Conference, Portland, OR.
19. Seabert, D., **Khubchandani, J**., & Beck, L. (2014). Analysis of state laws on education for adolescent dating violence prevention. 65th American School Health Association Annual Conference, Portland, OR.
20. Thompson, A.J., Price, J.H., **Khubchandani, J.**, Payton, E., & Teeple, K. (2013). University presidents' perceptions and practices regarding concealed handguns on campus. 141st American Public Health Association Annual Conference, Boston, MA.
21. Shue, C.K., McGeary, K.A., Reid, I., **Khubchandani, J.**, & Fan, M. (2013). Health care reform: Understanding individuals' attitudes and information source. 99th National Communication Association Annual Conference, Washington, DC.
22. **Khubchandani, J**., Clark, J.K., Thompson, A.J., Clark, R., & Miller, E. (2013). Adolescent dating violence: High school principals' practices and perceptions. 87th American School Health Association Conference, Myrtle Beach, SC.
23. **Khubchandani, J**., McGeary, K.A., Shue, C., & Fan, M. (2013). Understanding state-level attitudes toward healthcare reform. 64th Society for Public Health Education Annual Conference, Orlando, FL.
24. Wood, M.L., & **Khubchandani, J.** (2013). The nature and extent of school violence against LGBT youth: A review of prevalence, predictors, & preventive measures. 64th Society for Public Health Education Annual Conference, Orlando, FL.
25. Price, J.H., **Khubchandani, J.,** Braun, R., Payton, E., & Bhattacharjee, P (2013). Development of a perceived etiology of racial/ethnic health disparities scale. 64th Society for Public Health Education Annual Conference, Orlando, FL.
26. **Khubchandani, J.,** Clark, J.K., Wiblishauser, M., Price, J.H., Telljohann, S., & Sullivan, E. (2013). Adolescent dating violence prevention: Comparative analysis of school nurses', school counselors', and school principals' perceptions. 64th Society for Public Health Education Annual Conference, Orlando, FL.
27. Wood, M.L., & **Khubchandani, J.** (2013). Dating violence in LGBT youth: An exploratory review. 64th Society for Public Health Education Annual Conference, Orlando, FL.
28. Thompson, A., **Khubchandani, J.**, Price, J, Dake, J., Kerr, D., & Brookins, F.J. (2013). Student perceptions & practices regarding carrying concealed handguns on university campuses. 64th Society for Public Health Education Annual Conference, Orlando, FL.
29. **Khubchandani, J**., Brey, R., Heator, K., & Sajjad, S. (2012). Racial and ethnic disparities in mental health of youths. 63rd American School Health Association Annual Conference, San Antonio, TX.
30. **Khubchandani, J.**, Seabert, D., & Fan, M. (2012). Association of dating violence victimization with other violent behaviors. 63rd American School Health Association Annual Conference, San Antonio, TX.
31. **Khubchandani, J.**, Seabert, D., & Clark, S.E. (2012). Adolescent dating violence prevention: a review of strategies and interventions. 63rd American School Health Association Annual Conference, San Antonio, TX.
32. Fernandes, N.V., **Khubchandani, J.**, Kotecki, J., & Friesen, C. (2012). Diet and physical activity counseling: physicians' practices and perceptions. 63rd Society for Public Health Education Annual Conference, San Francisco, CA.
33. Price, J., **Khubchandani, J.**, (2012). Developing a college student healthcare system mistrust scale. 63rd Society for Public Health Education Annual Conference, San Francisco, CA.

34. Webb, F., **Khubchandani, J.**, & Balls, J. (2011). African-American women's eating habits and readiness to change. 62nd Society for Public Health Education Conference, Washington, DC.
35. **Khubchandani, J**., Sullivan, E., & Kotecki, J. (2011). Psychosocial correlates of alcohol use in youth of Quito. 62nd Society for Public Health Education Conference, Washington, DC.
36. **Khubchandani, J.**, Telljohann, S.K., Price, J.H., Dake, J.A., & Thompson, A. (2011). Adolescent dating violence: school nurses and school counselor's practices & perceptions. 62nd American School Health Association Conference, Louisville, KY.
37. Clark, J., **Khubchandani, J.**, & Roach, N. (2011). Protective factors for tobacco use in youth of Quito: Results from the global school based student health survey. 62nd American School Health Association Conference, Louisville, KY.
38. Bhattacharjee, S., **Khubchandani, J.**, Ghosh, S., & Young-Corbett, D. (2011). Effect of indoor environmental quality on students' health in schools: A review of the literature. 62nd American School Health Association Conference, Louisville, KY.
39. Thompson, A., Price, J.H., **Khubchandani, J.**, & Wiblishauser, M. (2011). How did they get the gun: Firearm policy failure based on NICS screening? 32nd Annual Scientific Sessions of the Society of Behavioral Medicine, Washington, DC.
40. Thompson, A., Price, J., **Khubchandani, J.**, Wiblishauser, M., Dowling, J., & Teeple, K. (2011). Perceived roles of emergency department physicians regarding firearm violence. 32nd Annual Meeting & Scientific Sessions of Society of Behavioral Medicine, Washington, DC.
41. Thompson, A., Price, J.H., **Khubchandani, J.**, Bryant, M., Reindl, D., & Hogue, P.A. (2010). Physician assistant's training on firearm injury prevention. 31st Society of Behavioral Medicine Annual Meeting and Scientific Sessions, Seattle, WA.
42. **Khubchandani, J** (2010). Graduate psychiatric nurses training on firearm injury prevention. 31st Society of Behavioral Medicine Annual Meeting and Scientific Sessions, Seattle, WA.
43. **Khubchandani, J.**, Telljohann, S.K., Price, J.H., Dake, J.A., & Hendershot, C. (2010). Adolescent dating violence: School nurses' practices and perceptions. 61st American School Health Association Annual Conference, Kansas City, MO.
44. Wiblishauser, M., Jordan, T.R., **Khubchandani, J.**, Glassman, T., & Thompson, A. (2010). Do respiratory therapists receive training & education in smoking cessation? A National Study. 138th American Public Health Association Annual Convention, Denver, CO.
45. **Khubchandani, J.** (2010). Adolescent dating violence: School counselors' practices. 61st Society for Public Health Education Annual Conference, Denver, CO.
46. Price, J.H., Thompson, A., **Khubchandani, J.**, Mrdjenovich, A., & Price, J.A. (2009). Firearm anticipatory guidance training in psychiatric residency programs. 30th Society of Behavioral Medicine Annual Scientific Sessions, Montreal, Canada.
47. Rickard, M., Hendershot, C., Thompson, A., **Khubchandani, J.**, & Price, J. (2009). School nurses' perceptions of schools assisting students in obtaining public health insurance. 60th American School Health Association Conference, Denver, CO.
48. Thompson, A., Price, J.H., Mrdjenovich, A., & **Khubchandani, J.** (2009). Reducing firearm related violence on college campuses: Police chief's perceptions and practices. 137th American Public Health Association Convention, Philadelphia, PA.
49. Thompson, A.J., Price, J.H., **Khubchandani, J.**, & (2009). Sheriffs' perceptions of firearm-control policies. 137th American Public Health Association Convention, Philadelphia, PA

State and Local Refereed Conference Presentations

1. Petricevic, J., Orchard, J., & **Khubchandani, J.** (2016). Work-Family conflict in American women is associated with health risk factors. Ball State University, Student Research Symposium, Muncie, IN.

2. Dugan, M., **Khubchandani, J.** (2014). Are racial and ethnic minority youths more vulnerable to mental illness? An exploratory investigation. Ball State University, Student Research Symposium, Muncie, IN.
3. Cosgray, O., Deathe, A., **Khubchandani, J.** (2014). Adolescents' perceptions and knowledge about menstruation in middle and low income countries: A case study from India. Ball State University, Student Research Symposium, Muncie, IN.
4. Rayasa, D., Furman, D., **Khubchandani, J.**, & Clark, J. (2011). Tobacco use prevention education of health professionals in the United States. Ball State University, Student Research Symposium, Muncie, IN.
5. Roach, N., **Khubchandani, J.**, & Clark, J. (2011). Tobacco use in youth of Ecuador (Quito): Results from the Global School-based Student. Ball State University, Student Research Symposium, Muncie, IN.
6. **Khubchandani, J.** (2009) Firearm anticipatory guidance training in psychiatric residency programs. Graduate research Conference 2009, University of Toledo.
7. Nagy, M.C., & **Khubchandani, J.** (2008). University employees' perceptions of work related stress: Association with diet and exercise patterns on campus. 60th Kentucky Public Health Association Annual Conference, Louisville, KY.
8. **Khubchandani, J** (2008). University employees' perceptions of work related stress: Association with diet and exercise patterns on campus. Graduate Student Research Conference 2008, University of Toledo.
9. **Khubchandani, J.**, Nagy, S., & Watkins, C. (2007). HIV education: The American Red Cross way. Kentucky Public Health Association, 59th Annual Conference, Louisville, KY.
10. **Khubchandani, J.**, Gokarakonda, B.S., & Watkins, C. (2007). HIV awareness of health care professionals: Yesterday and today. 58th Kentucky Public Health Association Annual Conference, Louisville, KY.
11. Watkins, C., Chekuri, L., & **Khubchandani, J.** (2006). Consumer-Directed health insurance and the worksite: A two-year review/are the savings real? 58th Kentucky Public Health Association Annual Conference, Louisville, KY.
12. Rowland, C., **Khubchandani, J.**, & Watkins, C. (2006). Workers' perception: Environmental factors influencing physical activity and eating patterns. 58th Kentucky Public Health Association Annual Conference, Louisville, KY.
13. **Khubchandani, J.** (2007) Worker's perception: Environmental factors influencing physical activity and eating patterns. Graduate Student Research Conference 2007, Western Kentucky University, Bowling Green, KY.
14. **Khubchandani, J.**, Chauhan, S., & Watkins, C. (2006). The science of immunization as a part of public Health. Kentucky Public Health Association Annual Conference, Louisville, KY.

Research Chronicled in Mass Media

Spr 2016	*Research on High School Principals and Violence in Schools* News appeared on BSU news and Muncie Star Press.
Spr 2016	*Research on Screening College Students for Depression and Anxiety* News appeared on BSU Daily news, Medical news today, University Business, Mdlinx, and WNN Health.
Fall 2014	*Research on Workplace Harassment in the United States.* News articles appeared on BSU Media/ News, Bloomberg NA, Benefits Pro, www.safetyandhealthmagazine.com, and www.docphin.com

Fall 2014 *Research on Adolescent Dating Violence in Indiana.*
News articles appeared on BSU Media/ News, Muncie Star Press, www.eaglecountryonline.com , www.pal-item.com, Medical Express, etc.

Sum 2014 *Research on University Presidents' Perceptions of Guns on Campus*
News articles appeared on USA Today, Chronicles of Higher Education, Indy Star, Huffington Post, Muncie Star Press, CBS news, RWJF blog, WSLM Radio, etc.

Sum 2014 *Research on Affordable Care Act and Individuals' Perceptions*
News appeared on Inside Indiana Business, Insurance News, and BSU News.

Fall 2013 *Research on College Students Perceptions of Guns on Campus*
News articles appeared on USA Today, Chronicles of Higher Education, Indy Star, Huffington Post, Muncie Star Press, CBS news, RWJF blog, WSLM Radio, etc.

Sum 2013 *Bullying Prevention Activities in Yorktown High School, Indiana*
Activities reported in Yorktown Press.

Spr 2013 *Research on school nurses training to reduce adolescent dating violence.*
News articles appeared on BSU news, News Line, BSU Daily News, SchoolNurse.Com, and other nursing media outlets.

Fall 2012 *Research linking Uncomfortable indoor environments to migraines.*
News articles appeared on BSU news, HeadacheandMigraineCare.com, Indiana Chamber of Commerce, and several other media outlets.

Sum 2012 *Research on school counselors and teen dating violence prevention.*
News articles appeared on Fox News, US News and World Report, CNBC, Yahoo News, Huffington Post, Reuters Health, Chicago Tribune, BSU news, & others.

Spr 2012 *Research on Migraines and strokes may be linked to childhood adversity.*
News articles appeared on BSU news, DailyRx, World News, National Headache Foundation, and other media outlets.

Spr 2012 *Preventing Violence Against Women.*
Campaign to raise awareness on violence against women (funded by Office of Womens Health, USDHHS). Details were on BSU Daily News.

Fall 2011 *Research on psychiatric nurses training to reduce firearm suicides.*
News articles appeared on Medical Express, BSU news, BSU Daily News.

Contracts, Grants, and Funding for Research/Creative Endeavors

1. **Khubchandani, J.** (2017). Sleep Problems in American Adults: Epidemiology, Comorbidity Clusters, and Healthcare Utilization. Funded by Merck Neuroscience Research Laboratories ($9770). Applied 06/2016 and awarded 09/2016. Role: PI

2. Whaley, C., **Khubchandani, J.**, Alexander, C. (2017). Discovery of Underrepresented Groups in Health Research. Funded by Discovery Group.($17770). Applied 10/2016 and awarded 03/2017. Role: Co-PI

3. **Khubchandani, J.,** Bryzek, J. (2016). A national assessment of health teachers' perceptions of dating violence in schools. Funding Agency: *Department of Physiology and Health Science, Ball State University.* (funded for $750). Role: Principal Investigator. Applied 03/2016 and awarded 04/2016

4. **Khubchandani, J.** (2015). Health Risk Profiles of Indiana Citizens. Funding Agency: *Northeast Indiana Area Health Education Center* (funded for $8500). Role: Consultant. Applied 03/2014 and awarded 05/2014

5. **Khubchandani, J.**, & Seabert, D. Walking the talk in bullying prevention: A school based youth directed approach. Funding Agency: *Indiana Child and Family Administration Services* (funded for $3500). Role: Co-Investigator. Applied 05/2012 and awarded 08/2012

6. **Khubchandani, J.** Preventing violence against women. Funding Agency: *OPI Nail Polish, Inc*. (funded in kind $850). Role: PI, Applied 03/2013 and awarded 03/2013

7. **Khubchandani, J.**, & Miller, E. Disparities in prevalence and correlates of Diabetes: Results from the National Health Interview Survey. Funding Agency: *NIDDK/ National Institutes of Health* (funded for $4000). Role: PI and Faculty Sponsor for Emily Miller (The student received $3500). Applied 03/2012 and awarded 05/2012.

8. **Khubchandani, J**. Preventing violence and trauma against women. Funding Agency: *Office of Women's Health, United States Department of Health & Human Services* (funded for $2000). Role: PI. Applied 11/2011 and awarded 01/2012

9. **Khubchandani, J.** Preventing violence against women. Funding Agency: *OPI Nail Polish, Inc*. (funded in kind $850). Role: PI, Applied 02/2012 and awarded 03/2012

10. **Khubchandani, J**. Adverse childhood experiences: association with biomarkers of endothelial dysfunction. Funding Agency: *University of Toledo Medical Center* (funded for $4500). Role: Co-Investigator. Applied 01/2011 and awarded 02/2011

11. **Khubchandani, J**. Predictors of high risk behaviors, poor health status, and unhealthy lifestyles in the youth of Indiana. Funding Agency: *Sponsored Programs Office, Ball State University (*funded for $8608). Role: PI. Applied 01/2011 and awarded 04/2011

12. **Khubchandani, J**. Adolescent dating violence prevention: high school principal's practices and perceptions. Funding Agency: *Sponsored Programs Office, Ball State University* (funded for $1500). Role: PI. Applied 10/2010 and awarded 11/2010

13. Reddy, R., Faruqui, T., **Khubchandani, J.,** & Price, J.H. Adolescent Sleep Counseling: Pediatrician's Perceptions and Practices. Funding Agency: *Mercy Health System, Toledo* ($3000). Role: Statistician. Awarded 02/2010

14. **Khubchandani, J**. Role of school counselors in preventing dating violence. Funding Agency: *Society for Public Health Education* (via US Centers for Disease Control & Prevention, $1500). Role: Principal Investigator. Awarded 10/2009

15. **Khubchandani, J.** (2009). Adolescent dating violence: School nurse's practices and perceptions. Funding Agency: *American School Health Association* ($1000). Role: Principal Investigator Awarded 6/2009

16. Jordan, T.R., & **Khubchandani, J.** Influence of worksite stress on nurse's health behaviors. Funding Agency: *PROMEDICA Health Systems, Toledo* ($900). Role: Statistician. Awarded 3/2009

Sponsorship of Student Grants

1. Tanner Barton (Honors College Student). Title: Prevalence and predictors of depression in American diabetics: A national assessment (2017) Funding Agency: Honors College Undergraduate Fellowship (funded $1000).
2. Jonathan Isbill (Honors College Student). Title: Obesity, lifestyle factors, violent behaviors in American youth: A national study of American teenagers (2017) Funding Agency: Honors College Undergraduate Fellowship (funded $1000).
3. Adam Null (Health Science Major). Title: Sleep problems in college students. (2016). Funding Agency: BSU Sponsored Programs Office (funded $300).
4. Maren Orchard (Honors College Student). Title: Preventing youth dating violence. (2016). Funding Agency: BSU Sponsored Programs (funded $300).
5. Jessica Bryzek (Honors College Student).Title: Epidemiology of Adolescent Dating Violence in US High Schools. (2016) Funding Agency: Honors College Undergraduate Fellowship (funded $1000).
6. Chelsea Smith* (Honors College Student). Title: Understanding the prevalence and predictors of mental health issues: Exploration of understudied local and global populations. (Fall 2014/Spring 2015). Funding Agency: Honors College Undergraduate Fellowship (funded $2160).
7. Emily Miller (Health Science Major).Title: Knowledge and perceptions of reproductive health and family planning among women in Tena, Ecuador. (2013). Funding Agency: BSU Sponsored Programs Office (funded $150).
8. Nicole Szoko (Honors College Student).Title: Technology and media use behavior: Association with health behaviors in college students. (2013). Funding Agency: BSU Sponsored Programs Office (funded $300).
9. Nicole Szoko (Honors College Student).Title: Technology and media use: Association with health behaviors in college students. (2012) Funding Agency: Honors College Undergraduate Fellowship (funded $1000).
10. Emily Miller (Health Science Major).Title: Child abuse in the United States: prevalence and preventive Strategies. (2012). Funding Agency: Honors College Undergraduate Fellowship (funded $2000).
11. Eryn Pulliam Cannon (Health Science Major). Title: Racial and ethnic disparities in mental health of youth. (2012). Funding Agency: NSF Louis Stokes Alliances for Minority Participation Program for summer research at BSU (funded $2500).
12. Chaztan Moore (Health Science Major).Title: Racial and ethnic disparities in mental health of youth. (2012). Funding Agency: NSF Louis Stokes Alliances for Minority Participation Program for summer research at BSU (funded $1250)
13. Alicia McClendon (Chemistry Major).Title: Racial/ethnic disparities in mental health of youth. (2012). Funding Agency: NSF Louis Stokes Alliances Minority Participation Program for summer research (funded $2500).

14. Jillian Hicks (Health Science Major).Title: Racial and ethnic disparities in mental health of youth. (2012). Funding Agency: NSF Louis Stokes Alliances for Minority Participation Program for summer research (funded $2500)
15. Emily Sullivan (Health Science Major).Title: Adolescent dating violence prevention. (2012). Funding Agency: NSF Louis Stokes Alliances for Minority Participation Program for summer research at BSU (funded for $2500)
16. Emily Sullivan (Health Science Major).Title: Disparities in prevalence and correlates of diabetes: Results from the National Health Interview Survey. (2012). Funding Agency: NIDDK/ NIH (funded $3500).
17. Emily Sullivan (Health Science Major). Title: High school principals' perceptions and practices on adolescent dating violence. (2011). Funding Agency: Honors College Undergraduate Fellowship (funded for $2000).
18. Crystal Long (Health Science Major).Title: Correlates of youth bullying in Argentina: Results from the global school-based student health survey. (2011).Funding Agency: NSF Louis Stokes Alliances for Minority Participation Program for summer research at BSU (funded for $1675).
19. Emily Sullivan (Health Science Major). Title: Psychosocial predictors for alcohol use in youth of Quito (Ecuador): results from the global school-based student health survey. (2011). Funding Agency: NSF Louis Stokes Alliances for Minority Participation Program for summer research at BSU (funded $2500).

Advanced Studies and Professional Improvement

2014 HITECH Certification

Health Care Compliance Strategies, Inc. & University of Toledo Medical Center

2014 Certified for HIPAA Compliance

Health Care Compliance Strategies, Inc. & University of Toledo Medical Center

2013 Certified Reviewer: Patient Centered Outcomes Research Institute (PCORI). The PCORI is a new federal initiative focusing on patient centeredness in research.

2012 Attended: Seminar on Program Funding and Grants Administration

National Institutes of Health Regional Seminar in Indianapolis

Invited by BSU Sponsored Programs Office to attend this training.

2012 Selected to Attend: Workshops on Grantsmanship

Sponsored Programs Office: Ball State University

2012 Certificate to Conduct Research with Human Subjects

Collaborative Institutional Training Institute, Ball State University

2006 Certified for Protecting Human Research Participants

National Institutes for Health Office of Extramural Research.

5. PROFESSIONAL SERVICE

University level: Ball State University, University of Toledo, and Western Kentucky University.

Ball State University (Department of Nutrition and Health Science)

2013-2014	Faculty Search Committee (Member)
2012–Present	Honors and Awards Committee (Member)
2012–Present	Courses and Curriculum Committee (Member)
2012–Present	Long Term Planning Committee (Chair)
2011–2012	Community Health Advisory Committee (Chair)
2010–Present	Long Term Planning Committee (Member)
2010–Present	Promotion and Tenure Committee (Member)
2010–2012	Community Health Advisory Committee (Member)

Ball State University (University Level Service)

2016-Present	Institutional Effectiveness Committee, Ball State University
2016- Present	University Promotion and Tenure Committee, Ball State University
2016-Present	Secretary, Faculty Council, Ball State University
2016- Present	College of Health Scholarship Committee
2015- Present	Council Member: Ball State University Faculty Council
2015- Present	Senate Member: Ball State University Senate
2013–Present	Judge on Panel: BSU Annual Student Research Symposium Sponsored Programs Office, Ball State University
2014–Present	Mentor: PhD Pathways Program BSU Office of Institutional Diversity
2010–2014	Ball State University Research Committee (Member and Proposal Reviewer)

Western Kentucky University

2006-2007	Graduate Representative: College of Health & Human Services Graduate Council of Western Kentucky University
2006-2007	Recruitment Committee Chair: Kentucky Public Health Association, Western Kentucky University Chapter
2005-2006	Historian and Webmaster: Kentucky Public Health Association Western Kentucky University Chapter
2005-2006	American Heart Association: Lobby Day Representative Kentucky House of Representatives

Local Level

2012- Present	Expert Speaker: Panel on Perspectives on Child Welfare around the Globe Multicultural Center (Ball State University).
2012- Present	Board of Directors Member: A Better Way, Muncie, IN (Nonprofit domestic violence and crisis management shelter).

National Level

2014- Present	Conference Abstract Reviewer American Public Health Association
2013- Present	Help Desk Team Member World Association of Medical Editors
2013- Present	Grant Proposal Reviewer Health Resources and Services Administration (USDHHS)
2013- Present	Pilot Tester for Health Education Specialist Practice Analysis National Commission on Health Education Credentialing
2012-Present	Abstracts Committee Co-Chair: SOPHE Annual Conferences Society for Public Health Education.
2012-Present	Planning Committee Member: SOPHE Annual Conferences Society for Public Health Education.
2012-Present	Faculty Advisor: BSU Student Chapter Eta Sigma Gamma
2012-Present	Sessions Moderator: SOPHE Annual Conferences Society for Public Health Education.
2011- Present	Vice-Chair of Violence and Injury Prevention Council American School Health Association
2012-2012	Workshop Panel Expert: Student Workshop and Mixer for Mentoring SOPHE 63rd Annual Conference 2012, Society for Public Health Education.
2011-Present	Publications Committee Member Society for Public Health Education.
2010-2010	Conference Abstract Reviewer: ASHA 84th Annual Conference 2010 American School Health Association
2010- Present	Conference Abstract Reviewer: SOPHE Annual Conferences Society for Public Health Education

Editorships and Review Panels (National and International)

Editorships

2015-	Editorial Board Member: Journal of Diabetes and Obesity
2015-	Reviewer Board: Global Journal of Obesity, Diabetes, and Metabolic Syndrome
2015-	Editorial Board Member: Depression and Anxiety
2015-	Editorial Board: Open Journal of Clinical and Medical Sciences
2015-	Editorial Board Member: Indian Journal of Child Health
2015-	Editorial Board Member: Journal of Family Medicine and Health Care
2014-	Advisory Board Member: Journal of Experimental and Integrative Medicine
2014-	Editorial Board Member: Annals of Forensic Research and Analysis
2013-	Editorial Board Member: Archives of Physiology
2012-	Advisor: Undergraduate Journal of Service Learning
2012-	Editorial Board Member: Global Journal of Medicine and Public Health
2012-2014	Editorial Board Member: The Health Educator
2012- 2014	Editorial Board Member: Chronicles of Young Scientists
2011-	Associate Editor: Health Promotion Practice
2011- 2015	Technical Editor: Journal of Family Medicine and Primary Care

Review Panels

2016-	Manuscript reviewer: International Journal of Adolescence and Youth
2016-	Manuscript reviewer: Journal of Family and Community Health
2015-	Manuscript reviewer: Health and Social Care in the Community
2015-	Manuscript reviewer: Childhood Obesity
2015-	Manuscript reviewer: Journal of Human Lactation
2015-	Manuscript reviewer: Journal of Pediatric Nursing
2014-	Manuscript reviewer: World Medical and Health Policy
2014-	Manuscript reviewer: American Journal of Health Behavior
2014-	Manuscript reviewer: Health Promotion International
2014-	Manuscript reviewer: Open Journal of Preventive Medicine
2013-	Manuscript reviewer: Journal of Women's Health
2013-	Manuscript reviewer: Journal of Health Care for Poor and Underserved
2011-	Manuscript reviewer: Journal of Family Medicine and Primary Care
2011-	Manuscript reviewer: Health Education and Behavior
2011-	Manuscript reviewer: Journal of Global Infectious Disease
2010-	Manuscript reviewer: Californian Journal of Health Promotion
2009-	Manuscript reviewer: Headache
2008-	Manuscript reviewer: Journal of School Health
2008-	Manuscript reviewer: Health Promotion Practice
2008-	Manuscript reviewer: Preventing Chronic Disease

Professional Affiliations

2016-	Association for Patient Experience
2012-	World Association of Medical Editors
2011-	Indiana Cancer Consortium
2011-	Indiana Coalition to Improve Adolescent Health
2009-	American School Health Association
2008-	Society for Public Health Education
2008-	Eta Sigma Gamma
2008- 2010	Society of Behavioral Medicine
2005-	Rajasthan State Medical Council, India
2004-	Delhi State and Madhya Pradesh State Medical Council, India
2005-2007	Kentucky Public Health Association
2006- 2007	Graduate Council, Western Kentucky University

Other Service Experience

2017	Attended the 'Crucial Conversations Training' sponsored by the Office of Provost at Ball State University
2011- Present	Advisor for Health Science Majors at Ball State University. Responsibilities include helping students schedule classes, keeping on track for graduation, and applying for jobs.

6. AWARDS, HONORS, SCHOLARSHIPS, FELLOWSHIPS

Recognitions

2016 *Diversity Related Research Appreciation Certificate*
Awarded by BSU Office of Institutional Diversity

2016 *Outstanding Student Research Presentation, BSU Student Symposium*
Acknowledgement by BSU Provost for Faculty Mentor

2012 *Office of BSU President*
Letter of Appreciation Received for Governor's Service Award.

2012 *India Empire, Non-Resident Indian and Person of Indian Origin Magazine*
Featured on the cover page for contributions by an Asian in United States.

2012 *Office of BSU President*
Letter of Appreciation Received for National Media Coverage of Research.

2012 *BSU Office of Sponsored Programs*
Spotlight on Faculty Research

2011- *BSU Office of Sponsored Programs and office of Provost for Research* Numerous letters of appreciation received for grant submission and funding.

2011 *Center for Scientific Review at the National Institutes of Health*
Nominated and Selected for Early Career Reviewer Program

Awards (includes awards, honors, and scholarships):

2017 Outstanding Diversity Researcher
Office of Institutional Diversity, Ball State University

2017 Dorothy Nyswander Open Society Award
Society for Public Health Education

2016 Diversity Associate Scholar
Office of Institutional Diversity, Ball State University

2015 Faculty Fellowship
BSU Center for International Development

2014 Outstanding Junior Faculty
Ball State University

2013 Diversity Associate Scholar
Office of Institutional Diversity, Ball State University

2012	Hero in Health Education Society for Public Health Education
2012	Governor's Award for Service Learning Office of Faith Based and Community Initiatives, Government of Indiana
2012	Hurley Goodall Distinguished Faculty Award Multicultural Center at Ball State University
2011-	Inaugural Faculty Fellowship BSU Global Health Institute
2011	Harold G Wolff Lecture Award American Headache Society
2010	Research Fellowship in Child and Adolescent Health US Centers for Disease Control and Society for Public Health Education
2009	Research Grant in School Health American School Health Association
2009	Biomedical Research Fellowship College of Medicine, Department of Neurology, University of Toledo
2009	Honorable Mention: Graduate Research Conference Graduate Student Association, University of Toledo
2008	Students First: Student Centered Employee of the Year Presidents' Commission on Student Centeredness, University of Toledo
2007-8	Research and Teaching Graduate Assistantship College of Health Sciences and Human Services, University of Toledo
2005-7	Research and Teaching Graduate Assistantship College of Health And Human Services, Western Kentucky University.
2005-7	International Student Scholarship for Graduate Studies College of Graduate Studies, Western Kentucky University
2007	Outstanding Graduate Student: Award For Excellence In Academics College of Health And Human Services, Western Kentucky University.

7. MASTERS THESIS and DOCTORAL DISSERTATION

University Employee's Perceptions of Stress: Association with Diet & Physical Activity on Campus.

(Published in American Journal of Health Studies). Defended in December 2007.

Adolescent Dating Violence: School Nurses' Practices and Perceptions.

(Published in Journal of School Health). Defended in August 2010.

8. COURSEWORK COMPLETED

(MPH and PhD- Major Courses)

Health Behavior
Health Care Policy
Drug Abuse Education
Issues in Public Health
Firearm Violence Prevention
Public Health Administration
Community Health Organization
Principles of Environmental Health
History Philosophy of Public Health
Health Education Program Planning
College Teaching in Health Education
Professional Issues in Health Education
Methods and Materials in Public Health
Independent Investigation/ HIV training
Education and Communication Techniques

(MPH and PhD- Minor Courses)

Applied Research in Public Health
Advanced Statistics
Vital and Medical Statistics
Applied Survey Research in Health
Research Design
Health Promotion Research
Categorical Data Analysis
Scientific Writing
Health Program Evaluation
Grant Writing in Health Sciences

Basic Epidemiology
Advanced Epidemiology
Public Health Epidemiology
Infectious Disease Epidemiology
Chronic Disease Epidemiology
Clinical Epidemiology
Cancer Epidemiology

(MD)

Anatomy
Physiology
Biochemistry
Pathology
Microbiology
Pharmacology
Community Medicine

Obstetrics/ Gynecology
Ophthalmology
Internal Medicine
Pediatrics
Psychiatry
Otorhinolaryngology
General Surgery/ Orthopedics

CURRICULUM VITAE

1. BIOGRAPHICAL INFORMATION

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2. EDUCATION

1973	University of Notre Dame, Notre Dame, IN, **B.S**. (Civil Engineering)
1974	Harvard University, Cambridge, MA, **S.M.** (Environmental Engineering)
1985	Stanford University, Stanford, CA, **Ph.D.** (Civil Engineering)

3. LICENSURE

Registered Professional Engineer, Missouri.

4. PROFESSIONAL POSITIONS

1974-1978	**Process Engineer**, Black and Veatch Engineers, Kansas City, MO.
1978-1985	**Research Assistant**, Department of Civil Engineering, Stanford University, Stanford, CA.
1985-1990	**Assistant Professor**, School of Public and Environmental Affairs, Indiana University, Bloomington, IN. Associate Member, Graduate School Faculty, 1988-1990.
1990-1996	**Assistant Professor**, Department of Environmental Health, School of Public Health and Community Medicine, University of Washington, Seattle, WA.
1990-present	Member, Graduate School Faculty, University of Washington.
1996-2006	**Associate Professor**, Department of Environmental and Occupational Health Sciences (previously Environmental Health), School of Public Health and Community Medicine, University of Washington, Seattle, WA.
1998-2010	**Program Director,** Environmental Health (previously Environmental Health Technology), Department of Environmental and Occupational Health Sciences (previously Environmental Health), School of Public Health and Community Medicine, University of Washington, Seattle, WA.
2006-present	**Professor**, Department of Environmental and Occupational Health Sciences, School of Public Health, University of Washington, Seattle, WA.
2013-present	Director, BS EH program, University of Washington, Seattle WA.

5. HONORS/AWARDS

Notre Dame Scholar
Public Health Service Traineeship (Harvard)
Research Assistantship (Stanford)
Chi Epsilon (Civil Engineering Honorary Society)

6. PROFESSIONAL SERVICE ACTIVITIES

National Academy of Sciences Committees

- Superfund Site Assessment and Remediation in the Coeur d'Alene River Basin, 2004-2005. (Washington DC, January 22-23; Coeur d'Alene and Wallace ID, April 13-16; Spokane WA and Coeur d'Alene ID, June 15-18; Woods Hole MA, September 1-2; Washington DC, November 11-12, 2004.)
- Committee to Evaluate the Potential Exposure to Agent Orange/TCDD Residue and Level of Risk of Adverse Health Effects for Aircrew of Post-Vietnam C-123 Aircraft. May-September, 2014.

International Committees and Workshops

- Aggregate Exposure Assessment Model Evaluation and Refinement Workshop [Session Chair], International Life Sciences Institute (ILSI), Baltimore, MD, October 19-21, 1999.
- Workshop on Innovative Exposure Assessment of Pesticide Uses for Appropriate Risk Assessment [Session Chair], Netherlands Organization for Applied Scientific Research (TNO), The Hague, September 20-22, 2000.
- International Conference on Occupational and Environmental Exposures of Skin to Chemicals: Science & Policy [Plenary presenter] CDC/NIOSH, Washington DC, September 8-11, 2002.
- Probabilistic Worker Exposure Assessment Workshop [Steering Committee], International Life Sciences Institute (ILSI), 2001-2003.
- ILSI Probabilistic Worker Exposure Assessment Workshop, Brussels, Belgium, November 10-11, 2003.
- Occupational and Environmental Exposures of Skin to Chemicals-2005, NIOSH/Karolinska Institute. Stockholm, Sweden, June 12-15, 2005.
- Global Net on Consumer Exposure Modeling – Workshops on Framework/Policy and Research/Science Major Issues. Workshop I: Dermal Transfer and Penetration Algorithms. Commission of the European Communities, Joint Research Centre, Intra/Verbania, Italy, June 20-21, 2005
- Occupational and Environmental Exposures of Skin to Chemicals-2009, [Scientific Committee], NIOSH/ Colorado School of Mines, Golden CO, 2007.
- Occupational and Environmental Exposures of Skin to Chemicals-2009, [Scientific Committee], NIOSH/BOHS, Edinburgh, 2009.
- Peer Review, Environmental Health Criteria Document: Dermal Exposure, World Health Organization, Hannover Germany, May 10-12, 2011.

U.S. Environmental Protection Agency: FIFRA/FQPA Science Advisory Panel

- Policy for Review of Monte Carlo Analyses for Dietary and Residential Exposure Scenarios and Post Application Exposure Guidelines: Series 875-Group B. Arlington VA, March 24-25, 1998.
- Issues Pertaining to the Assessment of Residential Exposure to Pesticides and Review of Aggregate Exposure Assessment Tool. Arlington VA, September 21-22, 1999.
- Case Study of the Cumulative Risk of 24 Organophosphate Pesticides; Cumulative Risk Assessment Method for Dietary (Food) Exposure; Cumulative Risk Assessment for Residential Exposure; Cumulative Risk Assessment for Drinking Water; Integrated Cumulative Risk Assessment Arlington VA, December 7-8, 2000.
- Preliminary Evaluation of the Non-dietary Hazard and Exposure to Children from Contact with Chromated Copper Arsenate (CCA)-treated Wood Playground Structures and CCA-contaminated Soil. Arlington VA, October 23-25, 2001.
- Stochastic Human Exposure and Dose Simulation Model (SHEDS): System Operation Review of a Scenario Specific Model (SHEDS-Wood) to Estimate Children's Exposure and Dose to Wood Preservatives from Treated Playsets and Residential Decks Using EPA/ORD's SHEDS Probabilistic Model. Arlington VA, August 30, 2002.
- Draft Preliminary Probabilistic Exposure and Risk Assessment for Children Who Contact CCA-treated Wood on Playsets and Decks and CCA-containing Soil Around These Structures. Arlington VA, December 3-5, 2003.
- Review of EPA/ORD/NERL's SHEDS-Multimedia Model, aggregate version 3. Arlington VA, August 14-15, 2007.
- Evaluation of Updated Standard Operating Procedures for Residential Exposure Assessment. Arlington VA, October 6–9, 2009.
- Scientific Issues related to SHEDS-Multimedia version 4, Peer consult on PBPK Modeling, and a SHEDS-PBPK Permethrin Study. Arlington VA, July 20-22, 2010.

U.S. Environmental Protection Agency: Human Studies Review Board *(Appointed to 3 year term, 2012)*

- Antimicrobial Exposure Assessment Task Force II (AEATF) completed study: "A Study for Measurement of Potential Dermal and Inhalation Exposure during Manual Pouring of a Liquid Containing an Antimicrobial." Arlington VA, January 17, 2013.
- Antimicrobial Exposure Assessment Task Force II (AEATF) protocol: "A Study for Measurement of Potential Dermal and Inhalation Exposure During Manual Pouring of Two Solid Formulations Containing an Antimicrobial." Arlington VA, April 8, 2014.
- Antimicrobial Exposure Assessment Task Force II (AEATF) protocol: "A Study for Measurement of Potential Dermal and Inhalation Exposure During Application of Latex Paint Containing an Antimicrobial Pesticide Product Using a Brush and Roller for Indoor Surface Painting." Arlington VA, April 8, 2014.
- Antimicrobial Exposure Assessment Task Force II (AEATF) protocol: "Determination of Removal Efficiency of 1,2-Benzisothiazol-3(2H)-one (BIT) from Hand Surfaces Using an Isopropyl Alcohol/Water Wipe and Wash Procedure." Arlington VA, April 8, 2014.
- U.S. Army protocol: "Laboratory Evaluation of Bite Protection From Repellent Impregnated Clothing for the United States Military." Arlington VA, April 9, 2014.

U.S. Environmental Protection Agency: Human Studies Review Board (cont'd.)

- A published report by *Paul et al* (1988) of an intentional exposure human study measuring the effects of small increases of dietary iodine on thyroid function. Arlington VA, June 11, 2014.
- A published report by Gardner et al (1988) of an intentional exposure human study measuring the effects of low dose oral iodide supplementation on thyroid function. Arlington VA, June 11, 2014.
- A published report by *Lemar et al* (1995) of an intentional exposure human study measuring the effects of chronic tetraglycine hydroperiodide water purification tablet use on thyroid function. Arlington VA, June 11, 2014.

Other Service to the U.S. Environmental Protection Agency

- National Human Exposure Assessment Survey Scientific Workshop, Arlington VA, July 23-24, 1992.
- Dermal Investigators Meeting, University of California at San Francisco, January 29, 1993.
- *Exposure Factors Handbook* Revision Workshop, Washington DC, July 21-22, 1993.
- National Human Exposure Assessment Survey (NHEXAS) Dermal Sampling Methods Workshop, Research Triangle Park NC, January 10-11, 1994.
- Dermal Investigators Meeting, University of California at San Francisco, February 28, 1994.
- Non Dietary and Dermal Exposure Factors Work Group [Group Leader], *Exposure Factors Handbook* Revision Peer Review, Washington DC, July 25-26, 1995.
- Dermal Workshop, Washington DC, August 27-28, 1997.Dermal and Non-dietary Ingestion Exposure Workshop, Research Triangle Park NC, September 17, 1998.
- Dermal Risk Assessment Interim Guidance: Supplemental Guidance to Risk Assessment Guidance for Superfund [Peer Reviewer], 1998.
- Children's Total Exposure to Persistent Pesticides and Other Persistent Pollutants (CTEPP) [External Reviewer], National Exposure Research Laboratory, Research Triangle Park NC, 1998-2002.
- Workshop on Issues Associated with Dermal Exposure and Uptake, Washington, DC, December 10-11, 1998.
- Lead Model Development: Probabilistic Risk Assessment and Biokinetic Modeling, Research Triangle Park, June 14-17, 1999.
- Workshop on Issues Associated with Selecting Age Groups for Assessing Exposure to Children, Washington, DC, July 26-27, 2000.
- Workshop on Micro/Macro Activity Data Needs to Improve Multi-media, Multi-pathway Exposure/Intake/dose Assessments, Research Triangle Park NC, May 17-18, 2001.
- Aggregate Residential Exposure Model Comparison Workshop, Research Triangle Park, NC, October 10-11, 2001.
- Peer Review: Human Health Risk Assessment, General Electric/Housatonic River Site - Rest of the River, USEPA/General Electric Co., Pittsfield MA, August 26, October 23, November 18-20, 2003.
- Colloquium: Soil-Dust Ingestion Rates and Mouthing Behavior for Children and Adults [Expert Panelist], National Center for Environmental Assessment, Arlington VA, May 24-25, 2005.
- Workshop for the Analysis of Children's Measurements Data [Session Leader]. National Exposure Research Laboratory, Research Triangle Park, NC, September 27-28, 2005.

Other National Workshops

- Workshop on Environmentally Acceptable Endpoints in Soil, Gas Research Institute, Washington DC, May 4-5, 1995.
- Workshop on Improving Exposure Analysis for DOE Sites [Working Group Coordinator], Department of Energy Laboratory Directors' Environmental and Occupational/Public Health Standards Steering Group, San Francisco CA, September 4-5, 1996.
- Workshop on Characterization of Residential Activity Patterns of Children and Their Use in Exposure Assessment, Outdoor Residential Exposure Task Force, Research Triangle Park NC, September 15-16 1998.
- Exposure Assessment Research Needs Workshop, Chemical Manufacturers' Association, Research Triangle Park NC, May 18-19, 1999.
- The Role of Human Exposure Assessment in the Prevention of Environmental Disease, NIEHS, Rockville MD, September 22-24, 1999.
- Biomonitoring Workshop, ILSI Health and Environmental Sciences Institute, Research Triangle Park NC, September 21-22, 2004.
- Dermal Toxicity Workshop, Defense Threat Reduction Agency, St. Petersburg Beach FL, January 11-14, 2010.

Service in National and International Professional Societies

International Society of Exposure Science (formerly International Society of Exposure Analysis)

- Councilor, 1997-2000.
- President-Elect, 2001-2002.
- President, 2002-2003.
- Past-President, 2003-2004.
- Chair, Bylaws Committee, 2003-2005, member 2005-present.
- Chair, Publications Committee, 2006-2008.

Society for Risk Analysis

- Member, Nominating Committee, 1994.
- Secretary/Chair-Elect, Exposure Assessment Specialty Group, 1994-1995.
- Chair, Exposure Assessment Specialty Group, 1995-1996.

Journal Peer Reviewer

AIHA Journal, Annals of Occupational Hygiene, Archives of Environmental Contamination and Toxicology, Environmental Health Perspectives, Environmental Professional, Environmental Science and Technology, Environmental Toxicology and Chemistry, Indoor Air, Integrated Environmental Assessment and Management, Journal of Agricultural and Food Chemistry, Journal of Exposure Science and Environmental Epidemiology, Regulatory Toxicology and Pharmacology, Risk Analysis, Science of the Total Environment, Skin Pharmacology and Physiology, Soil and Sediment Contamination

Memberships

American Chemical Society (ACS); American Water Works Association (AWWA) (Life Member); Association for the Environmental Health of Soils (AEHS); International Water Association (IWA); International Society of Exposure Science (ISES); Society for Risk Analysis (SRA); Water Environment Federation (WEF)

7. BIBLIOGRAPHY

Refereed Research Papers *(asterisk denotes precepted student)*

1. **Kissel JC**, PL McCarty and RL Street. Numerical simulation of mixed-culture biofilm. *J. Environmental Engineering*, 110(2): 393-411, 1984.
2. **Kissel JC.** Modeling mass transfer in biological wastewater treatment processes. *Water Science & Technology*, 18(1): 35-45, 1986.
3. **Kissel JC** and GM Robarge. Assessing the elimination of 2,3,7,8-TCDD from humans with a physiologically based pharmacokinetic model. *Chemosphere*, 17(10): 2017-2027, 1988.
4. **Kissel JC** and DR McAvoy. Reevaluation of the dermal bioavailability of 2,3,7,8-TCDD in soil. *Hazardous Waste & Hazardous Materials*, 6(3): 231-240, 1989.
5. **Kissel JC.** Proposed co-firing of municipal refuse and PCBs: A second look at the Bloomington, Indiana consent decree. *Environmental Professional*, 12: 60-66, 1990.
6. Grotenhuis JTC, **JC Kissel**, CM Plugge, AJM Stams, and AJB Zehnder. Role of substrate concentration in particle size distribution of methanogenic granular sludge in UASB reactors. *Water Research*, 25(1):21-27, 1991.
7. **Kissel JC**, CL Henry and RB Harrison, Potential Emissions of Volatile and Odorous Organic Compounds from Municipal Solid Waste Composting Facilities. *Biomass & Bioenergy*, 3(3/4):181-194, 1992.
8. **Kissel JC.** Potential Impact of Deliberately Introduced Ozone on Indoor Air Quality. *J. Exposure Analysis & Environmental Epidemiology*, 3(2): 155-164, 1993.
9. Ragle N*, **JC Kissel**, JE Ongerth and FB DeWalle. Composition and Variability of Leachate from Recent and Aged Areas within a Municipal Landfill. *Water Environment Research*, 67(2):238-243, 1995.
10. Lee RC* and **JC Kissel**. Probabilistic Prediction of Exposures to Arsenic-Contaminated Residential Soil. *Environmental Geochemistry & Health*, 17:159-168, 1995.
11. **Kissel J**, K Richter and R Fenske. Field Measurement of Dermal Soil Loading Attributable to Various Activities: Implications for Exposure Assessment. *Risk Analysis* 16(1):115-125, 1996.
12. **Kissel J**, K Richter and R Fenske. Investigation of Factors Affecting Soil Adherence to Skin Using a Hand-Press Technique. *Bulletin of Environmental Contamination & Toxicology*, 56(5):722-728, 1996.
13. Duff R* and **J Kissel**. Effect of Soil Loading on Dermal Absorption Efficiency from Contaminated Soils. *J. Toxicology & Environmental Health,* 48(1):93-106, 1996.
14. Johnson J* and **J Kissel**. Prevalence of Dermal Pathway Dominance in Risk Assessment of Contaminated Soils: A Survey of Superfund Risk Assessments, 1989-1992. *Human & Ecological Risk Assessment*, 2(2):356-365, 1996.
15. Shirai J* and **J Kissel**. Uncertainty in Estimated Half-Lives of PCBs in Humans: Impact on Exposure Assessment. *Science of the Total Environment,* 187:199-210, 1996.
16. Holmes K*, **J Kissel**, and K Richter. Investigation of the Influence of Oil on Soil Adherence to Skin. *J. Soil Contamination*, 5(4):301-308, 1996.
17. **Kissel J**, J. Shirai, K Richter and R Fenske. Empirical Investigation of Hand-to-mouth Transfer of Soil. *Bulletin of Environmental Contamination & Toxicology*, 60:379-386, 1998.

Refereed Research Papers (cont'd.) *(asterisk denotes precepted M.S. student)*

18. **Kissel J**, J Shirai, K Richter, and R Fenske. Investigation of Dermal Contact with Soil in Controlled Trials. *J. Soil Contamination,* 7(6):737-752, 1998.
19. Holmes K*, J Shirai, K Richter and **J Kissel**. Field Measurement of Dermal Soil Loadings in Occupational and Recreational Activities. *Environmental Research*, 80:148-157, 1999.
20. Garlock T*, J Shirai and **J Kissel.** Adult Responses to a Survey of Soil Contact Related Behaviors. *J. Exposure Analysis & Environmental Epidemiology*, 9(2):134-142, 1999.
21. **Kissel J** and R Fenske. Improved Estimation of Dermal Pesticide Dose to Agricultural Workers upon Reentry. *Applied Occupational and Environmental Hygiene*, 15(3):284-290, 2000.
22. Fenske R**, J Kissel**, C Lu, D Kalman, N Simcox, E Allen, M Keifer. Biologically based pesticide dose estimates for children in an agricultural community. *Environmental Health Perspectives*, 108:515-520, 2000.
23. Wong EY*, Shirai JH, Garlock TJ, **Kissel JC**. Survey of Selected Activities Relevant to Exposures to Soils. *Bulletin Environmental Contamination & Toxicology,* 65(4):443-450, 2000.
24. Wong EY*, Shirai JH, Garlock TJ, **Kissel JC**. Adult Proxy Responses to a Survey of Children's Dermal Soil Contact Activities. *J Exposure Analysis & Environmental Epidemiology*, 10:509-517, 2000.
25. Fenske R, C Lu, N Simcox, C Loewenherz, J Touchstone, T Moate, E Allen, **J Kissel**. Strategies for Assessing Children's Organophosphate Pesticide Exposures in Agricultural Communities. *J Exposure Analysis & Environmental Epidemiology*, 10:662-671, 2000.
26. Curl CL, Fenske RA, **Kissel JC**, Shirai JH, Moate TF, Griffith W, Coronado G, Thompson B. Evaluation of take-home organophosphorus pesticide exposure among agricultural workers and their children. *Environ Health Perspect* 110(12):A787-92, 2002.
27. Thompson B, Coronado GD, Grossman JE, Puschel K, Solomon CC, Islas I, Curl CL, Shirai JH, **Kissel JC**, Fenske RA. Pesticide take-home pathway among children of agricultural workers: study design, methods, and baseline findings. *J Occup Environ Med* 45:42-53, 2003.
28. Fenske RA, Curl CL, **Kissel JC** 2003. The effect of the 14-day agricultural restricted entry interval on azinphosmethyl exposures in a group of apple thinners in Washington State. *Reg Toxicol Pharm* 38(1):91-97.
29. Doran EM, Fenske RA, **Kissel JC**, Curl CL, Simcox NJ. 2003. Impact of Dermal Absorption Factors in Occupational Exposure Assessment: Comparison of Two Models for Agricultural Reentry Workers Exposed to Azinphosmethyl *Appl Occup Environ Hyg* 18(9):669-677.
30. Wolz S, Fenske RA, Simcox NJ, Palcisko GJ, **Kissel JC**. 2003. Residential arsenic and lead levels in an agricultural community with a history of lead arsenate use. *Environ Research* 93(3):293-300.
31. Lu C, Kedan G, Fisker-Andersen J, **Kissel JC,** Fenske RA. 2004. Multi-pathway organophosphorus pesticide exposures of pre-school children living in agricultural and non-agricultural communities. *Environ Research* 96(3):283-289.
32 **Kissel JC**, Curl CL, Kedan G, Lu CA, Griffith W, Barr DB, Needham LL, Fenske RA. 2005. Comparison of organophosphorus pesticide metabolite levels in single and multiple daily urine samples collected from pre-school children in Washington State. *J Expos Assess Environ Epid.* 15(2):164-171.
33. Shoaf MB* Shirai JH, Kedan G, Schaum J, **Kissel JC**. 2005. Adult Dermal Sediment Loads Following Clam Digging in Tide Flats, *Soil and Sediment Contam.* 14:463-470.
34. Shoaf MB* Shirai JH, Kedan G, Schaum J, **Kissel JC**. 2005. Child Dermal Sediment Loads Following Play in a Tide Flat, *J Expos Anal Environ Epid*. 15:407-412.

Refereed Research Papers (cont'd.) *(asterisk denotes precepted M.S. student)*

35. Fenske RA, Lu C, Curl CL, Shirai JH, **Kissel JC.** 2005. Biological monitoring to characterize organophosphorus pesticide exposure among children and workers: an analysis of recent studies in Washington State, *Environ Health Perspec* 113(11):1651-1657.
36. Thompson B, Coronado G, Vigoren E, Griffith W, Fenske RA, **Kissel JC**, Shirai JH, Faustman E *Para Niños Saludables*: 2008. A Community Intervention Trial to Reduce Organophosphate Pesticide Exposure in Children of Farmworkers. *Environ Health Perspec*. 116(5):687-94.
37. Norman AM*, **Kissel JC**, Shirai JH, Smith JA, Bunge AL. 2008. Effect of PBPK model form on interpretation of in vivo human aqueous dermal exposure trials. *Toxicol Sci*. 104(1):210-217.
38. Spalt EW*, **JC Kissel**, JH Shirai, AL Bunge. 2009. Dermal absorption of environmental contaminants from soil and sediment: A critical review. *J Expos Sci Environ Epid* 19(2):119-148.
39. **Kissel JC.** 2011. The mismeasure of dermal absorption. *J Expos Sci Environ Epid*. 21(3):302-9.
40. Bergstrom CM*, Shirai JH, **Kissel JC**. 2011. Particle size distributions, size concentration relationships, and adherence to hands of selected geologic media derived from mining, smelting, and quarrying activities. *Sci Tot Environ* 409(20):4247-4256.
41. Frasch HF, Dotson G, Bunge A, Chen C-P, Cherrie J, Kasting G, **Kissel J**, Sahmel J, Semple S, Wilkinson S. 2014. Analysis of Finite Dose Dermal Absorption Data: Implications for Dermal Exposure Assessment. *J Expos Sci Environ Epid* 24(1):65-73.

Letters to the Editor in Refereed Journals

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Kissel JC. 2005. Arsenic on the hands of children. *Environ Health Perspec*. 113(6):A364.

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Committee on Superfund Site Assessment and Remediation in the Coeur d'Alene River Basin (DJ Tollerud, chair), Superfund and Mining Megasites - Lessons from the Coeur d'Alene River Basin, National Academies Press, 2005.

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Kissel JC. Predicting the Impact of Hydrocarbon Co-contamination on the Dermal Bioavailability of Organic Xenobiotics in Soils. Chapter 39. Hydrocarbon Contaminated Soils, Vol. 1., E. Calabrese and P. Kostecki, eds. Lewis Publishers, Chelsea, MI, 1991.

Kissel JC, Spalt EW, Shirai JH, Bunge AL "Dermal Absorption of Chemical Contaminants from Soil" Chapter 34. Dermal Absorption and Toxicity Assessment, 2nd ed. Roberts, MS and KA Walters, eds) Marcel Dekker Inc, New York, 2007.

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The Necessity of Observing Children's Exposure to Contaminants in Their Real-World Environmental Settings M.Lebowitz, P. Lioy, T. McKone, J. Spengler, J. Adgate, D. Bennett, R. Fenske, N. Freeman, J. Graham, J. Kissel, R. Neutra, W. Al-Delaimy, and C. Weisel, December 6, 2008.

Other Publications

McCarty PL, **JC Kissel**, T Everhart, R Cooper and C Leong. Mutagenic Activity and Chemical Characterization for the Palo Alto Wastewater Reclamation and Groundwater Injection Facility. EPA Technical Report, Grant No. R-804431, November 1980.

Kissel JC. Numerical Simulation of Mixed-Culture Biofilms. PhD Thesis, Stanford University, 1985. University Microfilms, Ann Arbor MI.

Kissel JC, JTC Grotenhuis and AJB Zehnder. Computer Simulation of Granule Growth in an Upflow Anaerobic Sludge Blanket Reactor (UASBR). Acta Volume, the Fifth International Symposium on Anaerobic Digestion. Monduzzi Editore, Bologna, Italy, 1988.

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Kissel JC and DR McAvoy. Estimating Dermal Exposure from Contaminated Soil Using the Fugacity Approach. Superfund '88: Proceedings of the Ninth National Conference. Hazardous Materials Control Research Institute, Silver Spring MD, 1988.

Kissel JC. Evaluation of Relative Magnitude of Human Exposure by Various Routes in a Community with Multiple PCB-Contaminated Sites. Superfund '89: Proceedings of the Tenth National Conference. Hazardous Materials Control Research Institute, Silver Spring MD, 1989.

Kissel JC. Mass Transfer in Soil on Skin. Hazardous Materials Control/Superfund '91: Proceedings of the 12th Annual Conference of the Hazardous Materials Control Research Institute, Silver Spring MD, 1991.

Good D, **JC Kissel**, D Mullins, R O'Leary, R Mathias and C Peake. The Solid Waste Crisis. Chapter A7, The Municipal Yearbook, International City Manager's Association. Washington DC. 1991.

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Other Publications (cont'd.)

Shirai JH and **JC Kissel**. Variability in Estimated Physiological Half-Lives of PCBs in Humans: Impact on Exposure Assessment. (abstract) *The International Toxicologist*, 7(1):103-PD-10, July 1995.

Kissel JC and RM Duff. Impact of Soil Loading on Estimation of Efficiency of Dermal Absorption of Organic Contaminants from Soils. (abstract) *The International Toxicologist*, 7(1):21-P-2, July 1995.

Kissel JC, M Samadpour, and J Ongerth. Comparison of Estimated Risk of *Giardia* and *Cryptosporidium* in Drinking Water with Observations in the Pacific Northwest. Proceedings of the 1996 Annual Conference of the American Water Works Association, vol. C, pp. 751-757, AWWA, 1996.

Doran E, **J Kissel**, and R Fenske. Modeling Occupational Exposure to Azinphosmethyl Residues. (abstract) *The Toxicologist*, 42(1-S):761, March 1998.

Kissel, JC, A Wawrukiewicz, S Bartell, and J Shirai. Evaluation of the Predictive Capability of Models of Exposure to Soil Contaminants. Contaminated Soil '98: Proceedings of the Sixth International FZK/TNO Conference on Contaminated Soil, 17-21 May 1998, Edinburgh, UK, May 1998; pp. 1049-1050; Thomas Telford, London, 1998.

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Fenske R, **J Kissel**, C Lu, N Simcox, D Knutson, D Koch. Biologically Based Analysis of Organophosphate Pesticide Exposures in Children in Agricultural Communities. (abstract) *Epidemiology* 10(4) supplement, p S110, July1999.

Tulve NS, J Driver, PE Egeghy, J Evans, RC Fortmann, **J Kissel**, N McMillan, LJ Melnyk, M Morgan, J Starr, DM Stout, M Strynar. The U.S. EPA National Exposure Research Laboratory's (NERL's) Workshop on the Analysis of Children's Measurement Data: Workshop Summary Report. EPA 600/R-06/026, 2006.

Meschke JS, **Kissel JC**. Quantitative Assessment of Acceptable Levels of Virus Discharge from Cruise Ships in Puget Sound. Report to the Office of Shellfish and Water Protection, Washington State Department of Health, November 13, 2007. Included as appendix in the Washington Department of Health Report to the Legislature "Assessment of Potential Health Impacts of Virus Discharge from Cruise Ships to Shellfish Growing Areas in Puget Sound". November 2007. http://www.doh.wa.gov/ehp/sf/Pubs/cruise-ship-report.pdf

8. PATENTS

9. RESEARCH FUNDING HISTORY

Currently Funded Research

Investigation of the Contribution of Surface Residues to Aggregate Indoor Nondietary SVOC Exposure, Oct 2012-Jun 2015, UW DEOHS Pilot Project, **J Kissel, P.I.;** $80,438 DC (5% FTE).

Research Proposal Currently under Review

Assessing Public Health Risk from Beach Exposure to Oil Spill Contaminants. SM Roberts, U FL (PI); AL Bunge, CO School of Mines; **JC Kissel,** U WA; EB Overton, LSU; $3,675,000 (TC), Jan 2015-Dec 2017.

Prior Funded Research

Modeling Microbial Granule Growth in an Upflow Anaerobic Reactor. 198,000 Belgian francs. May 1986-May 1987. NATO, Grant No. 064/86. AJB Zehnder, Dept. of Microbiology, Agricultural University, Wageningen, The Netherlands, PI; JC Kissel, Co-Investigator.

Verification of model prediction of enhanced fecal elimination of lipophilic xenobiotics due to consumption of non-digestible oil. $3,580. May 1988-May 1990. Multi-disciplinary Ventures Fund, Indiana U. **JC Kissel, PI**

Preparation and analysis of a survey of local governmental solid and hazardous waste management practice. $1,000. July 1989-June 1990. International City Manager's Association. D Good, JC Kissel, D Mullins, and R O'Leary, School of Public and Environmmental Affairs, Indiana U., Co-Investigators.

Dermal Bioavailability of Organic Xenobiotics in Soils. $5,400. October 1990-September 1991. Industrial Hygiene Research Fund, Dept. of Environ. Health, U. of Washington. **JC Kissel, PI.**

Assessing the Toxicity and Uptake of Trace Metals by Plants Grown in Compost-Amended Soil. $153,939 (total costs). July 1991-December 1994. Solid Waste Composting Council. C Henry and R Harrison, College of Forest Resources, U. of Washington, PI's. JC Kissel, Co-investigator.

Dermal Soil Exposure. $268,924 (total costs). October 1991-March 1993. US EPA OHEA. **JC Kissel, PI** (25% FTE); R Fenske, Co-PI.

Dermal Soil Exposure. Extension & Supplementation. $70,000 (total costs). August 1993-June 1994. USEPA OHEA. **JC Kissel, PI** (16% FTE).

Consortium for Risk Evaluation with Stakeholder Participation (CRESP). $993,113 (total costs). April 1995-September 1995. US DOE. B Goldstein, EOHSI, PI; JC Kissel, Exposure Task Group Co-leader (5% FTE).

Dermal Bioavailability of PCBs in Sediments. $23,910 (total costs). October 1996-January 1997. The Boeing Corporation. **JC Kissel, PI** (5% FTE).

Consortium for Risk Evaluation with Stakeholder Participation (CRESP). $5,381,341 (UW direct costs). September 1995-March 1999. US DOE. E Faustman, UW PI; JC Kissel, UW Exposure Assessment Task Group Leader.

Total Organophosphorus Pesticide Exposure among Children in Urban and Rural Environments. $600,145 (total costs). October 1996-September 1999. US EPA Office of Research and Development. R Fenske, U. of Washington, PI; JC Kissel, Co-investigator (10% FTE).

Dermal Adherence of Soil and Dust. $298,858 (total costs). March 1995-January 2000. USEPA Office of Health and Environmental Assessment. **JC Kissel, PI** (20% FTE).

Center for Child Environmental Health Risks Research. $ 6,625,256 (total costs). August 1998-November 2004. US EPA/NIEHS. E Faustman, U. of Washington, PI JC Kissel, Exposure Assessment Core Director and Co-investigator (15% FTE).

Children's Exposure to Lead and Arsenic in Orchard Soils. c. $40,000 (direct costs). October 1998-September 2000. Pacific Northwest Agricultural Safety and Health Center (NIOSH/CDC). **JC Kissel, PI** (10% FTE)**.**

Prior Funded Research (cont'd.)

Consortium for Risk Evaluation and Stakeholder Participation (CRESP). $2,227,003 (UW direct costs). March 1999 - March 2000. US Department of Energy. E Faustman, U. of Washington, PI; JC Kissel, UW Exposure Assessment Task Group Leader, (c. 10% FTE).

Methods, Models and Factors Relating to Dermal Route of Exposure. $ 49,666 (total costs). February 4, 2000-February 3, 2001. US EPA NCEA. **JC Kissel, PI** (20% FTE).*)*

Farm Exposures to Deposited Arsenic and Lead on Vashon Island. c. $20,000 (direct costs). October 2000-September 2001. Pacific Northwest Agricultural Safety and Health Center (NIOSH/CDC). **JC Kissel, PI** (10% FTE)**.**

Exploratory Study to Investigate Distribution of Pesticide Residue on Skin Following Contact with a Contaminated Surface. $99,251 (total costs). January 2000-December 2000 (extended to September 2001). US EPA NERL. **JC Kissel, PI** (29% FTE)**.**

Optical Assessment of Dermal Exposure and Assessment. $684,000 (total costs). April 1, 2000-March 31, 2003. NIOSH/NIEHS. R Fenske, PI; JC Kissel, Co-investigator. (10% FTE)**.**

Characterization of Human Dermal Contact with Sediments. $99,139 (total costs). October 1, 2002-October 4, 2004. USEPA ORD/NCEA, **JC Kissel P.I.** (15% FTE).

Review and Evaluation of Models of Dermal Absorption from Contaminated Water and Soil. $376,675 (total costs). September 2001 – August 2006). USEPA ORD/NCEA, **JC Kissel, P.I.** (25% FTE).

Norovirus Discharge in Puget Sound: Impacts of Passenger Ship Wastewater on Shellfish. $56,900 (total costs). September 2005 – August 2006. Washington State Department of Health, JS Meschke, PI; **JC Kissel, Co-investigator** (10% FTE).

Report on the in vivo absorption of DEET. $35,870 total costs. July 5, 2006-December 31, 2006, USEPA ORD/NCEA, Contract # EP06H001996, **JC Kissel, P.I.** (10% FTE).

Investigation of Dermal Exposure to Geologic Material. $60,318. September 1, 2006-June 30, 2007. Washington Department of Ecology. **JC Kissel, P.I**. (10% FTE).

Geologic Media Adherence. $31,570 (total costs). January 1-June 30, 2008. Iron Mountain Quarry, Inc. **JC Kissel, P.I.** (10% FTE).

Concordance Analysis of Probabilistic Aggregate Exposure Assessment and Biomarkers of Exposure. $449,192 (total costs). August 1, 2004 – July 31, 2008, USEPA ORD STAR Program, **JC Kissel, P.I.** (20% FTE).

Investigation of Dermal Adherence of Geologic Materials. $29,933 (total costs). December 1, 2008-June 30, 2009. WA Department of Ecology (Interagency Agreement) C0900158; **JC Kissel, PI.**

Mass Balance Study of Pentachlorophenol and 2,4-Dichlorophenoxyacetic Acid Exposures in CTEPP. $30,000 total costs. December 1, 2008-November 30, 2009. US EPA NERL (Contract) EP09D000029; **JC Kissel, PI.**

Investigation of the apparent discrepancy between observed cholinesterase depression among pesticide handlers in Washington and regulatory estimates of exposure. $21,162 (direct costs). September 30, 2008-September 29, 2010. (Pilot Project) Pacific Northwest Center for Agricultural Safety and Health (NIOSH/CDC), **JC Kissel, P.I.**

Low load dermal absorption. $25,424 total costs (pilot project); July 1, 2009 – June 30, 2011, UW DEOHS Biennium Fund, **JC Kissel, P.I**.

Analysis of perfluorinated compounds in Puget Sound shellfish. $20,294 (pilot project); July 1, 2009 – June 30, 2011, UW DEOHS Biennium Fund, **JC Kissel, P.I**.

Mechanistically-based *In Silico* Estimation of Dermal Absorption in the Workplace. $1,954,729 (total costs). NIOSH 2R01OH007529-05A1, G. Kasting, U. of Cincinnati, P.I. **JC Kissel, subcontract P.I.;** August 1, 2007-July 31, 2013; $565,061 (20% FTE).

Prior Funded Research (cont'd.)

PAH Interactions with Soil and Effects on Bioaccessibility and Bioavailability to Humans. SERDP ER 1743, Y Lowney, Exponent, P.I.; Jan 2011-Apr 2014, $109,000 (subcontract TC) (8.3% FTE).

Development of preliminary quantitative microbial risk assessment (QMRA) models for improvement of food safety in the production of apples, pears, and cherries. Oct 2012-Jun 2014, UW DEOHS Pilot Project, S Meschke, U WA, P.I.; $89,853 DC (5% FTE).

10. PUBLIC HEALTH PRACTICE

11. CONFERENCES AND SYMPOSIUMS

Conference Organization

Technical Program Committee, Annual Meeting of the ISEA, New Orleans LA, December 1996 (Joint with SRA).

Organizing Committee, Joint Annual Meeting of the ISEA/ISEE, Vancouver BC, August, 2002.

Technical Program Committee, Joint Annual Meeting of the ISEA/ISEE, Vancouver BC, August, 2002.

Program Committee, Occupational and Environmental Exposures of Skin to Chemicals-2007, NIOSH/Colorado School of Mines, Golden CO, 2007.

Scientific Committee, Occupational and Environmental Exposures of Skin to Chemicals-2009, NIOSH/BOHS, Edinburgh, 2009.

Co-chair, Annual meeting of the International Society of Exposure Science, Seattle, October 2012.

Technical Organizing Committee, Annual Meeting of the ISES, Cincinnati OH, October, 2014.

Session organizer and chair, Dermal Exposure, Annual Meeting of the SRA, Savannah GA, December 1993.

Session organizer and chair, Dermal Exposure, Annual Meeting of the SRA, Baltimore MD, December 1994.

Session organizer and chair, Dermal Exposure I & II, Joint Annual Meeting of the SRA and ISEA, New Orleans LA, December 1996.

Session organizer and chair, Pathways of Exposure to Contaminants in Surface Soils, AMSIE '97, AAAS, Seattle WA, February 1997.

Session co-organizer and co-chair, Dermal Exposure, Annual Meeting of the SRA, Phoenix AZ, December 1998.

Session co-organizer and co-chair, Pesticide Exposure and Children's Health, Joint Annual Meeting of ISEA/ISEE, Athens, September, 1999.

Session co-organizer and co-chair, Children's Exposures - Pesticides, Annual Meeting of ISEA, Monterey, CA, October, 2000.

Session co-organizer and co-chair, Pesticide Exposure – Dermal Pathway Issues, Annual Meeting of the SRA, Washington DC, December, 2000.

Session co-organizer and co-chair, Human Exposure to Contaminants in Soil or Sediment, Annual Meeting of ISEA, Charleston, SC, November, 2001.

Panel organizer and chair, Does Exposure Analysis Have a Future as an Independent Scientific Discipline? ISEA annual meeting, Tucson, October, 2005.

Conference Organization (cont'd.)

Session organizer and chair, Advances in Assessment of Dermal Exposure and Absorption, Annual Meeting of the ISES, Seattle WA, October 2012.
Session organizer and chair, Recent Findings in Assessment of Dermal Exposure and Absorption, Annual Meeting of the ISES, Cincinnati OH, October 2014.

Session chair, Intermittent Exposures, Annual Meeting of the SRA, Washington DC, December 1997.
Session co-chair, Surface Transfers and Dusts, Joint Annual Meeting of ISEA and ISEE, Vancouver, BC, August 2002.
Session co-chair, Assessing Dermal Exposure, Annual Meeting of ISEA, Philadelphia, PA, October 2004.
Session co-chair, Dermal Exposure and Effects, Joint Annual Meeting of ISES and ISEE, Pasadena, CA, October 2008.
Session chair, Occupational Exposure Assessment, Annual Meeting of ISES, Minneapolis MN, November 2009.
Session chair, Indoor Air & Products: Exposure & Risks, Society for Risk Analysis, San Francisco, December 2012.

Conference Platform Papers *(underline denotes presenter)*

Kissel JC. Modelling Mass Transfer in Biological Wastewater Treatment Processes. IAWPRC Specialized Seminar on Modelling of Biological Wastewater Treatment, Copenhagen; August 1985.
Kissel JC, JTC Grotenhuis, AJB Zehnder. Modeling Granule Growth in a Propionate-Fed UASBR. Granular Anaerobic Sludge-Microbiology and Technology (GASMAT), Lunteren, the Netherlands; October 1987.
Kissel JC, DR McAvoy. Estimating Dermal Exposure from Contaminated Soil Using the Fugacity Approach. Superfund '88, HMCRI, Washington, DC; November 1988.
Kissel JC. Evaluation of Relative Magnitude of Human Exposure by Various Routes in a Community with Multiple PCB-Contaminated Sites. Superfund '89, HMCRI, Washington, DC; November, 1989.
Kissel JC, KJ Williamson. Simulation of Multiple Zone Formation in a Uniquely Structured Biofilm Reactor. National Conference on Environmental Engineering, ASCE, Washington, DC, July 1990.
Kissel JC. Predicting the Impact of Hydrocarbon Co-contamination on the Dermal Bioavailability of Xenobiotics in Soils. Fifth National Conference on Hydrocarbon Contaminated Soils, University of Massachusetts, Amherst, MA; September 1990.
Kissel JC. Comparison of Human PCB Exposures Associated with Occupation, Waste Sites, and Background Sources: A Case Study. Annual Meeting of the SRA, New Orleans LA, October 1990.
Kissel JC. Evidence for Partial Mitigation of Exposure to Lipophilic Xenobiotics in Breast Milk Due to Elevated Excretion Rates in Infants. Annual Meeting of the SRA, New Orleans LA, October 1990.
Kissel JC. Mass Transfer in Soil on Skin. Hazardous Materials Control '91, 12th Annual Conference of the Hazardous Materials Control Research Institute, Washington DC, December, 1991.

Conference Platform Papers (cont'd.) *(underline denotes presenter)*

Lee RC, **JC Kissel.** Comparison of Protocols for Determination of Risk-Based Soil Quality Criteria. Annual Meeting of the Pacific Northwest/International Section, Air & Waste Management Association, Bellevue WA, November, 1992.

Kissel JC, K Richter, R Duff, R Fenske. Investigation of Dermal Exposure to Soils. Annual Meeting of the SRA, San Diego CA, December, 1992.

Lee RC, **JC Kissel**. Prediction of Residential Exposure to Arsenic Contaminated Soil Using Monte Carlo Simulation: A Comparison to Biomonitoring Data. Annual Meeting of the SRA, Savannah GA, December 1993.

Kissel JC, R Duff, K Richter. Results of Field Measurement of Dermal Soil Loadings and Laboratory Investigation of the Effect of Soil Loading on *in Vitro* Dermal Absorption of Organic Xenobiotics from Soil. Annual Meeting of the SRA, Savannah GA, December 1993.

Johnson JE, **JC Kissel**. Dermal Exposure to Soil: A Comparison of Parameters used in Superfund Risk Assessments with Available Experimental Measurements. Annual Meeting of the SRA, Baltimore MD, December 1994.

Shirai JH, **JC Kissel**. Effect of Variability in Estimated Half-Lives of PCBs in Humans on Exposure Assessment. International Congress on Hazardous Waste: Human Health and Ecological Effects, ATSDR, Atlanta, June 1995.

Kissel J, K. Richter, J. Shirai, K. Holmes. Progress in Characterization of Adherence of Soil to Skin. Annual Meeting of the SRA; Honolulu, December 1995.

Fenske RA, **JC Kissel**. Dose Assessment for Children of Agricultural Families Exposed to Pesticides in Housedust and Soil. Annual Meeting of the SRA; Honolulu, December 1995.

Kissel J, M Samadpour, J Ongerth. Lack of Correspondence between Current Estimates of Risk of *Giardia* and *Cryptosporidium* in Drinking Water and Observations in the Pacific Northwest. Annual Meeting of the American Water Works Association, Toronto, June 1996.

Kissel J, T Garlock, K Holmes. Incorporation of Behavioral Data in Assessment of Dermal Exposure to Soils. Joint Annual Meeting of the SRA and ISEA, New Orleans LA, December 1996.

Kissel J, S Bartell, A Wawrukiewicz. Comparison of Soil Ingestion Rates Derived from Dose Reconstruction at Contaminated Sites with Estimates Obtained in Tracer Mass Balance Studies. Joint Annual Meeting of the SRA and ISEA, New Orleans LA, December 1996.

Kissel J, T Garlock, and K Holmes. Incorporation of Behavioral Data in Assessment of Dermal Exposure to Soils. Regional Meeting of the Pacific Northwest/International Section, AWMA, Seattle WA, December 1996.

Kissel J, A Wawrukievicz. Comparison of predicted exposures to soil contaminants with results of biomonitoring at selected sites. AMSIE '97 (AAAS), Seattle WA, February 1997.

Bunge A, **J Kissel**. Exposure to Soil Contaminants via Dermal Contact. AMSIE '97 (AAAS), Seattle WA, February 1997.

Garlock T, **JC Kissel**. Comparison of National and Regional Results Obtained Using a Telephone Survey Designed to Elicit Information on Dermal Contact with Soil. Annual Meeting of the International Society of Exposure Analysis, Research Triangle Park NC, November, 1997.

Kissel JC, T Garlock. Evaluation of a Revised Protocol for Assessment of Dermal Exposure to Soil Contaminants. Annual Meeting of the SRA, Washington DC, December, 1997.

Kissel J, R Fenske. Explicit Consideration of Time-Dependent Dermal Absorption in Estimation of Pesticide Dose to Agricultural Reentry Workers. Annual Meeting of the ISEA, Boston MA, August 1998.

Conference Platform Papers (cont'd.) *(underline denotes presenter)*

Kissel J, J Shirai, and T Garlock. Application of Soil Contact Rates to Dermal Pathway Exposure Assessment. Annual Meeting of the SRA, Phoenix, AZ, December 1998.

Bartell SM, JH Shirai, AC Pierce, **JC Kissel**. Construction and Application of a Probabilistic Toxicokinetic Lead Model. EPA Lead Model Conference, RTP NC, June 1999.

Kissel JC. Estimation of Soil Ingestion Rates for Probabilistic Risk Assessment. EPA Lead Model Conference, RTP NC, June 1999.

Kissel JC, G Kedan, A Wawrukiewicz, R Fenske. Attempted Reconciliation of Predicted Children's Exposures to Organophosphate Pesticides with Measured Metabolite Levels in Urine. Joint annual meeting of ISEA/ISEE, Athens, September 1999.

Fenske R, **J Kissel**, C Lu, N Simcox, D Knutson, D Koch. Biologically Based Analysis of Organophosphate Pesticide Exposures in Children in Agricultural Communities. Joint annual meeting of ISEA/ISEE, Athens, September 1999

Wong EY, Shirai JH, Garlock TJ, **Kissel JC**. Estimation of Soil Contact Rates for a Residential Child Scenario. Annual Meeting of the Society for Risk Analysis, Atlanta, December 1999.

Kissel J, Showlund R, Shirai J. Investigation of Spatial Distribution of Pesticides on Skin Following Contact Transfer. Annual meeting of the Society for Risk Analysis, Washington DC, December 2000.

Kissel, JC. Multi-study comparison of children's urinary OP pesticide metabolite levels. Annual meeting of the ISEA, Charleston, SC, November 2001.

Kissel, JC, Bunge AL. Dermal Absorption from Environmental Matrices: Attention to Fundamental Concepts. Annual meeting of the SRA, Seattle, WA, December 2001.

Fenske RA, Lu C, Moate T, Curl C, **Kissel JC**. Biological monitoring of children's pesticide exposure: a review of recent studies in Washington State. Annual meeting of the SRA, Seattle, WA, December 2001.

Curl CL, Fenske RA, Lu C, Moate T, **Kissel JC**. Biological Monitoring of Children's Exposure: A Review of Recent Studies in Washington State. Joint annual meeting of the ISEA and ISEE, Vancouver, BC, August 2002.

Lu C, Fenske RA, **Kissel JC**, Kedan G. Dose estimates for organophosphorus pesticide exposures based on biological measurements for children living in agricultural and non-agricultural communities. Joint annual meeting of the ISEA and ISEE, Vancouver, BC, August 2002

Kissel, JC. Predictive Models of Dermal Exposure. International Conference on Occupational and Environmental Exposures of Skin to Chemicals: Science & Policy, (Invited plenary presentation) CDC/NIOSH, Washington DC, September 2002.

Kissel JC, Norman AM, Shirai JH, Bunge AL. Dermal absorption of environmental contaminants from water: Comparison of *in vivo* human experimental results and regulatory model prediction. Annual meeting of the ISEA, Stresa, Italy; September 2003.

Kissel JC, Shoaf MB, Shirai JH, Bunge AL. Dermal absorption of environmental contaminants from soil and sediment: A critical review. Annual meeting of the ISEA, Stresa, Italy; September 2003.

Bunge AL, **Kissel JC**. Translating Dermal Exposure to Dermal Absorption. Annual meeting of the SRA, Baltimore, MD; December 2003.

Kissel JC, Pandian M. Two-Dimensional Uncertainty Analysis for the ILSI RSI Workshop: Implementation and Implications. Annual meeting of the SRA, Baltimore, MD; Dec 2003.

Norman AM, **JC Kissel,** JH Shirai, AL Bunge. Effect of PBPK Model Form on Interpretation of *in vivo*/Human Aqueous Dermal Exposure Trials. Annual meeting of the ISEA, Philadelphia, PA; October 2004.

Conference Platform Papers (cont'd.) *(underline denotes presenter)*

Fenske RA, Lu C, Curl CL, **Kissel JC**. Exposure of Children to Organophosphorus Pesticides in Washington State. Annual meeting of the ISEA, Philadelphia, PA; October 2004.

Kissel JC. Two-Dimensional Probabilistic Assessment of Pesticide Exposures to Mixer-Loaders. Annual meeting of the SRA, Palm Springs, CA; December 2004.

Smith JA, **Kissel JC,** Shirai JH Balancing Input and Output of Chlorpyrifos and TCPy in the CTEPP Children. Annual meeting of the SRA, Baltimore, MD; December 2006.

Kissel JC. Probabilistic prediction of dermal absorption (invited). Occupational and Environmental Exposures of Skin to Chemicals-2007, NIOSH/Colorado School of Mines, Golden CO, June 2007.

Kissel JC. Use of biomarker data to inform modeling of dermal exposure. Annual meeting of the ISEA, Research Triangle Park, NC; October 2007.

Kissel JC, Shirai JH, Smith JA, Nevhage BA, Parker AN. Further Examination of the Persistent Low-level Contact Exposure (PLACE) Hypothesis using Pentachlorophenol and 2,4-Dichlorophenoxyacetic Acid Data from CTEPP Annual meeting of the SRA, Boston, MA; December 2008.

Stumbaugh KL, JH Shirai, EW Spalt, **JC Kissel**. Human *in vivo* Comparison of Dermal Absorption from Water and Soil using DEET as a Model Compound. Occupational and Environmental Exposures of Skin to Chemicals-2009, NIOSH/IOM, Edinburgh, June 2009.

Kissel JC, JH Shirai, JA Smith, AN Parker, BA Nevhage. Explaining Children's Exposure to Pesticides: the Persistent Low-level Ambient Contact Exposure (PLACE) Hypothesis. Occupational and Environmental Exposures of Skin to Chemicals-2009, NIOSH/IOM, Edinburgh, June 2009.

Kissel JC, Tanenbaum E, Shirai JH. Comparison of Dosimetry-based Exposure Predictions and Biomonitoring Results in Chlorpyrifos Handler Studies from PHED, Annual meeting of the ISES, Minneapollis, MN; November 2009.

Kissel JC. The Mismeasure of Dermal Absorption, Annual meeting of the ISES, Minneapollis, MN; November 2009.

Cousins A, Shirai JH, **Kissel JC**. Assessment of the contribution of indoor dermal pathways to exposure to SVOCs. Joint annual meeting of ISES and ISEE, Seoul, S. Korea; August 2010.

Cousins A, Shirai JH, **Kissel JC**. Assessment of the contribution of indoor dermal pathways to exposure to SVOCs. Annual meeting of the SRA, Salt Lake City, UT; December 2010.

Kissel JC, Kilcline EL, Shira JH. Simulation of removal of chemicals from skin by washing. Occupational and Environmental Exposures of Skin to Chemicals-2011, NIOSH/CREOD, Toronto, June 2011.

Kissel JC, Bunge AL. On the estimation and use of dermal permeability coefficients. ACS National Meeting, Denver CO, August 2011.

Kissel JC. Data gaps in understanding young children's soil/dust ingestion. Annual meeting of the ISES, Baltimore, October 2011.

Kissel JC, Bunge AL. On the estimation and use of dermal permeability coefficients. Annual meeting of the ISES, Baltimore, October 2011.

Kissel JC. Critical Evaluation of the Wash-in Effect. Annual meeting of the ISES, Seattle, October 2012.

Kissel JC. Assessment of the Contribution of Indoor Surface Residues to SVOC Exposure: Nicotine as a Model Compound, OEESC 6, Amsterdam, June 2013.

Kissel JC. Dermal uptake of chemicals, Joint Meeting of the ISES, ISEE and ISIAQ, Basel, August 2013.

Kissel JC. Dermal Exposures and Body Burden, Northwest Occupational Health Conference, Pacific Northwest Section AIHA, Seaside OR, October 2013.

Conference Platform Papers (cont'd.) *(underline denotes presenter)*

Kissel JC, Kilcline E, Shirai J. Efficacy of Skin Decontamination by Washing, accepted for Annual Meeting of the ISES, October 2014.

Conference Panels

Invited panelist, "Dust - Is It More than Just Dirt?" Annual Meeting of the International Society of Exposure Analysis, Research Triangle Park NC, November, 1997.
Invited panelist, "Bioavailability of Contaminants," ATSDR States Meeting, San Antonio, TX, September 2000.
Invited panelist, "Exposure Terminology Workshop: Toward Adopting an Official Glossary for the ISEA," Annual meeting of the ISEA, Stresa, Italy; September 2003.

Conference Poster/Platform Presentations (underline denotes presenter)

Shirai JH, **Kissel JC**. Variability in Estimated Physiological Half-Lives of PCBs in Humans: Impact on Exposure Assessment. International Congress of Toxicology-VII, IUTOX-ICT, Seattle, July 1995.
Duff RM, Shirai JH, Johnson JE, Bourcier D, **Kissel JC**. *In Vitro* Dermal Absorption of PCBs from a River Sediment. Annual Meeting of the ISEA, Monterey CA, October 2000.
Wong, EY. Shirai JH, Garlock TJ, **Kissel JC**. Estimated Dermal Soil Contact Rates for Residential Scenarios. Annual Meeting of the ISEA, Monterey CA, October 2000.
Curl C, **Kissel JC**, Fenske RA, Shirai JH, Coronado G, Thompson B. Baseline Data from an EPA/NIEHS Children's Environmental Health Center Community Intervention Project in Washington State. Annual Meeting of the ISEA, Monterey CA, October 2000.
Chan S, Cousins A, Domesle A, Jones K, **Kissel JC**, Meschke JS. Risk of stillbirth due to maternal consumption of Listeria monocytogenes-contamined fresh soft cheese in Hispanic pregnant women. Annual meeting of the SRA, Salt Lake City UT; December 2010.

Conference Posters

Kocian J, Shirai JH, **Kissel JC**, Meschke JS. Estimated Risk of MRSA Colonization among Swine Workers. Annual meeting of the SRA, Salt Lake City UT; December 2010.
Levin E, Kocian J, Su-Miao L, Roberts MR, **Kissel JC**, Meschke JS. Estimated Risk to Children of MRSA Colonization from Inter-tidal Beach Sand. Annual meeting of the SRA, Salt Lake City UT; December 2010.
Cooper EL, Shirai JH, **Kissel JC**. Assessment of the Contribution of Indoor Surface Residues to SVOC Exposure: Nicotine as a Model Compound. Annual meeting of the SRA, San Francisco; December 2012.
Kissel JC, GM Robarge. Attempting Human Exposure Assessment Using Fugacity-Based Models. Oak Ridge Model Conference, Oak Ridge; October 1987.
Kissel JC, JTC Grotenhuis, AJB Zehnder. Computer Simulation of Granule Growth in an Upflow Anaerobic Sludge Blanket Reactor (UASBR). Fifth International Symposium on Anaerobic Digestion, Bologna, Italy; May 1988.
Kissel JC, M Bedan, P Austin, M Hermanson. Assessment of Long Term Loss of PCBs from Soil Amended with Contaminated Sewage Sludge. Sixty-second Annual Water Pollution Control Federation Conference, San Francisco; October 1989.
Kissel JC, R Duff. Mass Transfer in Soil on Skin. Measuring, Understanding, and Predicting Exposures in the 21st Century, ATSDR/CDC/EPA, Atlanta, November 1991.

Conference Posters (cont'd.)

Kissel JC. Assessment of Human PCB Exposures by Various Routes in a Community with Widespread Contamination. International Congress on the Health Effects of Hazardous Waste, ATSDR, Atlanta, May 1993.

Johnson JE, **JC Kissel**. Plausibility of Dermal Pathway Dominance in Risk Assessment of Contaminated Soils: An Examination of Selected Superfund Risk Assessments. 4th Conference of the International Society for Exposure Analysis, Research Triangle Park, NC, September 1994.

Kissel JC, RM Duff. Impact of Soil Loading on Estimation of Efficiency of Dermal Absorption of Organic Contaminants from Soils. International Congress of Toxicology-VII, IUTOX-ICT, Seattle, July 1995.

Doran E, **J Kissel**, R Fenske. Modeling Occupational Exposure to Azinphosmethyl Residues. Annual meeting of the Society of Toxicology, Seattle, March 1998.

Kissel JC, A Wawrukiewicz, S Bartell, J Shirai. Evaluation of the Predictive Capability of Models of Exposure to Soil Contaminants. Sixth International FZK/TNO Conference on Contaminated Soil, Edinburgh, Scotland, May 1998.

Kissel JC, T Garlock, J Shirai. Assessment of Dermal Exposure to Soils. Sixth International FZK/TNO Conference on Contaminated Soil, Edinburgh, Scotland, May 1998.

Kissel JC, A Wawrukiewicz, S Bartell, J Shirai. Evaluation of the Predictive Capability of Models of Exposure to Soil Contaminants. Second Annual University of Washington Conference on the Ecological, Community and Occupational Health Issues at Hanford. Richland WA, November 1998.

Kissel JC, T Garlock, J. Shirai. Assessment of Dermal Exposure to Soils. Second Annual University of Washington Conference on the Ecological, Community and Occupational Health Issues at Hanford. Richland WA, November 1998.

Bartell SM, JH Shirai, CH Pierce, **JC Kissel**. Estimation of Childhood Soil Ingestion Rates Using a Probabilistic Toxicokinetic Lead Model. Annual meeting of the Society for Risk Analysis, Atlanta, December 1999.

Moate, T., Shirai, J.H., and **Kissel, JC.** Analysis of dust samples for organophosphorus pesticide oxon metabolites. Annual meeting of the SRA, Seattle, WA, December 2001.

Palcisko, G., Shirai JH, and **Kissel JC.** Use of GPS, GIS, and aerial photographs to identify historical orchard lands. Annual meeting of the SRA, Seattle, WA, December 2001.

Showlund R., Shirai JH, and **Kissel JC.** Transfer of pesticide residue to skin following contact with a contaminated surface. Annual meeting of the SRA, Seattle, WA, December 2001.

Elgethun K, Weppner S, Lu C, Fenske RA, **Kissel JC**, Yost MG. Integration of GPS/GIS and heart rate monitoring in a sampling plan to characterize children's exposure to pesticide spray drift. Joint annual meeting of the ISEA and ISEE, Vancouver, BC, August 2002.

Kissel JC, Bunge AL. Dermal Absorption from Environmental Matrices: Fundamental Concepts Revisited. Joint annual meeting of the ISEA and ISEE, Vancouver, BC, August 2002.

Kissel JC, Curl C, Kedan G, Lu C, Fenske RA. Comparison of OP metabolite levels in single and multiple daily urine samples. Joint annual meeting of the ISEA and ISEE, Vancouver, BC, August 2002.

Showlund R, **Kissel JC**, Shirai JH, van Belle G, Suggs J, Cohen-Hubal E. Investigation of transfer of fluorescent tracers from surfaces to skin. Joint annual meeting of the ISEA and ISEE, Vancouver, BC, August 2002.

Weppner S; Shirai JH, **Kissel JC**. Farm Exposures to Deposited Arsenic and Lead on Vashon/Maury Island, WA. Joint annual meeting of the ISEA and ISEE, Vancouver, BC, August 2002.

Conference Posters (cont'd.)

Kissel JC, Spalt EW, Shirai JH, Bunge AL. Critical review of experimental investigations of dermal absorption of chemical contaminants from soil and sediment. Annual meeting of the ISEA, Philadelphia, PA; October 2004.

Norman AM, **Kissel JC**, Shirai JH, Bunge AL. Critical review of in vivo/human investigations of dermal absorption of water contaminants via breath monitoring. Annual meeting of the ISEA, Philadelphia, PA; October 2004.

Shoaf MB, Shirai JH, **Kissel JC**. Unresolved Issues in Assessment of Dermal Exposure to Contaminants in Sediment. Annual meeting of the ISEA, Philadelphia, PA; October 2004.

Shoaf MB, J.H. Shirai JH, Kedan G, **Kissel JC**, Schaum J. Dermal Sediment Loads Following Child Play and Adult Clam Digging in Tide Flats. Annual meeting of the ISEA, Philadelphia, PA; October 2004.

Spalt EW, **JC Kissel**, JH Shirai, AL Bunge. Critical review of experimental investigations of dermal absorption of chemical contaminants from soil and sediment. Occupational and Environmental Exposures of Skin to Chemicals-2005, NIOSH/Karolinska Institute. Stockholm, Sweden, June 2005.

Norman AM, **JC Kissel**, JH Shirai, JA Smith, AL Bunge. Effect of alternative skin models on interpretation of *in vivo*/human investigations of dermal absorption of water contaminants via breath monitoring. Occupational and Environmental Exposures of Skin to Chemicals-2005, NIOSH/Karolinska Institute. Stockholm, Sweden, June 2005.

Kissel JC, Norman AM, JA Smith JA, JH Shirai JH, Bunge AL. Comparison of CSTR, Approximate membrane, and true membrane skin models in application to PBPK models of human dermal exposure to VOCs in water. Annual meeting of the ISEA, Tucson, AZ; October/November 2005.

Shirai JH, Shoaf MB, Kedan G, **Kissel JC**. Surface-area weighted dermal sediment loads following adult and child activities in tide flats. Annual meeting of the ISEA, Tucson, AZ; October/November 2005.

Smith JA, **Kissel JC**, Shirai JH, Morgan MK, Sheldon LS. Analysis of Concordance of Probabilistic Aggregate Exposure Predictions with Observed Biomonitoring Results: An Example Using CTEPP Data. Annual meeting of the ISEA, Tucson, AZ; October/November 2005.

Spalt EW, Kissel JC, Shirai JS. Comparing concentration normalized fluxes from soil to Potts-Guy permeability coefficients. Annual meeting of the ISEA, Tucson, AZ; October/November 2005.

Norman AM, Kissel JC, Smith JA, Shirai JH, Bunge AL. Dermal Absorption of Aqueous Vocs: Comparison of Three Skin Models, Tenth Perspectives in Percutaneous Penetration Conference, La Grande Motte, France, April 2006.

Shirai, JH, EW Spalt, Kissel JC. *In Vitro* Dermal Absorption of DEET from Soil. Joint annual meeting of ISEA and ISEE, Paris; September 2006.

Smith, JA, JC Kissel, Shirai JH. Markov-Chain Monte Carlo Estimation of Permeability Coefficients from *In Vivo* Human Exposure to Aqueous Chloroform. Joint annual meeting of ISEA and ISEE, Paris; September 2006.

Smith JA, Kissel JC, Shirai JH. Estimation of Children's Exposures via Poorly Characterized Pathways Using CTEPP Data Joint annual meeting of ISEA and ISEE, Paris; September 2006.

Meschke JS, Kissel JC, Beck NK, Shirai JH, Smith JA. Assessment of norovirus exposure from consumption of Puget Sound shellfish impacted by large vessel wastewater discharges. Annual meeting of the SRA, Baltimore, MD; December 2006.

Conference Posters (cont'd.)

Kissel JC, Shirai JH, Smith JA. The Persistent Low-level Ambient Contact Exposure (PLACE) Hypothesis. Occupational and Environmental Exposures of Skin to Chemicals-2007, NIOSH/Colorado School of Mines, Golden CO, June 2007.

Kissel JC, Shirai JH, Smith JA. The Persistent Low-level Ambient Contact Exposure (PLACE) Hypothesis. Annual meeting of the ISEA, Research Triangle Park, NC; October 2007.

Stumbaugh KL, Shirai JH, Kissel JC Estimation of Skin Permeability Coefficients for Aqueous Chloroform from the Gordon et al. *in vivo* Human Trials: Impact on Estimated Relative Contribution of Dermal Exposure. NEHA annual meeting, Tucson AZ; June 2008.

Stumbaugh KL, Shirai JH, Kissel JC Estimation of Skin Permeability Coefficients for Aqueous Chloroform from the Gordon et al. in vivo Human Trials: Impact on Estimated Relative Contribution of Dermal Exposure. Joint annual meeting of the ISES and ISEE, Pasadena, CA; October 2008.

Shirai JH, Kissel JC. Application of the Kasting-Miller-Bhatt Model to Historical Investigations of the Dermal Absorption of Chlorpyrifos. Occupational and Environmental Exposures of Skin to Chemicals-2009, NIOSH/IOM, Edinburgh, June 2009.

Bergstrom C, Shirai JH, Kissel JC. Particle Size Distributions, Size-concentration Relationships and Adherence to Hands of Selected Geologic Media Derived from Mining, Smelting and Quarrying Activities, Annual meeting of the ISES, Minneapolis, MN; November 2009.

Domesle ARM, Shirai JH, **Kissel JC**. Investigation of Chemical Uptake at Low Loads on Skin. Annual meeting of ISES and ISEE, Seoul, S. Korea; August 2010.

Cousins A, Shirai J, Kissel JC. Assessment of indoor dermal exposure to SVOCs Occupational and Environmental Exposures of Skin to Chemicals-2011, NIOSH/CREOD, Toronto, June 2011.

Domesle ARM, Shirai JH, **Kissel JC**. Investigation of Chemical Uptake at Low Loads on Skin. Occupational and Environmental Exposures of Skin to Chemicals-2011, NIOSH/CREOD, Toronto, June 2011.

Medina Castellanos M, Cooper EL, Shirai JH, **Kissel JC**. The effect of pH on the octanol water partition coefficient of pentachlorophenol. Annual HENAAC Conference, 2011.

Ruby M, Lowney Y, Menzie C, Ghosh U, Gomez-Eyles J, Roberts S, **Kissel J**, Bunge A. PAH Interactions with Soil and Effects on the Bioavailability to Humans. AEHS Annual International Conference on Soils, Sediments, Water and Energy, Amherst MA, October 2011.

Cooper EL, Shirai JH, **Kissel JC**. Assessment of the Contribution of Indoor Surface Residues to SVOC Exposure. Annual meeting of the ISES, Baltimore, October 2011.

Greenhall AC, Shirai JH, **Kissel JC**. Assessment of Children's Aggregate Indoor Exposure to a Phthalate Found in Floor Tile. Annual meeting of the ISES, Baltimore, October 2011.

Kilcline, EC, JH Shirai, **Kissel JC**. Characterization of Dermal Absorption Following Decontamination via Washing. Annual meeting of the ISES, Baltimore, October 2011.

Cooper EL, Shirai JH, **Kissel JC**. Assessment of the Contribution of Indoor Surface Residues to Children's Nicotine Exposure. Annual meeting of the ISES, Seattle, October 2012.

Chang C-H, Shirai JH, Kissel JC. Assessment of Children's Non-dietary Exposure to Chlorpyrifos in Indoor Environments. Annual meeting of the ISES, Seattle, October 2012.

Kissel J, Peckham T, Shirai J, Bunge A, Lowney YW, Ruby M. Dermal Absorption of Benzo[a]pyrene: Assessment of Flux from Aged Soil and Application to Risk Assessment of Contaminated Sites. Annual Meeting of SOT, Phoenix AZ, March 2014.

Invited Presentations/Seminars

Numerical Simulation of Mixed Culture Biofilms. General Motors Research Institute, Warren MI, September 1984.
Numerical Simulation of Mixed Culture Biofilms. Department of Civil Engineering, University of Massachusetts, Amherst MA, December 1984.
Numerical Simulation of Mixed Culture Biofilms. Department of Civil Engineering, Portland State University, Portland OR, January 1985.
Numerical Simulation of Mixed Culture Biofilms. Shell Development Company, Houston TX, February 1985.
Numerical Simulation of Mixed Culture Biofilms. School of Public and Environmental Affairs, Indiana University, Bloomington, March 1985.
Numerical Simulation of Mixed Culture Biofilms. Department of Microbiology, Agricultural University, Wageningen, The Netherlands, August 1985.
Numerical Simulation of Mixed Culture Biofilms. Departments of Chemical Engineering and Microbiology, University of Amsterdam, The Netherlands, June 1986.
Implications of Mixed Cultures in Fixed-Film Biological Wastewater Treatment Processes. Department of Civil Engineering, University of Notre Dame, January 1987.
PCBs in Bloomington: A Case History. Dept. of Civil Engineering, University of Notre Dame, January 1987.
Analysis of Environmental Pollutant Exposure and Elimination with Pharmacokinetic Models. Biomedical Colloquium, Medical Sciences Program, Indiana University, Bloomington, November 1988.
Assessment of Pollutant Exposure and Elimination with Pharmacokinetic Models. Department of Civil Engineering, University of Washington, Seattle, March 1989.
Does Household Hazardous Waste Collection Make Sense? School of Public and Environmental Affairs, Indiana University/Purdue University at Fort Wayne, June 1989.
Pharmacokinetic Modeling of the Impact of Dietary Fat Substitutes on Fecal Elimination of Lipophilic Xenobiotics. Procter & Gamble, Cincinnati OH, June 1989.
Reevaluation of the Dermal Bioavailability of 2,3,7,8-TCDD in Soil. Department of Civil Engineering, Stanford University, July 1989.
Assessment of Dermal Bioavailability of Organic Xenobiotics. School of Public Health and Community Medicine, University of Washington, Seattle, October 1989.
Evaluation of Relative Magnitude of Human PCB Exposure by Various Routes in a Community with Multiple Contaminated Sites. Department of Civil Engineering, University of Washington, Seattle, February 1991.
Emissions of Volatile and Odorous Organic Compounds from Municipal Waste Composting Facilities: A Literature Review. Basic and Applied Compost Research Meeting, Solid Waste Composting Council, Cincinnati OH, January 1992.
Dioxin. Wolfle Symposium on Science, Technology and Society, University of Washington, April 1992.
Trace Organics in Compostables, External Advisory Committee on Compost Quality Standards. Department of Ecology, Seatac WA, November 1992.
Technology and Environment Sustainable Roundtable, College of Architecture & Urban Planning, University of Washington, Seattle, May 1994.
Significance of the Dermal Pathway in Risk Assessment of Contaminated Soils. Department of Civil Engineering, University of Washington, Seattle, November 1994.
Dermal Contact with Soil: Characterization and Effect on Contaminant Absorption. Department of Chemical and Petroleum Engineering, Colorado School of Mines, Golden CO, November 1995.

Invited Presentations/Seminars (cont'd.)

Non-occupational Exposures. Symposium on Hanford Risk, Environmental Radioactivity Study Committee, University of Washington; Seattle, May 1996.

Characterization of Dermal Contact with Soil. EPA Dermal Workshop, Washington DC, August 1997.

Risk-Based Cleanups: Reasons for Caution. Risk Based Decision Making: An Update on Contaminated Site Cleanups. Pacific Northwest-International Section/Air & Waste Management Association, Puget Sound Chapter of the SRA, and the University of Washington Institute for Risk Analysis and Risk Communication; Seattle, April 1998.

Children's exposure to lead and arsenic in orchard soils. Pacific Northwest Agricultural Safety and Health Center Investigator Forum, University of Washington, February 1999.

Estimating transfer of pesticides from residential surfaces to children's skin. Department of Civil and Environmental Engineering, Stanford University, April 1999.

Dermal pathway issues. Workshop on Children's Health Issues. ATSDR. Green Bay WI, August 1999.

Investigating aggregate and cumulative exposures with organophosphate pesticide biomarkers. ATSDR States Meeting, San Antonio, TX, September 2000.

Effect of Skin Model Form on PBPK Model Performance. Global Net on Consumer Exposure Modeling – Workshops on Framework/Policy and Research/Science Major Issues. Workshop I: Dermal transfer and penetration algorithms. Commission of the European Communities, Joint Research Centre, Intra/Verbania, Italy, June 2005

Use of PBPK Modeling to Interpret Biomonitoring Data: Exhalation of VOCs Following Dermal Exposure to Aqueous Solution. University of Washington Department of Environmental and Occupational Health Sciences, December 2005.

Uptake and Retention of Viral Particles by Shellfish (w/ JS Meschke) Pacific Northwest Center for Human Health and Ocean Studies and NOAA Center for Oceans and Human Health, University of Washington, February 2006.

Use of Biomonitoring to Inform Modeling of Dermal Exposure, UW/UBC Annual Occupational and Environmental Health Conference, Semiahmoo WA, January 2008

Dermal Exposure. Joint annual meeting of ISES and ISEE. Pasadena, CA. October 2008.

The Mismeasure of Dermal Absorption. DEOHS Seminar, January 22, 2009.

Dermal Absorption. Semi-Volatile Organic Compounds (SVOCs) in the Residential Environment, Indoor Air Institute, Research Triangle Park NC, August 18-19, 2009

Children's non-dietary chemical exposure: Is PLACE (Persistent Low-level Ambient Contact Exposure) - the missing link? Northwest Children's Environmental Health Forum, Tukwila, WA, October 1, 2009.

Impact of Sediment Properties on Dermal Adherence and Absorption. Workshop on Approaches for Human Health-Based Sediment Quality Guidelines and Sediment Risk Assessment, Health Canada, Vancouver, BC; June 2-3, 2010.

Balancing estimated exposures and biomonitoring data. Semi-Volatile Organic Compounds (SVOCs) in the Residential Environment II, Indoor Air Institute, Research Triangle Park NC, January 5-7, 2011

On the Estimation and Use of Dermal Permeability Coefficients. UW DEOHS seminar series, December 6, 2012.

12. UNIVERSITY SERVICE

Graduate School Representation - Ph.D. Thesis Committees

M. Hall, Slavic Languages (completed 1996); J. Thomas, Chemical Engineering (completed 1998); M. Turley, Quantitative Ecology (completed 2002); C. Nelson, Forestry (completed 2004); J. Jeon, Applied Mathematics (completed 2007).

Other University Service

Steering Committee, Global and Environmental Chemistry Program, 2001
Member, Chair Search Committee, Department of Civil and Environmental Engineering, School of Engineering, University of Washington, 2006-7
Reviewer, Royalty Research Fund, 2007
Steering Committee, Public Health Major, School of Public Health, University of Washington

Departmental (DEOHS) Service

Ph.D. Oversight Committee, 1990-1992, 2004-2005.
Seminar Committee, 1990-1992.
Chair's Proxy for Human Subjects Expedited Review, 1990-2002.
Committee on Continuing Education, 1991-1994.
Environmental Health News Committee, 1992-1995.
Member, Advisory Committee, "Supervising Hazardous Waste Operations," Northwest Center for Occupational Health and Safety, Department of Environmental Health, University of Washington, 1992-1994.
Member, Advisory Committee, "Hazardous Waste Incident Response," Northwest Center for Occupational Health and Safety, Department of Environmental Health, University of Washington, 1992-1994.
Member, Advisory Committee, "Radioactive Waste Management," Northwest Center for Occupational Health and Safety, Department of Environmental Health, University of Washington, 1995.
Informatics Committee, 1996-1997; Chair, 1996-1997.
Admissions Committee, 1997-2002, 2005-present; Chair, 1998-99.
Space Committee, 1998-1999.
Biocontaminant Lab Task Group, 1999-2001
Promotion and Tenure Committee, 1999-2002, 2012-present; Chair, 2001-2002.
Environmental Health Technology Faculty Search Committee Chair, 2001.
Undergraduate Program Review Committee, 2002.
Director, HSAT Program, NIOSH ERC, 2004-2011.
Curriculum and Teaching Policy Committee, 2004-2006; Chair 2005-2006.
PhD Examination Committee, 2012-13
Lecturer Search Committee, 2012
Faculty Search Committee, Toxicology, 2012-13
Faculty Search Committee, Exposure Science, 2012-13

13. PROFESSIONALY RELATED COMMUNITY SERVICE

Member, Utilities Service Board, City of Bloomington, IN, 1987-1990. (Oversight of water and sewage utilities and of City participation in consent decree governing cleanup of PCB-contaminated National Priority List sites). Appointed by the City Council.
Member, Industrial By-Products Committee, IN Corp. for Science & Technology, 1988-1990.
Member, Monroe County (IN) Plan Commission Lakes Task Force, 1989-1990.

Professionaly Related Community Service (cont'd.)

Member, Advisory Committee, State of Washington Dept. of Ecology Higher Education Project on Waste Reduction and Recycling, 1991.
Presenter, YMCA Earth Corps Symposium, University of Washington, October 17, 1991.
Member, Sediment Scientific Review Board, Washington State Department of Ecology, May 1993.
Preparation of exposure assessment for contaminated soils at Tacoma branch campus site, University of Washington Real Estate Office, June 1995.
Member, Protective Measures Workgroup, Areawide Soil Contamination Project, WA Dept of Ecology, 2002

14. OTHER

Externally Funded Instructional Development

Education and Research Center, $6,427,180 (total costs), NIOSH 1T42OH0084301, July 1, 2005-June 30, 2010. N. Seixas P.I.; **JC Kissel, subprogram PI**-Hazardous Substance Academic Training (HSAT) Program (5% FTE).
Hazardous Waste Curriculum Development Grant. $50,000, 1992. Battelle Pacific Northwest Laboratory. HD Stensel, Dept. of Civil Engineering, U. of Washington, principal awardee; J Massman, D Lettenmeier, **JC Kissel** (25% FTE third quarter), collaborators.
STAC-TEC: Sustainable Technologies, Alternate Chemistry-Training and Ed Center, $775,341 (total costs), 8/2013-7/2016, NIEHS, M Yost, U. of Washington, PI.

15. TEACHING HISTORY

Classroom Instruction

Indiana University

Course No.	Title	Sem	Year	Units	Enrollees	Load
E300	Introduction to Environ Science	Spring	89	3	117	33%
		Fall	86	3	120	100%
E450	Process Analysis for Environ	Spring	87	3	2	100%
	Engineering	Spring	86	3	2	100%
E452	Solid and Hazardous Waste	Fall	86	3	15	100%
	Management	Fall	85	3	13	100%
E452/E542	Hazardous Waste Management	Fall	89	3	48	100%
	/Hazardous Materials Control	Fall	88	3	29	100%
		Fall	87	3	12	100%
E475	Techniques in Environ Science	Spring	90	3	15	33%
		Fall	87	3	6	33%
E552	Environmental Technology	Fall	89	3	27	100%
		Fall	88	3	15	100%
E553	Creation and Solution of	Spring	88	3	5	100%
	Environmental Models	Spring	87	3	4	100%
		Spring	86	3	3	100%
E555	Adv. Topics in Haz. Waste Mgt.	Spring	89	3	4	100%
E555	PCBs & Related Compounds	Spring	88	3	13	50%

Classroom Instruction (cont'd.)

University of Washington

Course No.	Title	Qtr	Year	Units	Enrollees	Load
ENVH 446	Hazardous Waste Management	Spring	14	3	15	100%
		Winter	13	3	14	100%
		Winter	12	3	7	100%
		Winter	11	3	15	100%
		Winter	10	3	13	100%
		Winter	09	3	15	100%
		Winter	08	3	17	100%
		Winter	07	3	20	100%
		Winter	06	3	20	100%
		Winter	05	3	18	100%
		Winter	04	3	13	100%
		Winter	03	3	23	100%
		Winter	02	3	13	100%
		Winter	01	3	12	100%
		Winter	00	3	15	100%
		Winter	99	3	39	100%
		Winter	98	3	27	100%
		Winter	97	3	30	100%
		Spring	96	3	29	100%
	(same as CIVE 488, '92-'95)	Spring	95	3	65	50%
		Spring	94	3	73	100%
		Spring	93	3	64	50%
		Spring	92	3	c. 70	50%
ENVH 445	Solid Waste Management	Winter	11	3	11	50%
	Solid Waste Management	Winter	96	3	c. 32	16%
	Solid & Hazardous Waste Mgt.	Spring	91	3	c. 20	25%
ENVH 472	Environmental Risk and Society	Winter	12	3	23	100%
ENVH 511	Environmental & Occupational Health Science	Winter	14	3	60	100%
ENVH 543	Microbial Risk Assessment	Spring	14	3	15	33%
		Spring	12	3	14	33%
		Spring	10	3	11	20%
		Spring	08	3	12	20%
		Spring	07	3	9	20%
		Spring	06	3	9	20%
ENVH 552	Environ. Chemistry of Pollution	Winter	96	3	c. 20	50%
		Winter	95	3	14	40%
		Winter	94	3	c. 30	33%
		Fall	92	3	c. 30	25%
ENVH 572	Environmental Risk and Society	Winter	12	3	2	100%

Classroom Instruction (cont'd.)

University of Washington

Course No.	Title	Qtr	Year	Units	Enrollees	Load
ENVH 574	Probabilistic Exposure Analysis	Spring	13	3	13	100%
		Spring	11	3	9	100%
		Spring	09	3	11	100%
		Spring	07	3	9	100%
ENVH 574	Quant. Methods for Environ. Exposure Assessment	Spring	05	3	11	100%
		Spring	04	3	7	100%
		Spring	03	3	7	100%
		Spring	02	3	8	100%
		Spring	01	3	5	100%
		Spring	00	3	6	100%
		Spring	99	3	9	100%
		Spring	98	3	5	100%
ENVH 580	EH Seminar	Winter	02	1	33	33%
ENVH 590	Environ Models for Expos Assess	Spring	97	2	4	100%
ENVH 594	Topics in EH (Journal Club)	Winter	11	1	10	33%
		Winter	09	1	5	50%
		Winter	08	1	7	50%
		Winter	06	1	9	50%
		Winter	05	1	9	50%
		Winter	04	1	c. 7	33%
		Winter	03	1	12	33%
		Winter	00	1	5	100%
		Winter	99	1	5	100%
		Winter	98	1	6	100%
		Winter	97	1	6	100%
		Spring	96	1	6	100%
		Winter	96	1	11	50%
		Fall	95	1	11	50%

Continuing Education Instruction

Instructor, "Pesticide Medicine," Northwest Center for Occupational Health and Safety, Department of Environmental Health, University of Washington, March 2002

16. ADVISING AND FORMAL MENTORING

M.S. Theses Chaired

Ragle, N. Short-Term Variability in Leachate Quality at Two Locations Within a Municipal Landfill. 1992.

Perona, R. Predicting Volatile Organic Compound Emissions from In-Vessel Municipal Solid Waste Composting. 1992.

Duff, R. *In Vitro* Dermal Absorption of Contaminants from Soil: Effect of Soil Loading and Air Flow. 1993.

Lee, R. Prediction of Residential Exposure to Arsenic Contaminated Soil Using Monte Carlo Simulation: A Comparison to Biomonitoring Data. 1993.

M.S. Theses Chaired (cont'd.)

Johnson, J. Plausibility of Dermal Pathway Dominance in Risk Assessment of Contaminated Soils: An Examination of Selected Superfund Risk Assessments. 1994.
Shirai, J. Variability in Estimated Physiological Half-lives of PCBs in Humans: Implications for Exposure Assessment. 1995.
Bartell, S. Estimation of Childhood Soil Ingestion Rates with Biomonitoring Data from Soil Remediation Studies. 1996.
Holmes, K. Characterization of Soil Adherence to Skin. 1996.
Garlock, T. Effects of Activity Patterns on Assessment of Dermal Exposure to Contaminated Soils. 1997.
Wawrukiewicz, A. Validation Studies of Two-dimensional Monte Carlo Modeling of Children's Residential Exposures to Arsenic and Pesticides in Soil. 1997.
Wong, E. Use of Children's Activity Patterns in Dermal Soil Exposure Assessment. 1999.
Palcisko, G. Children's Exposure to Lead and Arsenic in Orchard Soils. 2000.
Weppner, S. Farm Exposures to Deposited Arsenic and Lead on Vashon/Maury Island. 2001.
Showlund R. Transfer of Pesticide Surrogate Residue to Skin following Contact with a Contaminated Surface. 2002.
Smith, L. Plausibility of Direct Exposure to Paranitrophenol in the Chicago Methyl Parathion Spraying Case. 2003.
Norman, A. 2004. Use of PBPK Models to Characterize Dermal Absorption of Volatile Organic Compounds from Water
Shoaf, M. 2004. Dermal Exposure to Sediment: Field Measurement of Sediment Loadings and Unresolved Issues in Exposure Assessment
Spalt, E. 2005. Dermal Absorption of Contaminants from Soil: Critical Review and Investigations with DEET.
Smith, JA III. 2006. Reconciliation of aggregate probabilistic exposure model predictions with observed biomarkers: A case study using data from the CTEPP child cohorts.
Stumbaugh, KL. 2008. Estimation of Skin Permeability of Aqueous Chloroform from Human In Vivo Trials and Relative Contribution of Dermal Absorption to Multi-route Exposure to Chloroform in Drinking Water.
Jennings, LK. 2009. An Investigation of Perfluorinated Compounds (PFCs) in Puget Sound Shellfish.
Bergstrom CM. 2010. Particle size distributions, size concentration relationships, and adherence to hands of selected geologic media derived from mining, smelting, and quarrying activities.
Domesle, ARM. 2010. Investigation of Chemical Uptake and Distribution at Low Loads on Skin.
Greenhall-Cousins A. 2011. Assessment of Children's Non-dietary Indoor Exposure to a Phthalate Found in Floor Tile.
Kilcline E. 2011. Characterization of Dermal Absorption Following Decontamination via Washing.
Cooper E. 2012. Toward an understanding of children's to semi-volatile organic compounds in the indoor environment.
Jung C. 2014. Investigation of surface sampling techniques in an e-waste recycling facility.

Current M.S. Advisees (as chair)

Peckham T. Expected 2015.
Kerns K, Expected 2015.
Levasseur J, Expected 2015.
Walker J, Expected 2015.

M.S. Theses, non chair role

J. Beeh (1992), C. Gunderman (1994), S. Wolz (1994), A. Vielmetti (1996), E. Mazengia (1998), P. Yang (1998), G. Kedan (1999), C. Curl (2000), N. Judd (2000), D. Yoder (2000), K. Himes (2003), L. Tolbert (2007), J. Kocian (2010)

Completed Ph.D. Theses, non chair role

Doran, E. (U. of Washington DEOHS, 2000); Elgethun, K. (U. of Washington DEOHS, 2004); Gajjar, R. (U of Cincinnati, Department of Pharmacology, 2010).

Current Ph.D. Theses, non chair role

Van Abel, N. (U. of Washington DEOHS, expected 2014); Pouzo, J. (U. of Washington DEOHS).

Environmental Health Research Experience Program mentor (competitive undergraduate research opportunity)

C Diangco (2006), AN Parker (2007, 2008), A Hammerbeck (2009), A Levitz (2010); M Medina Castellanos (2011); C-H Chang (2012); KM Robertson (2013); J Cobbs-Hart (expected 2014)

CURRICULUM VITAE

Name: James Edward Klaunig, Ph.D. ATS, IATP

Office Address: Department of Environmental Health
School of Public Health
Indiana University
1025 East 7th st
Bloomington, IN 47405

Telephone 812 856-2448 (office)
812 856-2445 (office)
[redacted] (private)

Education:

1973 B.S. in Biology, Ursinus College, Collegeville, Pennsylvania
1976 M.A. in Biology, Montclair State University, Upper Montclair, New Jersey
1980 Ph.D. in Experimental Pathology/Toxicology, University of Maryland School of Medicine, Baltimore, Maryland (mentor, Benjamin F. Trump)
1980-1982 Postdoctoral Studies, Chemical Carcinogenesis, Department of Pathology, Medical College of Ohio, Toledo, Ohio
1990 -1991 Postdoctoral Studies (sabbatical leave), Chemical Carcinogenesis, Chemical Industry Institute of Toxicology, Research Triangle Park, North Carolina

Academic and Professional Appointments:

2014 – Present Affiliated Faculty Member, Indiana University Network Science Institute, Indiana University, Bloomington, Indiana
2012 – Present Adjunct Professor, SPEA, Indiana University, Bloomington, Indiana
2010 – Present Professor Department of Environmental Health, Indiana University, Bloomington, Indiana
2006 – 2010 Professor of Public Health, Indiana University School of Medicine, Indianapolis, Indiana
2005 – 2009 Associate Director, Indiana University Cancer Center, Indiana University School of Medicine, Indianapolis, Indiana
2005 – 2010 Robert B. Forney, Professor and Director of Toxicology, Indiana University School of Medicine, Indianapolis, Indiana
1991 - 2010 Professor, Department of Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, Indiana
1991 - 2010 Director, Division of Toxicology, Department of Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, Indiana
1991 – Present Member of Graduate Faculty, Indiana University, Indianapolis, Indiana
1991 - 2003 Director, Department of Toxicology, State of Indiana
1991 - 2003 State Toxicologist, State of Indiana
1990 - 1991 Visiting Scientist, Chemical Industry Institute of Toxicology, Research Triangle Park, North Carolina
1988 - 1991 Associate Professor, School of Allied Health, Medical College of Ohio, Toledo, Ohio
1987 - 1991 Associate Professor, Department of Pharmacology and Therapeutics, Medical College of Ohio, Toledo, Ohio
1986 - 1991 Associate Professor, Department of Pathology, Medical College of Ohio, Toledo, Ohio
1982 - 1994 Member, Graduate Faculty, Medical College of Ohio, Toledo, Ohio
1982 - 1986 Assistant Professor, Department of Pathology, Medical College of Ohio, Toledo, Ohio

Board Certifications

Fellow, Academy of Toxicological Sciences
Fellow, International Academy of Toxicological Pathology
Hazardous Materials Manager

Honors & Awards:

2016 Outstanding Senior Researcher, Indiana University School of Public health
2016 Highly Cited Researchers (2004-2014) Thomson Reuters, ISIhighlycited.com (out of 128 within Pharmacology and Toxicology)
2014 Highly Cited Researchers (2002-2012) Thomson Reuters, ISIhighlycited.com (out of 133 within Pharmacology and Toxicology)
2014 Society of Toxicology Visiting Scholar Host (Prof Olatunde Farombi , University of Ibadan, Nigeria)
2012 Chairman's Award, Indiana Criminal Justice Institute, State of Indiana,
2009 George H. Scott Award, Toxicology Forum, Aspen, Colorado
2008 Benjamin F. Trump Memorial Lectureship, Aspen Cancer Conference, Aspen, Colorado
2008 Freehold Alumni Hall of Fame, Freehold High School, Freehold, New Jersey
2006 John Doull Toxicology Lecture, University of Kansas, Medical School, Kansas City, Kansas
2003 Sagamore of the Wabash (The highest award presented to a citizen of Indiana by the Governor of Indiana for Service to the State)
2002 Who's Who 2000 Outstanding Scientists of the 21st Century
2002 Kenneth P. Dubois Award, Midwest Society of Toxicology Chapter
2001 IU Trustees Teaching Excellence Award
1998 Who's Who American Men and Women in Science
1997 Guest Professor, Beijing University, Beijing, P.R. China
1996 Otis R. Bowen, M.D. Distinguished Leadership Award, Indiana University School of Medicine, Indianapolis, Indiana
1973 Varsity Club Senior Award, Ursinus College, Collegeville, Pennsylvania
1973 Team Captain and Most Valuable Player Award, Ursinus College, Collegeville, Pennsylvania

Additional Training:

1991 Indiana University Center for Studies of Law in Action (Tests for BAC in Highway Safety Programs: Supervision and Expert Testimony)

Society Memberships

American Association of Cancer Research
American College of Toxicology
Indianapolis Press Club
International Association of Forensic Toxicologists
International Society for Free Radical Research
Society for Clinical and Translational Science
Society of Toxicologic Pathologists
Society of Toxicology
Sigma Xi

COMMITTEES AND ADMINISTRATIVE SERVICE:

Extramural Service

State of Indiana

2011 – 2012	Member, Toxicology Advisory Board, State of Indiana (Governor Appointment /legislative mandate)
1996—Present	Member, Governor's Council on Impaired and Dangerous Driving; State of Indiana (Governor Appointment)
1991—2003	Member, State of Indiana Controlled Substances Advisory Committee (Governor Appointment)
1991—2003	Member, State of Indiana Pesticide Review Board (Governor Appointment)
1991 - 2003	State Toxicologist, State of Indiana
1991 - 2003	Director, Department of Toxicology, State of Indiana

United States Environmental Protection Agency

2016	Member RDX Review Panel, IRIS USEPA
2012 – 2018	Member, EPA Science Advisory Board (SAB) Chemical Assessment Advisory Committee
2008-2009	Chair, U.S. Environmental Protection Agency, BOSC Subcommittee, Human Health Study Research Program
2007	Chair, U.S. Environmental Protection Agency Environmental Carcinogenesis Division Mid-Cycle Review
2005 - 2008	Chair, U.S. Environmental Protection Agency Human Health Research Program Review
2002 - 2008	Member, Science Advisory Board Exposure and Human Health Committee
2005	Member, U.S. Environmental Protection Agency Science Advisory Board, Perfluorooctanoic Acid (PFOA) Risk Assessment Review Panel
2004	Chair, Peer Review, NHEERL's Environmental Carcinogenesis Division (ECD)
2003	Chair, Human Health Research Strategy Review Panel, EPA Science Advisory Board
2000	Member, Scientific Advisory Panel subcommittee on Atrazine Health Risk Assessment
1999	Peer Reviewer, IRIS document on Chlorite
1999	Member, Scientific Advisory Panel subcommittee on Chloroform Carcinogenicity
1999	Peer Reviewer, IRIS document on Bromate
1998	Peer Reviewer, IRIS document on 1, 3 dichloropropanol
1994 - 2005	Member, USEPA Committee for Cancer Risk Assessment Guidelines, Washington, D.C.

Society of Toxicology

Elected positions

2003—2005	Treasurer, Society of Toxicology
2002—2003	Treasurer Elect, Society of Toxicology
1998—1999	President, Carcinogenesis Specialty Section, Society of Toxicology
1997—1998	Chairman, Education Committee, Society of Toxicology
1996—1998	President, Ohio Valley Society of Toxicology
1996—1997	Vice President, Carcinogenesis Specialty Section, Society of Toxicology
1995—1998	Member, Education Committee, Society of Toxicology
1995—1996	Vice President, Ohio Valley Society of Toxicology
1992—1994	Councilor, Mechanisms Specialty Section, Society of Toxicology

Appointed positions

2012 – 2015	Member, Society of Toxicology Audit Committee
2007 - 2009	Member, Society of Toxicology Endowment Committee
1998—2001	Member, Finance Committee, Society of Toxicology
1998—1999	Project Coordinator, Fourth Edition, Resource Guide to Careers in Toxicology
1997—1998	Member, (Ad Hoc) Toxicology Education Foundation
1993—1995	Member, Program Committee, Seventh International Congress of Toxicology
1994	Judge, Mechanisms Specialty Section 33rd Annual Meeting, Society of Toxicology
1993	Judge, Mechanisms Specialty Section 32nd Annual Meeting, Society of Toxicology
1992	Judge, Mechanisms Specialty Section 31st Annual Meeting, Society of Toxicology
1988—1992	Member, Program Committee, Society of Toxicology

Society of Toxicologic Pathology

2012	Scientific Program Committee, Society of Toxicologic Pathology
2012	Co-Chair, Chemical-Based Tissue Reactivity, Society of Toxicologic Pathology Annual Meeting
2009	Co-Chair, Mechanisms of Carcinogenicity, Society of Toxicologic Pathology Annual Meeting

International Life Sciences Institute

2014 - 2017	Editor-in-Chief – Health and Environmental Science Institute (HESI)
2010 – 2013	Scientific Advisor, Emerging Issues Steering Committee (EISC), Health & Environmental Science Institute
2010	Science Advisor, Epidemiology Subcommittee, Health and Environmental Sciences Institute
2010	Member, RISK21 committee, Health and Environmental Sciences Institute, Washington, DC
2005 - 2007	Executive Committee, Health and Environmental Science Institute
2001 - 2008	Member, Board of Trustees, Health and Environmental Science Institute
2005 - Present	Co Chair, Angiosarcoma Mechanism of Action Subgroup, PPAR Committee, HESI
2004 - 2006	Chair, Communications Committee, Health and Environmental Science Institute
2002 - 2004	Vice Chair, Communications Committee, Health and Environmental Science Institute
2002 - 2003	Chair, Peroxisome Proliferator (PPAR alpha) Working Group, Human Relevance of Rodent Tumors, RSI

Other

2016 – 2011	Member, The Joint FAO/WHO Expert Committee on Food Additives (JECFA), Geneva.
2015 - present	Member, Regulatory Awareness Among Academic Researchers Committee, American Chemistry Council, Washington, D.C.
2014 - 2016	President, Toxicology Forum Board of Directors, Washington, D.C.
2011	Member, National Toxicology Program, Bioassay Review Committee, NIEHS, RTP, NC.
2011 - 2013	Member, Committee on the Analysis of Cancer Risks in Populations Near Nuclear Facilities, National Academy of Sciences, Washington, DC
2010 - 2013	Steering committee, Receptors in Carcinogenesis, Mode of Action and Dose response, TERA, RTP, NC
2007	Co-Chair, Acrylonitrile's Modes of Carcinogenic Action (MOA) in the Rat and Mouse and Their Relevance to Human Risk Assessment, Acrylonitrile (AN) Group, Arlington, Virginia
2005 – present	Member, the Toxicology Forum Board of Directors
2005 - present	Member, Toxicology Forum Program committee
2002 - 2004	Member, Outreach Committee, American College of Toxicology
2000 - 2004	Member, National Toxicology Program Board of Scientific Counselors, NIH/NIEHS, RTP, NC
2000	Member, Carcinogenesis Review Panel, Thyroid Carcinogenesis, WHO, International Agency for Research in Cancer, Lyon, France
2000 - 2002	Member, SOT/NIEHS/USEPA, Working Group on Science Based Decisions Concerning Toxicology of Mixtures, Washington, D.C
2000	Member, Graduate Program Review, School of Public Health, University of North Carolina
1999 - 2003	Faculty, American Chemical Society, Principles of Toxicology (Chemical Carcinogenesis), Annual Award Society, Washington, D.C
1999	Member, American Association for Cancer Research State Legislative Committee
1998 – 2000	Member, Human Effects Advisory Panel, The Joint Non-lethal Warfare Directorate, DOD
1998	Chair, Graduate Program Review Committee, Texas A & M University
1991 - 1993	Member, Education Committee, American College of Toxicology
1991 – 1996	Chairman, Scientific Advisory Panel on Dieldrin Carcinogenesis, Dermigen Inc.
1989	Member, Program Review Committee, National Institute of Occupational Safety and Health

Grant Reviews / Study Sections

2013	Chair, Grant Review Panel, National Cancer Institute, June
2009 – present	Full member and Reviewer, Italian Ministry for Education, University and Research,
2008—2012	Full Member, National Cancer Institute, Cancer Etiology Study Section, Center for Scientific Review
2008	Ad hoc Member, National Cancer Institute, Cancer Etiology Study Section, NIH/NCI
2007	Member, National Cancer Institute, Designated Cancer Center Site Visit
2005—2008	Co-Chair, PPAR Hemangiosarcomas Working Group, HESI/ILSI
2006	Member, Site Visit Pawl Laboratory of Metabolism, National Cancer Institute, Center for Cancer Research, October
2006	Member, Grant Review Committee, Czech Science Foundation, September
2006	Member, Grant Review Committee, Canadian Liver Foundation, September
2006	Chairman, National Cancer Institute Special Emphasis Panel, ZCA1 GRB-S (C1), Antibody Array Cancer Detection – Phase II, August
2006	Chairman, National Cancer Institute Special Emphasis Review Panel, ZCA1 SRRB-U (C1)
2005	Chairman, National Cancer Institute Special Emphasis Review Panel, Cancer Sample Preparation / Cancer Detection
2004	Chairman, National Cancer Institute Special Emphasis Review Panel, Innovative Toxicology Models for Drug Evaluation
2002	Chairman, National Cancer Institute Special Emphasis Panel, Innovative Toxicology
1998	Member, Grant Review Committee, Italian Minister for Universities and Research
1996	Member, Biological and Biomedical Review Committee, State of Texas
1994	Member, Ad Hoc Study Section, Alternative Models for Toxicological Studies, (NCI / NIEHS)
1993—1994	Ad Hoc Member, Metabolic Pathology Study Section, NIH
1993	Chairman, Ad Hoc Study Section, Small Grants for Nonmammalian Models, NIH
1992	Member, Ad Hoc Study Section, Viral Oncogenesis and Pathogenesis of Hepatic Cancer, NIH
1992	Member, Ad Hoc Study Section on Aquatic Toxicology, NIH
1992	Chairman, Biological Models and Materials Research Program, National Center for Research Resources, Department of Health and Human Services
1991	Member, Ad Hoc Study Section on Role of Cell Proliferation in Liver Carcinogenesis, NIH
1991	Member, Ad Hoc Study Section on Aquatic Toxicology, NIH

Institutional Service:

2014 – 2015	Member, School of Public Health, Research Committee, Bloomington, Indiana
2014 – 2015	Member, Search and Screen Committee, Senior Faculty Search School of Public Health, Bloomington, Indiana
2013 – 2014	Chair, Faculty Search and Screen Committee, School of Public Health, Department of Environmental Health, Bloomington, Indiana
2012 – 2014	Member, School of Public Health, Budgetary Affairs Committee, Bloomington, Indiana
2012 – present	Member, School of Public Health, Promotion and Tenure Review Committee, Bloomington, Indiana
2012 – present	Networks, Complex Systems & Health PDT Committee, Indiana University, Bloomington, Indiana
2012 – present	Member, School of Public Health ,Research Space Committee, IU Bloomington
2012 – present	Member, School of Public Health , Outstanding Early Career Scholar Award Committee, IU Bloomington
2012 – present	Member, School of Public Health, School Promotion to Full Professor Committee, IU Bloomington,
2012 – present	Alternate, School of Public Health Faculty Council, , IU Bloomington

2012 – present	Member, Environmental Health Chair Search Committee, School of Public Health, IU Bloomington
2012	Member, Epidemiology Search Committee, School of Health, Physical Education, and Recreation, Indiana University, Bloomington, Indiana
2011	Member, Senior Associate Dean Search Committee, School of Health, Physical Education, and Recreation, Indiana University, Bloomington, Indiana
2011	Chair, Epidemiology Search Committee, School of Health, Physical Education, and Recreation, Indiana University, Bloomington, Indiana
2010 –present	Member, Lab Animal Resources (LAR) Fiscal Oversight Committee, IU Bloomington
2010- 2012	Member, SPH Epi-Biostat Cluster Faculty Recruitment, School of Public Health
2010 -2011	Chair, Department of Environmental Health , HPER , Indiana University Bloomington, IN
2010	The Advisory Committee (AC) to the Anthropological Center for Training and Research on Global Environmental Change (ACT), Indiana University
2008 – Present	Member/ Executive Committee, Center for Environmental Sciences, Indiana University, Bloomington, Indiana
2008 – present	Co Director, Environmental Genomics Consortium, Indiana University, Bloomington, Indiana
2008 – 2010	Program Leader, Molecular and Environmental Carcinogenesis, IU Simon Cancer Center, Indiana University School of Medicine, Indianapolis, Indiana
2008	Chair, Molecular Carcinogenesis Search and Screen Committee, Indiana University Cancer Center, Indianapolis, IN
2008	Member, Indiana University CTSI: Accelerating Clinical and Translational Research Grant Review Committee
2008	Member, Behavioral Science Search and Screen Committee, Department of Public Health, Indiana University School of Medicine
2008	Member, Algal Toxicology Search and Screen Committee, Department of Earth Sciences, Indiana University
2007	Member, Center for Earth and Environmental Science Search and Screen Committee, Indiana University
2007	Chair, Indiana State Toxicology Department Director Search and Screen Committee, Indiana University School of Medicine
2007—2009	Chair, Center for Environmental Health Search and Screen Committee, Indiana University School of Medicine
2007	Chair, Neurotoxicological Sciences Search and Screen Committee, Indiana University School of Medicine
2007	Member, Committee to identify public health concerns with confined/concentrated animal feeding Operations (CAFOs), Purdue University, Department of Animal Sciences
2006- 2011	Director, Oxidative Stress Core CTSI, Indiana University, Bloomington, Indiana
2006—2007	Member, Social Assets and Vulnerabilities Indicators (SAVI) Research Advisory Committee, The Polis Center, Indiana University
2006—2007	Member, Breast Cancer Faculty Search Committee, Indiana University Cancer Center
2006—2007	Associate Director, Indiana University Cancer Center, Bloomington Campus
2006—2010	Member, Laboratory Animal Resource Center (LARC) Advisory Committee, Indiana University School of Medicine
2006	Organizer and Co-Leader of Indiana University and Purdue University Retreat on Cancer Prevention and Control, September
2006	Reviewer for the IUPUI Research Support Fund Grant (RSFG) Mechanism, Indiana University
2006	IU School of Medicine Laboratory Animal Resource Center Advisory Committee
2006 – 2010	Director, Center for Environmental Health, Indiana University School of Medicine, Indianapolis, Indiana
2005 – 2009	Associate Director, Indiana University Cancer Center, Indiana University School of Medicine, Indianapolis, Indiana
2005 – 2010	Adjunct Professor of Emergency Medicine, Indiana University School of Medicine, Indianapolis, Indiana
2004 – 2010	Member, Center for Earth and Environmental Science, Indiana University ~ Purdue University,

	Indianapolis, Indiana
2001—2010	Member, Biohazard Committee, Indiana University, Indianapolis, Indiana
2000 – 2003	Faculty Member, Graduate Program in Medical Neurobiology, Indiana University School of Medicine, Indianapolis, Indiana
1999—2010	Member, Environmental Health Concentration Curriculum Review Committee, Master of Public Health Program, Indiana University
1998—2010	Member, Master of Public Health Concentration Coordinating Committee, Indiana University
1996—1997	Member, Advisory Board Center for Earth and Environmental Science, IUPUI
1994—2000	Member, Pharmacology and Toxicology Executive Committee, Indiana University School of Medicine, Indianapolis, Indiana
1993—1994	Chairman, Raymond Paradise Symposium Committee, Department of Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, Indiana
1993—1999	Member, Pharmacology and Toxicology Development Committee, Indiana University School of Medicine, Indianapolis, Indiana
1992—Present	Alternate Member, Institutional Review Board, Indiana University School of Medicine, Indianapolis, Indiana
1992—1997	Member, Laboratory Animal Facility Advisory Board, Indiana University School of Medicine, Indianapolis, Indiana
1992—1993	Member, Raymond Paradise Symposium Committee, Department of Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, Indiana
1992—1993	Member, Search and Screen Committee for Chairman of Geology, Indiana University, Indianapolis, Indiana
1989—1991	Member, LCME Subcommittee on Research, Medical College of Ohio
1989—1991	Member, Flow Cytometer Research Committee, Medical College of Ohio, Toledo, Ohio
1989 - 1991	Adjunct Associate Professor of Toxicology, University of Toledo, College of Pharmacy, Toledo, Ohio
1988 - 1991	Associate Professor, School of Allied Health, Medical College of Ohio, Toledo, Ohio
1987 - 1991	Adjunct Professor, Center for Photochemical Green State University, Bowling Green, Ohio
1987—1991	Course Coordinator, Pathology Course for Physical Therapy Students, Medical College of Ohio, Toledo, Ohio
1986—1988	Member, Search Committee for Physiology Chairman, Medical College of Ohio, Toledo, Ohio
1985—1991	Department of Pathology Research Committee, Medical College of Ohio, Toledo, Ohio
1985—1991	Medical School Admissions Interviewer, Medical College of Ohio, Toledo, Ohio
1984—1985	Secretary, Faculty Senate, Medical College of Ohio, Toledo, Ohio
1983—1984	Faculty Senate Representative, Medical College of Ohio, Toledo Ohio
1981	Adjunct Faculty Member, W. Alton Jones Cell Science Center, Lake Placid, New York
1980 - 1982	Instructor, Department of Pathology, Medical College of Ohio, Toledo, Ohio
1980—1991	Library Committee, Medical College of Ohio, Toledo, Ohio

Editorial Boards:

2014 - 2016	Editor-in-Chief, HESI Publications
2008—present	Editorial Board, Toxicology
2005—2008	Editor- in-Chief, Toxicologic Pathology
2005—Present	Associate Editor, The Scientific World (TSW) Toxicology
1997—2004	Associate Editor, Toxicological Sciences
1998—2003	Editorial Board, Toxicologic Pathology
1998—2002	Editorial Board, Cell Biology and Toxicology
1992—1999	Editorial Board, Journal of Toxicology and Environmental Health
1997—1999	Editorial Board, International Journal of Toxicology
1992—1997	Associate Editor, IN VITRO, Cellular and Developmental Biology

1991—1997 Carcinogenesis Section Editor, Journal of the American College of Toxicology
1990—1997 Associate Editor, Journal of the American College of Toxicology

BIBLIOGRAPHY

Summary

Google Scholar 63 manuscripts with 40 or more citations
Web of Science citations

Manuscripts noted	237
Times cited	6446
Average citations per manuscript	27.20
h-index	52
Citations	10533
i10-index	157

Highly Cited Researchers in 2014 for 2002-2012; (highlycited.com) (one of 133 in pharmacology and toxicology)

MANUSCRIPTS:

1. **Klaunig, J.E.**, Koepp, S., McCormick, J. (1975). Acute Toxicity of a Native Mummichog Population (*Fundulus heteroclitus*) to Mercury. Bulletin of Environmental Contamination and Toxicology, 14(5), 534-536.

2. Doyle, M., Koepp, S., **Klaunig, J.E.** (1976). Acute Toxicological Response of the Crayfish (*Orconectes limosus)* to Mercury. Bulletin of Environmental Contamination and Toxicology, 16, 422-424.

3. Lipsky, M.M., **Klaunig, J.E.,** Hinton, D.E. (1978). Comparison of the Acute Response to Polychlorinated Biphenyl in Liver of Rat and Channel Catfish: A Biochemical and Morphologic Study. Journal of Toxicology and Environmental Health, 4(1), 107-121.

4. Hinton, D.E., **Klaunig, J.E.**, Lipsky, M.M. (1978). PCB-Induced Alterations in Teleost Liver: A Model for Environmental Disease in Fish. Marine Fisheries Review, 49, 47-50.

5. **Klaunig, J.E.**, Lipsky, M.M., Trump, B.F., Hinton, D.E. (1979). Biochemical and Ultrastructural Changes in Teleost Liver Following Subacute Exposure to PCB. Journal of Environmental Pathology and Toxicology, 2(4), 953-963.

6. Lipsky, M.M., Hinton, D.E., Goldblatt, P.J., **Klaunig, J.E.**, Trump, B.F. (1979). Iron Negative Foci and Nodules in Safrole-Exposed Mouse Liver Made Siderotic by Iron-Dextran Injection. Pathology Research and Practice, 164(2), 178-185.

7. Lipsky, M.M., Hinton, D.E., **Klaunig, J.E.**, Goldblatt, P.J., Trump, B.F. (1980). Gamma Glutamyl Transpeptidase in Safrole-Induced, Presumptive Premalignant Mouse Hepatocytes. Carcinogenesis, 1, 151-156.

8. Hinton, D.E., **Klaunig, J.E.**, Jack, R.M., Lipsky, M.M., Trump, B.F. (1981). Evaluation of the Channel Catfish *Ictalurus punctatus* (Rafinesque) as a Test Species in Chemical Carcinogenesis Studies. In Vitro, Journal of the American Society of Testing and Materials, 737, 226-238.

9. Lipsky, M.M., Hinton, D.E., **Klaunig, J.E.**, Trump, B.F. (1981). Biology of Hepatocellular Neoplasia in the Mouse. I. Histogenesis of Safrole-Induced Hepatocellular Carcinoma. Journal of the National Cancer Institute, 67(2), 365-376.

10. Lipsky, M.M., Hinton, D.E., **Klaunig, J.E.**, Goldblatt, P.J., Trump, B.F. (1981). Biology of Hepatocellular Neoplasia in the Mouse. II. Sequential Enzyme Histochemical Analysis of BALB/c Mouse Liver during Safrole-Induced Carcinogenesis. Journal of National Cancer Institute, 67(2), 377-392.

11. Lipsky, M.M., Hinton, D.E., **Klaunig, J.E.**, Trump, B.F. (1981). Biology of Hepatocellular Neoplasia in the Mouse. III. Electron Microscopy of Safrole-Induced Hepatocellular Adenomas and Hepatocellular Carcinomas. Journal of National Cancer Institute, 67(2), 393-405.

12. **Klaunig, J.E.**, Goldblatt, P.J., Hinton, D.E. Lipsky, M.M., Chacko, J., Trump, B.F. (1981). Mouse Liver Cell Culture. I. Hepatocyte Isolation. In Vitro, 17(10), 913-925.

13. **Klaunig, J.E.**, Goldblatt, P.J., Hinton, D.E., Lipsky, M.M., Chacko, J., Trump, B.F. (1981). Mouse Liver Cell Culture. II. Primary Culture. In Vitro, 17(10), 926-934.

14. Stoner, G.D., Babcock, M.S., Cothern, G.A., **Klaunig, J.E.**, Gunning, W.T. III, Knipe, S.M. (1982). Transformation of Rat Esophageal Epithelial Cells with N-nitrosobenzylmethylamine. In Vitro, Carcinogenesis, 3(6), 629-634.

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297. **Klaunig, J.E.** (2008). Oxidative Stress & Cancer. Indiana University Simon Cancer Center Clinical Research Office Employee Training. Indianapolis, IN.

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331. Wang Z., MacGregor, J.A., Gollapudi, B.B., **Klaunig, J.E.** (2014). Evaluation of Biomarkers of Inflammation, Oxidative Stress and Cell Proliferation in the Lungs of Mice Exposed via Inhalation to Vanadium Pentoxide. Proceeding of The 9th International Vanadium Symposium. June 29th to July 2nd, 2014 Padova Italy.

332. Agnew, M.A., Wang, Z., **Klaunig, J.E.** (2014). Investigation of the Mechanism by Which 1,3-Dichloropropene Induces Pulmonary Tumors in Male Mice. *Ohio Valley Society of Toxicology Annual Meeting*. (2014, Sept.).

333. Li, X., Wang, Z., Wu, Q., **Klaunig, J.E.** (2014). Examination of the mode of action of mouse liver tumor induction by organochlorine insecticides. *Ohio Valley Society of Toxicology Annual Meeting*. (2014, Sept.).

334. Liu, Y., Wang, Z., Fly, A.D., **Klaunig, J.E.** (2014). The effect of green tea consumption on oxidative stress in smokers and non-smokers. *Ohio Valley Society of Toxicology Annual Meeting*. (2014, Sept.).

335. Wu, Q., Wang, Z., Li, X., **Klaunig, J.E.** (2014). The role of nuclear receptors constitutive androstane receptor and pregnane X receptor in dieldrin-induced liver tumors in mouse. *Ohio Valley Society of Toxicology Annual Meeting*. (2014, Sept.).

336. **Klaunig, J.E.** and Apte, U. (2015). New Horizons in Chemical Carcinogenesis: Advances in Mode of Action and Mechanism of Cancer Pathogenesis. The Toxicologist 144(1), 1. 54th Annual Society of Toxicology Meeting.

337. Gosink, M., Jiang, Z., **Klaunig, J.E.**, Mager, D.L., Tsinoremas, Wang, Z. (2015). Induction of Endogenous Retroelements As a Mechanism for Mouse-Specific Drug-Induced Carcinogenicity. The Toxicologist 144(1), 351. 54th Annual Society of Toxicology Meeting.

338. Wang, Z., Li, X., Neal, B., Lamb, J.C., **Klaunig, J.E.** (2015). The Nuclear Receptor Constitutive Androstane Receptor (CAR) Is Essential for Toxaphene-Induced Liver Tumorigenic Response in Mice. The Toxicologist 144(1), 503. 54th Annual Society of Toxicology Meeting.

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340. Dragan, Y., **Klaunig, J.E.** (2015). The Future of Carcinogenicity Testing. The Toxicologist 144(1), 520. 54th Annual Society of Toxicology Meeting.

341. Liu, Y., Wang, Z., Fly, A.D., **Klaunig, J.E.** (2015). Green Tea Consumption Reduces Oxidative DNA Damage and Lipid Peroxidation in Smokers and Non-smokers. Experimental Biology Society Program. Boston, MA (2015, April).

342. Elser, B., Li, X., Wang, Z., **Klaunig, J.E.** (2016). Mechanism of 1,3-Dichloropropene (1,3-D) Induced Liver Tumors in Rats. 55th Annual Society of Toxicology Meeting. New Orleans, LA (2016, March).

343. Liu, Y., Fly, A., Wang, Z., **Klaunig, J.E.** (2016). The Effect of Green Tea Extract on Working Memory in Healthy Women. 55th Annual Society of Toxicology Meeting. New Orleans, LA (2016, March).

344. Li, S., We, Q., Wang, Z., **Klaunig, J.E.** (2016). Mode of Action of PFOA Induced Liver and Pancreatic Acinar Cell Tumors in Rats. 55th Annual Society of Toxicology Meeting. New Orleans, LA (2016, March).

345. Chowdhury, A., Arnold, L.L., Dodmane, P.R., Pennington, L., Wang, Z., **Klaunig, J.E.** et al. (2016). The Effects of Polyhexamethylene Biguanude (PHMB) on Rat Liver. 55th Annual Society of Toxicology Meeting. New Orleans, LA (2016, March).

346. Huges, B.J., Reichard, J., Haber, L., **Klaunig, J.E.**, Fenner-Crisp, P., Busch, J. (2016). Evaluation of Chemically-Induced Choline Deficiency as the Mode of Action (MOA) for Diethanolamine-Induced Mouse Liver Tumors. 55th Annual Society of Toxicology Meeting. New Orleans, LA (2016, March).

347. Fu, X., Sluka, J.P., Clendenon, S., Glazier, J.A., Wang, Z., **Klaunig, J.E.** … (2016). An in-Silico Model of Xenobiotic Distribution and Metabolism in a Simulated Mouse Hepatic Lobule. Experimental Biology (2016, April).

348. Liu, Y., Fly, A., Wang, Z., **Klaunig, J.E.** (2016). Monitoring Clinical Characteristics and Lifestyle Factors to Reduce Confounding in Studies of Peripheral Vascular Function. Experimental Biology Society Program. San Diego, CA (2016, April).

349. Fu, X., Sluka, J., Clendenon, S., Glazier, J., Ryan, J., Dunn, K., Wang, Z. and **Klaunig, J.E.** (2016). Spatio-temporal Model of Zenobiotic Distribution and Metabolism in an in Silico Mouse Liver Lobule. APS Meeting (2016, March).

350. Wang, Z., Li, X., Liu, Y., Elser, B.A., **Klaunig, J.E.** (2016). Investigation of the Mode of Action underlying Triclosan Liver Tumors in Mouse. Laboratory of Investigative Toxicology and Pathology, Indiana University Bloomington, IN 47408.

351. Li, X., Wang, Z., **Klaunig, J.E.** (2016). Investigation of the Mechanisms of Perfluorooctanoic Acid (PFOA) Induced Pancreatic Acinar Cell Tumor in Rats. Laboratory of Investigative Toxicology and Pathology, Indiana University Bloomington, IN 47408.

352. Pu, X. Z., Wang, Z. M., Zhou, S. Y., **Klaunig, J. E.** (2016). Protective Effects of Antioxidants on Acrylonitrile-Induced Oxidative Stress in Female F344 Rats. *Environmental Toxicology, 31*(12), 1808-1818. doi:10.1002/tox.22182

353. Li, X., Wang, Z., **Klaunig, J.E.** (2017). Role of microRNAs in Nonalcoholic Fatty Liver Disease. 56th Annual Society of Toxicology Meeting. Baltimore, MD (2017, March).

354. Fu, X., Wang, Z., Hagar, A., **Klaunig, J.E.** (2017). A Mechanistic Computational Model Predicting Tumor Incidence in a Virtual Liver. 56th Annual Society of Toxicology Meeting. Baltimore, MD (2017, March).

STUDENTS:

Graduate Students:
J.E. Klaunig: Major Advisor

Doctoral Students

Name	Degree	Period of Training	Location
1. Janine R. Shulok	(Ph.D.)	1982-1987	Medical College of Ohio (Pathology)
2. Bruce A. Barut	(Ph.D.)	1982-1988	Medical College of Ohio (Pathology)
3. Randall J. Ruch	(Ph.D.)	1984-1988	Medical College of Ohio (Pathology)

4. Christopher Weghorst	(Ph.D.)	1985-1989	Medical College of Ohio (Pathology)
5. Xie Jian	(Ph.D.)	1987-1990	Medical College of Ohio (Pharmacology)
6. Lydia D. Schafer	(Ph.D.)	1989-1991	Medical College of Ohio (Pathology)
7. Karen Steinmetz	(Ph.D.)	1991-1996	Indiana University (Pharm. /Toxicology)
8. Stephen Bachowski	(Ph.D.)	1992-1995	Indiana University (Pharm. /Toxicology)
9. Kyle Kolaja	(Ph.D.)	1992-1996	Indiana University (Pharm. /Toxicology)
10. Craig Zwickl	(Ph.D.)	1992-1998	Indiana University (Pharm. /Toxicology)
11. Jiazhong Jiang	(Ph.D.)	1995-1998	Indiana University (Pharm. /Toxicology)
12. Jason Isenberg	(Ph.D.)	1994-1999	Indiana University (Pharm. /Toxicology)
13. Elizabeth Julian	(Ph.D.)	1996-1999	Indiana University (Neurobiology)
14. Jiazhong Zhang	(Ph.D.)	1996-2000	Indiana University (Pharm. /Toxicology)
15. Kristin Horn	(Ph.D.)	2001-2004	Indiana University (Neurobiology)
16. Minerva Mercado	(Ph.D.)	2005-2009	Indiana University (Pharm. /Toxicology)
17. Aditya Bansal	(Ph.D.)	2006- 2010	Indiana University (Biochemistry)
18. Solomon Owumi	(Ph.D.)	2006- 2010	Indiana University (Toxicology)
19. Yinbin Liu	(Ph.D)	2011-present	Indiana University (Environmental Health)
20. Rami Saadeh	(Ph.D)	2011-present	Indiana University (Environmental Health)
21. Shawn (Xilin) Li	(Ph.D.)	2014-present	Indiana University (Environmental Health)
22. John Fyolek	(Ph.D.)	2014-present	Indiana University (Environmental Health)

Master's Students

1. Norman E. Schultz	(M.S.)	1985-1988	Medical College of Ohio (Pathology)
2. Patrick J. Schafer	(M.S.)	1985-1988	Medical College of Ohio (Pathology)
3. Joseph Siglin	(M.S.)	1986-1990	Medical College of Ohio (Pathology)
4. James Hartnett	(M.S.)	1988-1990	Medical College of Ohio (Pathology)
5. Michael Merceica	(M.S.)	1989-1991	Medical College of Ohio (Pathology)
6. Jerald Wilkinson	(M.S.)	1989-1991	Medical College of Ohio (Pathology)
7. Luann Schutrum	(M.S.)	1989-1991	Medical College of Ohio (Pathology)
8. John McKenzie	(M.S.)	1989-1992	Medical College of Ohio (Pathology)
9. Rusty Rush	(M.S.)	1989-1993	Medical College of Ohio (Pathology)
10. Cao Jin	(M.S.)	1989-1994	Indiana University (Pharm. /Toxicology)
11. Jason Johnson	(M.S.)	1993-1996	Indiana University (Pharm. /Toxicology)
12. Cynthia Ketcham	(M.S.)	1994-1997	Indiana University (Pharm. /Toxicology)
13. Jamie Bunting	(M.S.)	1995-1997	Indiana University (Pharm. /Toxicology)
14. Rod Thompson	(M.S.)	1994-1998	Indiana University (Pharm. /Toxicology)
15. Liu Yang	(M.S.)	1997-2000	Indiana University (Pharm. /Toxicology)
16. Hongwei Xue	(M.S.)	1998-2000	Indiana University (Pharm. /Toxicology)
17. Angela Knapp Siesky	(M.S.)	1999-2001	Indiana University (Pharm. /Toxicology)
18. Jeffery Lafferty	(M.S.)	2000-2002	Indiana University (Pharm. /Toxicology)
19. Jinfeng Meng	(M.S.)	1997-2001	Indiana University (Pharm. /Toxicology)
20. Stacey Corthals	(M.S.)	2001- 2004	Indiana University (Pharm. /Toxicology)
21. David Smith	(M.S.)	2001- 2003	Indiana University (Pharm. /Toxicology)
22. Lee Stone	(M.S.)	2003-2006	Indiana University (Pharm. /Toxicology)
23. Dante Villaviencencio	(M.S.)	2003-2006	Indiana University (Pharm. /Toxicology)

Postdoctoral Fellows, Visiting Scientists, Research Scientists

J.E. Klaunig: Advisor

1. Ann Kwiatowski, Ph.D.	1993-1996
2. Saw Yin OH, Ph.D.	1995-1996

3. Gulam Kalimi, Ph.D.	1994-1997
4 Lisa Kamendulis, Ph.D.	1996 -2004
5 David Ackley, Ph.D.	1997-1999
6. JuLee Kaster, Ph.D.	1996-1999
7. JJ Park, Ph.D.	1998-2001
8. BaoGuo Ren, M.D.	1998-2001
9. Guimeng Li, M.D.	1999-2000
10. Barbara Gottschling, DVM, Ph.D.	1999-2001
11. Zhenquan Jiao, Ph.D.	2001-2003
12. Patrick Klein, Ph.D.	2001-2003
13. Xinzhu Pu, Ph.D.	2003-2006
14. Solomon Owumi	2006-2007
15. Binu Philip, Ph.D.	2006-2008
16. Zemin Wang, Ph.D.	2007-2010
17. Shaoyu Zhou, Ph.D.	2008-2010
18. Yuhui (Sherry) Shi, Ph.D.	2008-2009
19. Raj Sellamuthu, Ph.D.	2011-2012
20. Zemin Wang , MD, Ph.D	2012-2014
21. Shaoyu Zhou, MD, PhD,	2012-2014
22. Jianyong Zhang, Ph.D.	2013-2014
23. Zuoqing Yuan, Ph.D.	2013-2014
24. Maud De Meyer, MS	2012-2014
25. Ebenezer Olatunde Farombi, Ph.D.	2014

Service on Graduate Committees:

Dominick Scaramuzzino (Ph.D.)	Medical College of Ohio
William Gunning (Ph.D.)	Medical College of Ohio
Swapna Mandal (Ph.D.)	Medical College of Ohio
Kallol Chadhuri (Ph.D.)	Medical College of Ohio
Salah Awad (Ph.D.)	Medical College of Ohio
Hong Xiang Zu (Ph.D.)	Medical College of Ohio
Norman Grimes (Ph.D.)	University of Toledo
Subhanker Bandyopadaya (Ph.D.)	Medical College of Ohio
Daniel Wojta (Ph.D.)	University of Toledo
Martha Moore (M.S.)	Medical College of Ohio
Melody Superczynski (M.S.)	Medical College of Ohio
Gabriela Rodwell (Ph.D.)	Medical College of Ohio
Elaine Daniel (Ph.D.)	Medical College of Ohio
Mary Jeanne O'Gara (Ph.D.)	Indiana University
Liu Yang (Ph.D.)	Indiana University
Zhang Peng (Ph.D.)	Indiana University
Stacy Corthals (Ph.D.)	Indiana University
Matthew Brittain (Ph.D.)	Indiana University
Natalia Van Duyn (Ph.D.)	Indiana University
Whitney Hornsby (Ph.D.)	Indiana University
Sylvanna Bielko (Ph.D.)	Indiana University
Aditya Bansal (Ph.D.)	Indiana University
Whitney Hornsby (Ph.D.)	Indiana University
Waleed Abdel-Aziz, (Ph.D.)	Indiana University
Yi-Chun Lin (Ph.D.)	Indiana University

Research Advisor (Medical Students):

Robert Perry	University of Maryland
John Del Valle	Medical College of Ohio
Lawrence Satkowiak	Medical College of Ohio
Christopher Krall	Medical College of Ohio
Deborah Lucas	Medical College of Ohio
Steven Knipe	Medical College of Ohio
Scott Lilly	Medical College of Ohio
Patrick Schafer	Medical College of Ohio
Timothy O'Donnell	Medical College of Ohio
Laura Barlow	Indiana University
Matthew Hufford	Indiana University
Sherry Pittman	Indiana University

Research Advisor (Undergraduate Students):

Rubina Dalal	Indiana University
Steve Coachys	Indiana University
Rebecca Little	Indiana University
Rae Coflin	Indiana University
Siar Ayoubi	Indiana University
Carleen James	Indiana University
Ralph Arrington	Indiana University
Celina Acuna	Indiana University
Emily Scott	Indiana University
Megan Agnew	Indiana University

Research Advisor (Herbert Summer Scholars Institute Program):

Teresa Demeritte	Jackson State University
Lashanna Johnson	Xavier University

Teaching Experience:

Course Title	Students	Participation
General Pathology	Medical Students	Lecturer in Cell Injury
		Lecturer in Carcinogenesis
		Lecturer in Environmental Pathology
General Pathology	Medical Students	Laboratory Instructor in Pathology
Oncology	Graduate Students	Lecturer in Chemical Carcinogenesis
General Pathology	Nursing Students	Lecturer in Cell Injury
		Lecturer in General Pathology
Cell Biology	Graduate Students	Lecturer
Methods in Tissue Culture	Graduate Students	Lecturer
Transmission Electron Microscopy.	Graduate Students	Lecturer
General Pathology	Physical Therapy Students	Lecturer in Cell Injury
		Course Director
Environmental Toxicology	Graduate Students	Lecturer and Course Director
Cellular and Molecular Toxicology	Graduate Students	Lecturer and Course Director
Medical Pharmacology	Medical Students	Lecturer in Principles of Toxicology
Research in Toxicology	Graduate Students	Lecturer and Course Director
Clinical/Forensic Toxicology	Graduate Students	Lecturer and Course Director
Cancer Chemoprevention	Graduate Students	Lecturer and Course Director
Chemical Carcinogenesis	Graduate Students	Lecturer and Course Director
Principles of Toxicology	Graduate Students	Lecturer and Course Director

Advanced Toxicology	Graduate Students	Lecturer and Course Director

IUBloomington
SPEA-E 625

INVITED SPEAKER

1979 "Human Hepatocyte Culture", National Cancer Institute, Bethesda, Maryland
1981 "Methods in Hepatocyte Culture", W. Alton Jones Science Center, Lake Placid, New York
1990 "Use of Small Fish Species in Toxicity and Carcinogenicity Testing", National Cancer Institute, Bethesda, Maryland
1982 "Studies on Nongenotoxic Carcinogenesis", Dept. of Biology, Bowling Green State University, Bowling Green, Ohio
1987 "Hepatic Toxicity and Carcinogenesis", School of Pharmacy, University of Toledo, Toledo, Ohio
1987 Chairman, "Oncogenesis" Session, Society of Toxicology 26th Annual Meeting
1988 Chairman, "Tumor Promotion" Poster/Discussion Session, Society of Toxicology 27th Annual Meeting
1988 "Modulation of Cell to Cell Communication in the Cancer Process", National Cancer Institute, Frederick, MD
1988 "Gap Junctions in Cancer", Dept. of Pathology, University of Maryland, Baltimore, Maryland
1988 "Role of Gap Junctional Intercellular Communication in the Stages of Carcinogenesis", Toxicology Program, School of Public Health, Johns Hopkins University, Baltimore, Maryland
1988 "Mechanisms of Nongenotoxic Carcinogenesis", Department of Pharmacology, Michigan State University, East Lansing, Michigan
1988 "Current Perspectives on Nongenotoxic Carcinogenesis", Toxicology Program, University of Illinois, Champaign, Illinois
1988 "Mechanisms of Chemical Carcinogenesis", Toxicology Department, General Motors Corporation, Detroit, Michigan
1988 "Gap Junction Modification in Nongenotoxic Carcinogenesis", Conference on Toxicological Implications of Gap Junctions, Michigan State University, East Lansing, Michigan
1988 "Cell to Cell Communication in Murine Hepatic Carcinogenesis", Conference on Mouse Liver Carcinogenesis, Austin, Texas
1988 "Mechanisms of Nongenotoxic Carcinogenesis", Dow Chemical Company, Midland, Michigan
1989 "Current Understanding of Chemically Induced Hepatic Cancer", University of Cincinnati, Cincinnati, Ohio
1989 "Studies on Nongenotoxic Carcinogenesis", Michigan Society of Toxicology Annual Meeting, Ann Arbor, Michigan
1989 "Role of Cell to Cell Communication in the Cancer Process", Fifth International Conference on Environmental Mutagens, Cleveland, Ohio
1989 "Effect of Nongenotoxic Carcinogens on Mouse Liver Proliferation", Conference on Role of Cell Proliferation in Carcinogenesis, Austin, Texas
1989 Chairman, "Hepatic Toxicity of Halogenated Hydrocarbon Mixtures" Poster/Discussion Session, Society of Toxicology, 28th Annual Meeting
1990 "Nongenotoxic Carcinogenesis and Cell to Cell Communication", U.S. EPA Conference on Role of Gap Junctions in Toxicology, EPA, Washington, DC
1990 "Intercellular Communication in the Endothelium", Endothelial Cell Injury Symposium, Toledo, Ohio
1991 "Altered Expression of Gap Junctions During Mouse Liver Tumorigenesis", 3rd Workshop on House Liver Tumors, ILSI Health and Environmental Sciences Institute, Arlington, Virginia
1991 "Role of Cell Proliferation in Mouse Liver Carcinogenesis", Smithkline Beecham, King of

Prussia, Pennsylvania

1992 "Gap Junctions", Chemical Manufacturers Association, Washington, DC

1992 "Role of Gap Junctional Communication in Hepatocarcinogenesis", Summer Toxicology Forum, Aspen, Colorado

1992 "Modulation of Cell Replication in Hepatic Tumorigenesis", Ohio Valley Society of Toxicology Indianapolis, Indiana

1992 "Role of Cell Proliferation in Non-Genotoxic Carcinogenesis in the Liver", Midwest Regional Chapter of the Society of Toxicology, Abbott Park, Illinois

1992 "Pharmacology of Alcohol", Indiana Excise Police, Indiana Law Enforcement Academy, Plainfield, Indiana

1992 "Modulation of Gap Junction Gene Expression During Mouse Liver Tumor Carcinogenesis", 4th Workshop on Mouse Liver Tumors, ILSI Health and Environmental Sciences Institute, Washington, D.C.

1992 "Principles of Toxicology", Indiana Environmental Management Group, Indianapolis, Indiana

1993 "Mechanisms of Hepatocarcinogenesis", Medical Science Program, Indiana University Bloomington, Indiana

1993 "Hepatic Tumor Promotion: Possible Mechanisms", Department of Pharmacology and Toxicology, School of Pharmacy, Purdue University, West Lafayette, Indiana

1993 "Pharmacology and Toxicology of Alcohol in Driving While Intoxicated", Indiana Prosecuting Attorney's Council, Indianapolis, Indiana

1993 "Applications of Primary Hepatocyte Cultures for the Study of Chemically Induced Cancer", Tissue Culture Association Meeting, San Diego, California

1993 "Mechanisms of Nongenotoxic Carcinogenesis", Society of Toxicology, 32nd Annual Meeting, New Orleans, Louisiana

1993 "Novel Mechanisms of Hepatic Cell Injury", American Society for Pharmacology and Experimental Therapeutics, San Francisco, California

1993 "Toxicology", Indiana State Police, Indiana Law Enforcement Academy, Plainfield, Indiana

1993 "Modulation of Cell to Cell Communication in Hepatic Tumor Promotion", International Conference on Carcinogenesis and Risk Assessment, Austin, Texas

1994 "Chemical Carcinogenesis", Department of Biology, Purdue University, Indianapolis, Indiana

1994 "Non-genotoxic Mechanisms in Hepatocarcinogenesis", Department of Pharmacology & Toxicology, Michigan State University, East Lansing, Michigan

1994 "Studies on Dieldrin Induced Mouse Liver Cancer: Implication to Risk Assessment", U.S. Environmental Protection Agency, Washington, D.C.

1994 "Mechanisms of Dieldrin Induced Mouse Hepatocarcinogenesis", Mechanisms of Toxicity and Carcinogenesis 9th Aspen Cancer Conference, Aspen, Colorado

1994 "Current Understanding of the Role of Oxidative Stress in Peroxisome Proliferation Induced Hepatic Cancer", Research Update on Peroxisome Proliferation, International Life Sciences Institute, Society of Toxicology, 33rd Annual Meeting, Dallas, Texas

1995 "Role of Oxidative Stress in Mouse Liver Carcinogenesis", 5th Workshop on Mouse Liver Tumors, International Life Sciences Institute, Washington, D.C.

1996 "Mechanism of Rodent Liver Carcinogenesis", Procter and Gamble Co. Cincinnati, Ohio

1995 "Potential Mechanisms of Non-Genotoxic Carcinogenesis:, Johns Hopkins University, Baltimore, Maryland

1995 "Diagnosis, Treatment and Removal of Lead/Other Heavy Metals" Indiana Public Health Foundation, Inc., Indianapolis, Indiana

1996 Chairman, "Cell Proliferation: Biological Effects and Carcinogenic Risk Assessment Symposium", International Congress of Toxicology, Seattle, Washington

1994 "Oxidative Stress in Nongenotoxic Carcinogenesis", International Congress of Toxicology, Seattle, Washington

1995 "Pharmacology and Toxicology of Alcohol (Ethanol) as it Relates to Impaired Driving", Governor's Council on Dangerous and Impaired Driving, Indianapolis, Indiana

1995 "Everything You Ever Wanted to Ask a Toxicologist about Alcohol, Drugs and Driving",

Prosecuting Attorneys Council, Winter Conference, Indianapolis, Indiana

1995 "Blood Alcohol Content: 0.10 v. 0.08", Senate Committee on Criminal Justice Issues, Indianapolis, Indiana

1995 "Modulation of Intercellular Communication & Oxidative Stress as Important Mechanistic Endpoints in Toxicity", DuPont Co., Newark, Delaware

1995 "Mechanisms of Non-Genotoxic Carcinogenesis", Michigan State University, Lansing, Michigan

1996 "Toxicology and the Law", Health Law Colloquium, Indiana University School of Law, Indianapolis, Indiana

1996 "The Expert Witness", Indiana Continuing Legal Education Forum, Indianapolis, Indiana

1996 "Toxicology", Indiana Judicial Conference, Nashville, Indiana

1996 "State Department of Toxicology", Indiana Association of Chiefs of Police, Clarksville, Indiana

1997 "Oxidative Damage and Tumor Promotion", 1996 BELLE Conference on Toxicological Defense Mechanisms and the Shape of Dose-Response Relationships, Research Triangle Park, North Carolina

1996 "Role of Oxidative Stress in Chemically Induced Cancer", 10th International Conference on Carcinogenesis and Risk Assessment, Austin, Texas

1996 "Forensic Toxicology", Indiana Prosecuting Attorneys Council, Winter Conference, Indianapolis, Indiana

1996 "Application of Gap Junctional Intercellular Communication Modification in Toxicology and Cancer Assessment" Chairman, Session, Toxicology Forum, Aspen, Colorado

1997 "Species Specific Modulation of Hepatic Gap Junctions", Toxicology Forum, Aspen, Colorado

1996 "Updates on Acrylonitrile Cancer Mechanism Studies", Acrylonitrile Group Annual Meeting, Orlando, Florida

1996 "Alcohol and Drug Testing", Indiana Law Enforcement Academy, Plainfield, Indiana

1997 "Chemical Carcinogenesis", Mid-American Toxicology Course, Kansas City, Kansas

1997 Chairman, "Growth Regulation" Session, Mechanisms of Susceptibility to Mouse Liver Carcinogenesis Conference, Chapel Hill, North Carolina

1998 "Role of Oxidative Stress in Mouse Liver Tumorigenesis", Mechanisms of Susceptibility to Mouse Liver Carcinogenesis Conference, Chapel Hill, North Carolina

1997 Prosecutor's Breath Test School

1997 "Mechanistic Basis Supporting Validity of Methodology: Mechanisms of Transformation", COVANCE Syrian Hamster Embryo Cell Morphological Transformation System Workshop, Vienna, Virginia

1997 "Research Perspective: Chemopreventative", COVANCE Syrian Hamster Embryo Cell Morphological Transformation System Workshop, Vienna, Virginia

1997 "Tea Consumption and Oxidative Stress in Smokers and Non-Smokers: Preliminary Results from U.S. and China Studies", Tea and Health Advisory Board Meeting, Englewood Cliffs, New Jersey

1998 North Carolina Society of Toxicology, RTP, North Carolina

1998 Exxon Biomedical Sciences, Newark, New Jersey

1998 "Oxidant Induced Carcinogenesis", Chemical Safety for the 21st Century, 8th International Congress of Toxicology, Paris, France

1998 "Oxidative Stress in Non-Genotoxic Carcinogenesis", Society of Toxicology Symposium, Seattle, Washington

1998 "Clinical Studies", Second International Scientific Symposium on Tea and Human Health, Washington, D.C.

1998 "Acetonitriles – Group Discussion", Workshop on Mechanistic Research of Disinfection By-Products", International Life Sciences Institute, Health and Environmental Sciences Institute, Washington, D.C.

1998 "Health Effects of Smoking and Tobacco", Tobacco in America: Lungs, Liars, and Lawyers, Indiana University-Purdue University, Indianapolis, Indiana

1998 "Cellular Effects of Acrylonitrile in Astrocytes", Toxicology Forum, Washington, D.C.

1998 "Mechanisms of Nongenotoxic Carcinogenesis", North Carolina Society of Toxicology, Annual Meeting, Research Triangle Park, North Carolina

1999 "Anti-Carcinogenic Actions of Food Components", Central Indiana District Dietetic Association Conference, Indianapolis, Indiana

1999 "Principles of Toxicology", Department of Hazardous Materials Management/Local Emergency Planning Committee, Marion County Health Department, Indianapolis, Indiana

1999 "Mechanisms of Nongenotoxic Carcinogenesis", University of Kentucky, Toxicology Graduate Program, Lexington, Kentucky

1999 "Indiana Alcohol and Drug Testing", Indiana Prosecuting Attorneys Council, Indianapolis, Indiana

1999 "Environmental Toxicology", School of Public and Environmental Affairs, Indiana University, Indianapolis, Indiana

1999 Department of Hazardous Materials Management/ Local Emergency Planning Committee, Marion County Health Dept. "Principles of Toxicology"

1999 "Oxidative Stress and Sensitive Clinical Biomarkers", Toxicology Advisory Committee Symposium, St. Louis, Missouri

1999 "Sufficiency of Evidence in Drug Testing in Schools", Wayne Township School District, Indianapolis, Indiana

1999 "Science Advisory Board's review of the Draft Chloroform Risk Assessment and Related Issues in The Proposed Cancer Risk Assessment Guidelines", US EPA, Washington, D.C.

2000 "Mechanisms of Nongenotoxic Carcinogenesis", Toxicology Scholars Colloquium, University of Connecticut, Storrs, Connecticut

2001 "Mode of Cancer Action in the Rat Brain", US AN Group/CEFIC/Japan AN Group-Strategic Planning Meeting

2002 "Properly Identifying Students Who are Under the Influence of Drugs," Indiana School Boards Association, School Law Seminar, Indianapolis, Indiana

2003 "Smoke-Free presentation" Tobacco Free IUPUI Coalition, Indiana University School of Medicine, Department of Public Health, October 15, Indianapolis, Indiana

2003 "Prosecutor Mentor Program – Operating While Intoxicated", Indiana Prosecuting Attorneys Council, Indianapolis, Indiana

2003 "Carcinogenesis" The American Chemical Society Presents courses on Chemical Mechanisms in Toxicology November 6-7. Philadelphia, PA

2003 "Forensic Toxicology" Purdue University, School of Health Sciences, November 18, Lafayette, Indiana

2004 "Mechanisms of Carcinogenicity and Toxicity of Acrylamide" Division of Agricultural and Food Chemistry of the American Chemical Society, Spring National Meeting, Anaheim, CA.

2004 "Oxidative Stress in Drug Induced Hepatoxicity", the 3rd Annual Symposium on Drug-Induced Hepatotoxicity, September 20-21. Philadelphia, PA

2004 "Human Relevance of Rodent Liver Tumors" Toxicology Forum, July 22, Aspen, CO
October 21st Meeting, University of Delaware, Newark, DE

2004 "Cell Surface and Nuclear Receptor Biology", Mechanisms of Toxicity Conference, July 25 Colby College, Waterville, Maine

2004 "Oxidative Stress in Humans", Endocrine Research Conference, Indiana University School of Medicine, Indianapolis, Indiana.

2004 "SHE: A Cell Transformation Assay, Historical Perspectives, Techniques and Application." Environmental Mutagen Society 35th Annual Meeting October 2-6, Pittsburgh, PA

2004 "Non-Genotoxic Carcinogens and the SHE Cell Assay" Genetic Toxicology Association, October, University of Delaware, Newark, DE.

2004 "Role of the Kupffer Cell in Hepatic Toxicity", Borenger Ingelheim, December, Hartford, CT.

2005 "Human Relevance of Rodent Liver Tumors", Health and Environmental Science Institute Annual Meeting, January, New Orleans, LA

2005 "Environmental Carcinogenesis", School of Public and Environmental Affairs at Indiana University, February, Bloomington, Indiana

2005 Merck Lecture "Mechanisms of Liver Carcinogenesis", Department of Pathology, College of

Veterinary Medicine, University of Illinois, May, Champaign –Urbana, IL

2005 "Understanding the Mode of Action Approach used by the US EPA Human Health Assessment Group", November, Dow Agro Sciences, Indianapolis, IN

2006 "Mode of Action of Acrylonitrile", February, The Toxicology Forum Annual Meeting, Washington, DC

2006 Chairman, Society of Toxicology Annual Meeting, March, Symposium "Role of the Kupffer Cell in Mediating Hepatic Toxicity and Carcinogenesis"

2006 "Health Effects of Algal Toxins", April, Emerging Issues in Source Water Management and Strategies for Addressing New Drinking Water Regulations Conference, IUPUI Indianapolis, Indiana

2006 "Oxidative Stress and Cancer", June, Indiana University Cancer Center Grand Rounds, IUPUI Indianapolis, Indiana

2006 "Mechanisms of Cancer and Chemoprevention", September, Indiana University and Purdue University Retreat on Cancer Prevention and Control, West Lafayette, Indiana

2006 "Mechanisms of Hepatic Carcinogenesis", September, Tenth Annual John Doull Toxicology Symposia, Kansas University Medical Center, Kansas City, Kansas.

2007 "PPAR Agonist Project Committee Report", January, 2007 HESI Annual Meeting, Cancun, Mexico.

2008 "Perchloroethylene (PERC): Mouse Liver Tumors and PPAR Alpha-related Responses Relevance for Man", January, 32nd Annual Winter Meeting of the Toxicology Forum, Washington, DC.

2007 "Mechanisms of Cancer Chemoprevention: Studies with Green and Black Tea," March, Bindley Oncological Science Center, Purdue University, Lafayette, Indiana

2007 "Mechanisms of Cancer Chemoprevention: Relevance to Human Risk assessment," March, 46th Annual Society of Toxicology, Charlotte, North Carolina

2007 "Endocrine Disruptors and their effect on Children's Health" April, 2007 Summit on Children's Health and the Environment, Indiana University, Indianapolis, Indiana.

2007 "Oxidative Stress as a Mechanism of Carcinogenicity," May, AN Group, Alexandria, Virginia

2007 "Oxidative Stress as a Common Event in Rodent Hepatic Carcinogenesis," July, International Congress of Toxicology, Montreal, Canada

2007 "Chemistry and Toxicology of Acrylamide," August, American Chemistry Society Annual Meeting, Boston, Massachusetts

2007 "Pharmacology and Toxicology – Prosecution of Operating While Intoxicated", September, Trial Advocacy Course, Indiana Prosecuting Attorneys Council, Indianapolis, Indiana

2007 "Application of Mode of Action and the Human Relevance Framework for Hepatocellular Neoplasms", September, Joint European Congress of Toxicologic Pathology and International Federation of Societies of Toxicologic Pathologists Congress of Toxicologic Pathology 2007, Basel, Switzerland

2007 "Cell Death in Response to Toxicants: Role of Cellular Environment: Kupffer Cells and the Hepatic Response to Toxicants", October, Eurotox 2007, Amsterdam, Netherlands.

2007 "Toxicology of Veterinary Oncology", October, Veterinary Oncology Models Platform, Biocrossroads Fairbanks Foundation Initiative, West Lafayette, Indiana.

2007 "Oxidative Damage in Cancer", November, Cancer Prevention, Chemoprevention and Control 2nd Annual Faculty Retreat, West Lafayette, Indiana.

2007 "Application of the Human Relevance Framework to the Analysis of Rodent Tumor Data" November, American College of Toxicology Meeting, Charlotte, North Carolina.

2007 "PPAR Alpha Agonist and Hepatic Cancer: Overview of Mode of Action in the Mouse". December. Society of Risk Analysis 2007 Annual Meeting. San Antonio, Texas.

2007 Acrylonitrile's Modes of Carcinogenic Action (MOA) in the Rat and Mouse and Their Relevance to Human Risk Assessment, Acrylonitrile working group, Washington DC

2009 "A Human Relevance Framework for Human Risk Assessment: A Case Study with Dioxins and PCBs Based on Mode of Action," January, Toxicology Forum, Washington, D.C.

2010 "The Role of Oxidative Stress and Oxidative Damage in Chemical Carcinogenesis," April 2008

Toxicology and Risk Assessment Conference (TRAC), Cincinnati, Ohio

2008 "Indiana Drinking Water Quality," March 2008, WIBC Radio Interview

2008 "Modifiers and Modulators of Chemical Carcinogenesis." Benjamin Trump Lecture: July 2008. 23rd Aspen Cancer Conference: Mechanisms of Toxicity, Carcinogenesis, Cancer Prevention and Cancer Therapy. Aspen, Colorado

2008 "Chemically Induced Brain Tumors: Role of Oxidative Stress," November 2008, Brain Tumor Working Group, Indiana University, Indianapolis, Indiana

2008 "Nongenotoxic agents: studies with 2-butoxyethanol," December 2008, Society of Toxicology Contemporary Concepts in Toxicology (CCT) Workshop – Hemangiosarcoma in Rodents: Mode-Of-Action Evaluation and Human Relevance, Arlington, Virginia

2009 "Multistage hepatic carcinogenesis: Modulators and modifiers," February 2009, Department of Pharmacology & Toxicology, Michigan State University, East Lansing, Michigan

2009 "PPAR: Relevance of rodent tumors to man." March 2009. British Toxicology Society Annual Congress 2009, University of Warwick, United Kingdom

2009 "Oxidative stress/damage in carcinogenesis." June 2009. Society of Toxicologic Pathology, 28th Annual Symposium, Washington, D.C.

2009 Hemangiosarcomas in Rodents – Relevance to Humans?" July 2009. Toxicology Forum, Aspen, Colorado.

2009 "Implication of Recent Data on Benzene Risk Assessment. Weight of Evidence for Mode of Action/Human Relevance and Dose-Response." September 2009. Benzene 2009: Health Effects and Mechanisms of Bone Marrow Toxicity Implications for t-AML and the Mode of Action Framework, Munich, Germany.

2009 Genotoxicity and Carcinogenicity of Acrylamide**."** September 2009. EUROTOX: 46th Congress of the European Societies of Toxicology, Dresden, Germany.

2010 A Human Relevance Framework for Human Risk Assessment: A Case Study with Dioxins and PCBs Based on Mode of Action," January, Toxicology Forum, Washington, D.C.

2011 "The Role of Oxidative Stress and Oxidative Damage in Chemical Carcinogenesis," April 2011 Toxicology and Risk Assessment Conference (TRAC), Cincinnati, Ohio.

2012 Oxidative Stress in Toxicology June 2012 Annual Symposium of Meeting of Society of Toxicological Pathology, Boston, MA.

2012 Epidemiology, toxicology and risk assessment, September 2012. HESI. Evaluating Causality in Epidemiologic Studies Workshop, USEPA RTP NC.

2012 Current Understanding of the Mode of Action of Non-genotoxic Hepatocarcinogens." October, CRX Biosciences Symposium, Cambridge, MA.

2013 "Toxicology and Evidentiary Issues in Impaired Driving Cases." July. American Bar Association, Webinar.

2013 "Adverse Versus Adaptive Effects in Toxicology; Implications for Human Risk." 39th Annual Summer Meeting of The Toxicology Forum, Aspen, CO.

2016 "The Role of Endogenous Oxidative Stress in Understanding and Assessing the Mode of Action of Exogenous Exposure to Toxic Agents." 55th Society of Toxicology Annual Meeting, New Orleans, LA.

2016 "PPARalpha-dependent Mode of Action for Liver Tumor Induction." Human Relevance of Rodent Liver Tumors, Arlington, VA.

2016 "Oxidative stress, carcinogenesis, and chemoprevention." Indiana Clinical and Translational Sciences Institute Purdue Retreat, West Lafayette, IN.

RESEARCH INTERESTS:

Environmental Toxicology and Carcinogenesis
Mechanisms of Cellular Toxicology and Pathology
Liver Toxicology and Carcinogenesis
Role of Free Radical Oxygen Species and Oxidative Stress in Toxicology and Carcinogenesis

Role of Gap Junction Mediated Intercellular Communication in Hepatic Toxicity and Carcinogenesis
Role of Cell Proliferation and Growth Factors in Hepatic Tumorigenesis
Cancer Chemoprevention
Effects of Alcohol and Drugs on Impaired Driving
High throughput toxicological evaluation

January 14, 2015

Michael T. Kleinman

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PERSONAL:

Born: [redacted]
Residence: [redacted]
Citizen: [redacted].

EDUCATION:

1965:
B.S. (Chemistry) Brooklyn College, City University of New York

1971:
M.S. (Chemistry/Biochemistry) Polytechnic Institute of Brooklyn

1977:
Ph.D. (Environmental Health Sciences) New York University

Honors:
University Extension Teacher of the Year (2001).
National Academy of Science - Co-Principal Investigator- Strategies for Protection of Deployed Forces from Chemical and Biological Weapons (1998-2000).
UCI Committee of 1000 Award for Research (1997)
National Cancer Institute - Graduate Assistantship through the NYU Environmental Cancer Center (1973-1977)
New York State Regents Scholarship (Awarded 1959)

PROFESSIONAL EXPERIENCE:

Current Active Research Support:
5 Grants or Contracts with Direct Funding totaling $850,000/year

2011 – Present
Adjunct Professor (Recalled), Department of Medicine, School of Medicine, University of California, Irvine. Co-Director: Air Pollution Health Effects Laboratory and Faculty Member of the UCI Center for Occupational and Environmental Health and the UCI Chao Family Comprehensive Cancer Center.

1992- 2011
Adjunct Professor, Department of Medicine, School of Medicine, University of California, Irvine. Co-Director: Air Pollution Health Effects Laboratory and Faculty Member of the UCI Center for Occupational and Environmental Health and the UCI Chao Family Comprehensive Cancer Center.

2011- Present:
Adjunct Professor (WOS) UC Irvine Program in Public Health

1989-1992:
Associate Professor in Residence, Department of Community and Environmental Medicine, College of Medicine, University of California, Irvine with a Joint Appointment (WOS) in Program in Social Ecology.

1982-1989:
Associate Adjunct Professor, Department of Community and Environmental Medicine.

1982-1998:
Faculty Associate, Public Policy Research Organization, University of California, Irvine.

1982:
Visiting Professor, Department of Community and Environmental Medicine, College of Medicine, University of California, Irvine.

1981-1982:
Visiting Lecturer, Department of Engineering, University of California, Irvine.

1977-1982:
Director, Aerosol and Analytical Laboratory, Environmental Health Service, Rancho Los Amigos Hospital, Downey, California.

1974-Present:
Environmental and Occupational Health Consultant.

1972-1977:
Associate Research Scientist, Institute of Environmental Medicine, New York University Medical Center.

1966-1972:
Physical Scientist - Environmental Studies Division, U.S. Atomic Energy Commission Health and Safety Laboratory, New York, New York.

1963-1966:

Chemist - Radiochemistry Division, U.S. Atomic Energy Commission Health and Safety Laboratory, New York, New York.

1961-1963:
Chemist, Electroplating Department, Spectranome Plating Company, New York, New York.

MAJOR RESEARCH INTERESTS:

My research program examines the mechanisms by which inhaled toxic chemicals, alone and in mixtures, interfere with the cardiopulmonary system and with respiratory system defenses, using both laboratory animals and human subjects. These studies focus on the role of oxidative stress induced by endogenous and exogenous factors in the development and exacerbation of chronic diseases such as asthma, cardiopulmonary injury and exacerbation of lung and heart diseases.

An important aspect of this research is the integration of physiological factors that can affect dose with health effects research results from human clinical and laboratory animal experiments to better assess exposures and dose-response relationships. These relationships can be translated into improved assessments of risks to humans exposed to toxic environmental agents. As part of this work, I have developed and validated mathematical models for determining distribution of inhaled toxic agents at respiratory tract target sites following exposures under various levels of exertion and physical stress.

PROFESSIONAL SOCIETY MEMBERSHIPS:

Air and Waste Management Association
American Association for the Advancement of Science
American Association for Aerosol Research
American Chemical Society
New York Academy of Sciences
Sigma Xi
Society of Toxicology
ACGIH (formerly the American Association of Governmental Industrial Hygienists)

PROFESSIONAL ACTIVITIES:

2015-Present:
Chair Elect, American Chemical Society Orange County Section

2013-Present:
Chair: State of California Scientific Review Panel for Toxic Substances.

2014-2015:
Chair: American Chemical Society, Orange County Section.

2011-Present:
Member: Board of Scientific Counselors: Centers for Disease Control and Prevention - ATSDR/NCEH

2011-Present:
Member: ACGIH Threshold Limits Value Committee – Chemical Substances Subcommittee

2010-2011:
Vice-Chair Inhalation and Respiratory Section, Society of Toxicology

2004 to Present:
Panel Member: U.S. Environmental Protection Agency Science Advisory Board Clean Air Scientific Advisory Committee

2004 to 2007:
Board of Directors: American Association for Aerosol Research

1995 to 2013:
Member: Scientific Review Committee (Ad Hoc)- National Institute of Environmental Health Sciences.

1998 to Present:
Faculty member and Investigator: Southern California Particle Center.

2001 to 2004
National Academy of Sciences/National Research Council – Committee Member: Naval Forces' Defense Capability Against Chemical and Biological Warfare Threats.

1997 to 2000:
National Academy of Sciences/National Research Council Principal Investigator: Strategies to Protect Deployed Forces from Chemical and Biological Weapons.

1987-1992:
Member: Health Effects Review Committee, US EPA. (This study section reviews extramural grant applications).

2007-Present:
Member: Publications Committee - Journal of the Air and Waste Management Association.

1996-1999:
Chair, Effects Division, Air and Waste Management Association (formerly the Air Pollution Control Association.

1991-2010:
Member, Intersociety Committee on Methods of Air Sampling and Analysis. The committee edits and publishes a compendium of analytical and air sampling methods that is well recognized both nationally and internationally.

1981-1991:

Chairman, Trace Metals Subcommittee #6, Intersociety Committee on Manual Methods for Ambient Air Sampling and Analysis. The subcommittee published standard methods for analysis of trace elements in air samples and human tissues using methods such as atomic absorption spectrophotometry, neutron activation analysis and X-ray fluorescence analysis.

1982-1988:
American Public Health Association Committee on Techniques for Biological Monitoring. Chair of Subcommittee on publication of biomonitoring methods. The committee reviewed, compiled and published a volume on biological monitoring techniques and considerations related to quality assurance and accreditation for laboratories performing such analyses.

1981-1990:
Secretary Technical Program Committee for Annual Meeting of the Air Pollution Control Association. This committee oversaw the development of the technical programs to be presented at annual meetings.

1984-1990:
Toxicology Committee, American Industrial Hygiene Association. This committee reviewed and issued health guides for chemicals used in the occupational environment, and planned technical sessions to be presented at annual meetings.

1985-1988:
Member, Advisory Council, South Coast Air Quality Management District, El Monte, California. The committee met monthly in response to requests from the district to provide advice on management, strategies, and health consequences of air pollution in the South Coast Air Basin of Southern California.

1987:
Special Reviewer, Toxicology Study Section, National Institutes of Health, Bethesda, Maryland. Member of an *ad hoc* study section to review a center grant.

1987:
Reviewer, Acid Aerosols Issues, Environmental Protection Agency, Research Triangle Park, North Carolina. Reviewed a draft Criteria Document and presented research data at workshops convened jointly by the U.S. Environmental Protection and the National Institute of Environmental Health Sciences.

1987-1982:
Member, Radiation Safety Committee, Rancho Los Amigos Hospital. Met monthly to review protocols involving human exposure to radiation from external or internal sources and participated in reviews of safe practices related to the use and storage of radioisotopes.

CONSULTANCIES:
I have also served as a consultant to Federal, State and local governments, have consulted for private industries and provided expert testimony on exposure and health effects associated with toxic chemicals and criteria air pollutants.

INTERNATIONAL ACTIVITIES:

Member of the Inhalation Toxicology Advisory Committee to Health and Welfare, Canada (the Canadian agency which has responsibilities similar to those of the U.S. Public Health Service and the U.S. Environmental Protection Agency). This *ad hoc* committee meets annually to plan research strategies, provides workshops on inhalation methods and members provide consultation on an as needed basis. (1989-2002).

Member of the advisory committee for a workshop on developing an Air Quality Index for Delhi, India (2000).

Guest researcher: Inhalation toxicology at the National Institute of Environmental and Public Health, the Netherlands.

TEACHING:

University Courses Taught:

CEM 206 Target Organ Toxicology, 1991-Present.

CEM 207 Design of Toxicological Experiments, 1991-2014.

SE224 Environmental Health Sciences II Spring Quarter 2000.

Engineering 434.32 Atmospheric Pollution in the 1990's: Ozone Acid Toxics and the Greenhouse Effect, Spring 94 (UCLA)

CEM X492.41 Biological Principles of Environmental Management (Spring 1985 to 2012).

Engineering 267 A,B, "Industrial Processes" (Graduate, 3 hr. lecture, 1 quarter per year, 1985).

Engineering 434.1 Environmental Toxicology, Summer 94 (UCLA)

Co-Instructor, Preventive Medicine, (College of Medicine Second Year Curriculum.) Presented lectures on environmental contamination and exposures in the workplace, 1983-1990.

Engineering 266 A,B,C, "Industrial Hygiene" (Graduate, 3 hr. lecture, 3 quarters per year, 1983-1984).

Presented section on Environmental Hazards and Disease: Air Pollution, for 5th Quintile course in Community and Environmental Medicine, July 1983.

Presented lecture on Effects of Air Pollution for CEM X491.2, Work Physiology, Residency Program in Occupational Medicine, November 1982.

Co-Instructor, Engineering 264K, "Fundamentals of Air Pollution Aerosol Technology (Graduate, 3 hr. lecture, one quarter per year, 1979, 1981).

Biological Sciences 199, Undergraduate Research – One to two students per year. Students trained include: David Ligh*, Alan Spilkin, Daniel Gittelson, Theo Luu, Danny Tehary*, Hyon Lee, Bette McMahon, Carmen Domingo, Michael Dam, Shirley Edelman, Joe Daigneault, Huy Nguyen, Chris Bui, Amine Rakab*, Rhoda Peng, Elmer Alma (Hughes Fellow), Loren Launen, Eleanor Kelly, Ahn Do, Jackie Kang, Binh Tran, Sylvia Rivera, Deisy Mendoza, Bhumika Kapadia* , David Herman*, Mariyah Saiduddin*
(Note: * = awarded Undergraduate Research Fellowships for 199 project).

Graduate Thesis Committees:

Advisor for doctoral Graduate Sharon McCarthy (Social Ecology), "A study of the relationship between indoor residential and community air pollution: The role of building ventilation as it affects human exposures." Ph.D. awarded 1987.

Advisor for doctoral Graduate David Scherer, "Exposure estimation and acute respiratory health effects of airborne particles." Ph.D. awarded 1989.

Doctoral Committee Member for doctoral graduate Tina Leakakos (Environmental Toxicology), "The Impact of toxic insult on DNA maintenance methylation." Ph.D. awarded 1992.

Advisor for Doctoral Graduate William Lambert (Social Ecology), "Carbon Monoxide and Cardiac Health" Ph.D. Awarded 1994.

Advisor for MS Graduate Eric Moline (Environmental Toxicology) "On the Cloud Behavior of Side Stream Tobacco Smoke." MS Awarded 1998.

Advisor for MS Janet Richard (Environmental Engineering, CSU Long Beach) "What Effect will the Proposed Airport at MCAS El Toro have on Ground-Level Ozone Production?" MS Awarded 2000.

Advisor for Doctoral Graduate Michael Oldham (Environmental Toxicology) Ph.D. awarded 2001.

Advisor for MS Graduate Evan Cohen (Environmental Toxicology) 2002.

Advisor for MS Graduate Christopher Heinrich (Environmental Toxicology) 2004.

Advisor for MS Graduate Wayne Chang (Environmental Toxicology) 2004.

Advisor for Doctoral Graduate Amber Rinderknecht (Social Ecology - Environmental Analysis and Design). Graduated Ph.D. 2005.

Advisor for Doctoral Graduate Patrick Pham (Environmental Health, Science and Policy) Graduated PH.D. 2005.

Advisor for MS Graduate Tack Lam (Environmental Toxicology) 2005.

Advisor for Doctoral Graduate Ali Hamade (Environmental Toxicology). Ph. D. awarded 2006.

Advisor for Doctoral Graduate Loyda Mendez (Environmental Toxicology). Ph.D. awarded 2006.

Advisor for MS Graduate Huihui Li (Environmental Toxicology) 2007.

Advisor for Doctoral Candidate Glenn Gookin (Environmental Toxicology) Advanced to Candidacy, June 2008.

Advisor for MS Graduate Karina Salazar (Environmental Toxicology).

Advisor for MS Candidate Michael MacKinnon (Environmental Toxicology).

Advisor for Ph.D. Candidate Andrew Keebaugh (Environmental Toxicology).

Advisor for Ph.D. Student David Herman (Environmental Health Sciences).

UNIVERSITY SERVICE:

2008-Present
Member: Radiation Safety Committee

2014-Present:
Faculty Search Committee-Environmental Toxicology

2006-2008:
Faculty Search Committee-Environmental Toxicology

1999 - 2009:
Chair: Executive Committee, University of California Toxic Research and Teaching Program.

2001-2002:
Member: LCME Review Preparation Committee on Academic Programs

1996-1999:
Member: IRB Human Subjects Research Committee. Committee meets monthly to review all requests to perform research involving human subjects and to ascertain the scientific relevance of the research and to assure that the interests of the subjects are adequately safeguarded.

1996-1998:

Member: IBC Biosafety Committee. Committee reviews protocols involving materials that are considered to have bio-safety implications.

1983 - 2001:
Interview Subcommittee of the Admissions committee, California College of Medicine, UC Irvine. (Interviewed approximately 3 medical school admissions candidates per year.)

1991-1993:
Ad-hoc committee to evaluate environmental concerns at Las Lomas Housing. Members met with representatives of Environmental Health and Safety and assisted in developing a sampling strategy and performing and evaluating air monitoring efforts to determine whether or not effluents from a nearby dump site were affecting housing residents.

PUBLICATIONS:

PEER REVIEWED JOURNAL ARTICLES

1. Bogen, D. and Kleinman, M.T. Improved determination of microgram amounts of lead in food with radioactive tracers. Analyst, 92:611, 1967.

2. Volchok, H.L. and Kleinman, M.T. Sr-90 yield of the 1967 Chinese thermonuclear explosion. J. Geophysical Research, 74:1694, 1969.

3. Kleinman, M.T. and Volchok, H.L. Radionuclide concentrations in surface air: direct relationship to global fallout. Science, 166:376, 1969.

4. Volchok, H.L., Knuth, R. and Kleinman, M.T. The respirable fraction of Pu at Rocky Flats. Health Physics, 23:395-396, 1972.

5. Kleinman, M.T., Kneip, T.J. and Eisenbud, M. Seasonal patterns of airborne particulate concentrations in New York City. Atmospheric Environment, 10:9-11, 1976.

6. Bernstein, D.M., Kleinman, M.T., Kneip, T.J., Chan, T.L. and Lippmann, M. A high-volume sampler for the determination of particle size distributions in ambient air. J. Air Pollution Control Association, 26:1069-1072, 1976.

7. Kleinman, M.T., Bernstein, D.M. and Kneip, T.J. An apparent effect of the oil embargo on total suspended particulate matter and vanadium in New York City air. J. Air Pollution Control Assoc., 27:65-67, 1977.

8. Leaderer, B.P., Bernstein, D.M., Daisey, J.M., Kleinman, M.T., Kneip, T.J., Knutson, E.O., Lippmann, M., Lioy, P.J., Rahn, K.A., Sinclair, D., Tanner, R.L. and Wolff, G.T. Summary of the New York Summer Aerosol Study (NYSAS). J. Air Pollution Control Assoc., 28:322-327, 1978.

9. Kleinman, M.T., Leaderer, B., Tomczyk, C. and Tanner, R. Inorganic nitrogen compounds in New York City air. Annals of the New York Academy of Sciences, 322:115-124, 1979.

10. Lippmann, M., Kleinman, M.T., Bernstein, D.M., Wolff, G.T. and Leaderer, B.P. Size-mass distributions of the New York summer aerosol. Annals of the New Academy of Sciences, 322:29-44, 1979.

11. Wolff, G.T., Lioy, P.J., Bernstein, D.M. and Kleinman, M.T. Characterization of aerosols upwind of New York City, I. Transport. Annals of the New York Academy of Sciences, 322:57-71, 1979.

12. Lioy, P.J., Wolff, G.T., Rahn, K.A., Bernstein, D.M. and Kleinman, M.T. Characterization of aerosols upwind of New York City, II. Aerosol characterization. Annals of the New York Academy of Sciences, 322:73-85, 1979.

13. Daisey, J.M., Leyko, M.A., Kleinman, M.T. and Hoffmann, E. The nature of the organic fraction of the New York summer aerosol. Annals of the New York Academy of Sciences, 322:125-141, 1979.

14. Avol, E.L., Jones, M.P., Bailey, R.M., Chang, N.N., Kleinman, M.T., Linn, W.S., Bell, K.A. and Hackney, J.D. Controlled exposures of human volunteers to sulfate aerosols. American Review of Respiratory Disease, 120:319-328, 1979.

15. Kleinman, M.T. The use of long term and seasonal trends of elemental compounds as an aid to the identification of sources of airborne pollutants. Annals of the New York Academy of Sciences, 338:116-125, 1980.

16. Kleinman, M.T., Pasternack, B.S., Eisenbud, M. and Kneip, T.J. Identifying and estimating the relative importance of sources of airborne particulates. Environmental Science and Technology, 14:62-65, 1980.

17. Kleinman, M.T., Eisenbud, M., Lippmann, M. and Kneip, T.J. The use of tracers to identify sources of airborne particles. Environ. International, 4:53-62, 1980.

18. Kleinman, M.T., Linn, W.S., Bailey, R.M., Jones, M.P. and Hackney, J.D. Effect of ammonium nitrate aerosol on human respiratory function and symptoms. Environ. Res., 21:317-326, 1980.

19. Linn, W.S., Jones, M.P., Bailey, R.M., Kleinman, M.T., Spier, C.E., Fischer, D.A. and Hackeny, J.D. Respiratory Effects of Mixed Nitrogen Dioxide and Sulfur Dioxide in Human Volunteers under Simulated Ambient Exposure Conditions. Env. Res., 22:431-438, 1980.

20. Kleinman, M.T., Bailey, R.M., Chang, Y.C., Clark, K.W., Jones, M.P., Linn, W.S. and Hackney, J.D. Exposures of human volunteers to a controlled atmospheric mixture of ozone, sulfur dioxide and sulfuric acid. J. Amer. Ind. Hyg. Assoc., 42:61-69, 1981.

21. Kleinman, M.T., Linn, W.S., Bailey, R.M., Anderson, K.R., Whynot, J.D., Medway D.A. and Hackney, J.D. Human exposure to ferric sulfate aerosol: Effects on pulmonary function and respiratory symptoms. J.

Amer. Ind. Hyg. Assoc., 42:298-304, 1981.

22. Linn, W.S., Kleinman, M.T., Bailey, R.M., Medway, D.A., Spier, C.S., Whynot, J.D., Anderson, K.R. and Hackney, J.D. Human respiratory responses to an aerosol containing zinc ammonium sulfate. Env. Res., 25:404-414, 1981.

23. Kneip, T.J., Mallon, R.P. and Kleinman, M.T. The impact of changing air quality on multiple regression models for coarse and fine particle fractions. Atmos. Envir., 17:299-304, 1983.

24. Kleinman, M.T., Bailey, R.M., Linn, W.S., Anderson, K.R., Whynot, J.D., Shamoo, D.A. and Hackney, J.D. Effects of 0.2 ppm nitrogen dioxide on pulmonary function and response to bronchoprovocation in asthmatics: J. Toxicology and Environmental Health, 12:815-826, 1984.

25. Kleinman, M.T. Sulfur dioxide and exercise: Relationship between response and absorption in upper airways. J. Air Pollution Control Association, 34:32-37, 1984.

26. Kleinman, M.T., Bailey, R.M., Linn, W.S., Whynot, J.D., Anderson, K.R., Venet, T.G. and Hackney, J.D. Respiratory responses of humans exposed to an aerosol/gas pollutant mixture: Multivariate contrast of a complex atmosphere to clean air and sodium chloride aerosol controls: J. Applied Toxicol., 4:170-175, 1984.

27 Kleinman, M.T., Phalen, R.F., Mannix, R.C., Azizian, M. and Walters, R. Influence of Fe and Mn ions on the incorporation of radioactive $^{35}SO_2$ by sulfate aerosols. Atmos. Environ., 19:607-610, 1985.

28. Kleinman, M.T., Bailey, R.M., Whynot, J.D., Anderson, K.R., Linn, W.S. and Hackney, J.D. Controlled exposure to a mixture of SO_2, NO_2 and particulates: effects on human pulmonary function and respiratory systems: Arch. Environ. Health, 40:197-201, 1985.

29. Bhalla, D.K., Mannix, R.C., Kleinman, M.T. and Crocker, T.T. Relative permeability of nasal, tracheal and bronchoalveolar mucosa to macromolecules in rats exposed to ozone: J. Toxicol. and Environ. Health, 17:269-283, 1986.

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32. Mautz, W.J., Kleinman, M.T., Phalen, R.F. and Crocker, T.T. Effects of

exercise exposure on toxic interactions between inhaled oxidant and aldehyde air pollutants. J. Tox. and Environ. Health, 25:165-178, 1988.

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37. Kleinman, M.T. Effects of ozone on pulmonary function: The relationship of response to effective dose. J. Exposure Analysis and Environmental Epidemiology, 1:309-325, 1991.

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47. Kleinman, M.T., Bhalla, D.K., Mautz, W.J. and Phalen, R.F. Cellular and Immunologic Injury with PM10 Inhalation. Inhal. Tox., 7: 589-602, 1995.

48. Watson, J.G., Thurston, G., Frank, N., Lodge, J.P., Weiner, R. and Kleinman, M.T. 1995 Critical Review Discussion-Measurement methods to determine compliance with ambient air quality standards for suspended particles. J. Air and Waste Management Assoc., 9:666-684, 1995.

49. Wong, C.G., Bonakdar, L., Mautz, W.J. and Kleinman, M.T. Chronic inhalation exposure to ozone and nitric acid elevates stress-inducible heat shock protein 70 in the rat lung. Toxicology 107:111-119, 1996.

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52 Hallman, M., Waffarn, F., Bry, K. Turbow, R. Kleinman, M.T., Mautz, W.J., Rasmussen, R.E., Bhalla, D.K. and Phalen, R.F. Surfactant dysfunction after inhalation of nitric oxide. J. Appl. Physiol. 80:2026-2034, 1996.

53 Leaf, D. A. and Kleinman, M.T. Urban ectopy in the mountains: Carbon monoxide exposure at high altitude. Arch. Environ. Health 51: 283-290, 1996.

54 Leaf, D. A., Kleinman, M. T., Hamilton, M. and Barstow, T.J. The effect of exercise intensity on lipid peroxidation. Med. and Sci. in Sports and Exercise 29:1036-1039, 1997.

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59 Kleinman, M.T., Mautz, W.J. and Bjarnason, S.J. Adaptive and non-adaptive responses in rats exposed to ozone, alone and in mixtures with acidic aerosols. Inhal. Toxicol. 11:249-264, 1999.

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62 Kleinman, M.T. Health Effects of Carbon Monoxide, in Environmental Toxicants, 2nd Edition M. Lippmann, ed. Van Nostrand Reinhold, publishers, New York, Jan. 2000.

63 Michaels, R.A. and Kleinman, M.T. Dose-rate dependent health risks support control of one-hour airborne particle levels. Aerosol Sci. and Technol. 32:1-13, 2000.

64 Kleinman, M.T., Bufalino, C, Rasmussen, R. Hyde, D., Bhalla, D.K. and Mautz, W.J. Toxicity of chemical components of ambient fine particulate matter (PM2.5) inhaled by aged rats. J. Appl. Toxicol. 357-364, 2000.

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Inhal Toxicol; 12(Suppl 3):261-266, 2000.

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2. Kleinman, M.T. Chemical interactions in complex atmospheres and the effect on uptake of individual components by the lung. Proceedings of the 15th Conference on Environmental Toxicology, Dayton, Ohio, October, 1984.
3. Kleinman, M.T., Mautz, W.J., McClure, T.R., Mannix, R.C. and Phalen, R.F. Comparative effects of acidic and non-acidic multicomponent atmospheres on the lungs of rats exposed by inhalation. Proceedings of the 78th Annual Meeting of the Air Pollution Control Association, Detroit, Michigan, June, 1985.

4. Kleinman, M.T., McClure, T.R., Phalen, R.F. and Crocker, T.T. Effects of inhaled oxidant and acidic air pollutant combinations on nasal and tracheal tissues in exercising rats. Proceedings of the Sixth International Symposium on Inhaled Particles, Cambridge, England, 1985.

5. Kleinman, M.T. and Mautz, W.J. Respiratory tract uptake of inhaled automotive pollutants. Proceedings of the American Association for Aerosol Research, Albuquerque, NM, 1985.

6. Kleinman, M.T. and Mautz, W.J. Effects of exercise on respiratory tract dosimetry for inhaled gaseous pollutants, Proceedings of the 80th APCA Annual Meeting, 1987.

7. Kleinman, M.T. Upper airway scrubbing at rest and exercise, invited presentation, Conference on Susceptibility to Inhaled Pollutants, Williamsburg, VA, Sept. 29-Oct. 1, 1987.

8. Kleinman, M.T. Effects of short-term exposure to carbon monoxide in subjects with coronary artery disease, Proceedings of the 82nd Annual Meeting - Air and Wastes Management Association, Los Angeles, CA, 1989.

9. Kado, N.Y., Colome, S.D., Kleinman, M.T., Hsieh, D.P.H. and Jaques, P. PM10 associated mutagenic activity as an indicator of diverse biological activities of the particles. Presented at the 82nd Annual Meeting of the Air

& Waste Management Association, Anaheim, CA, 1989.

10. Kleinman, M.T. Ozone exposure and the relationship of dose to responses, Proceedings of an AWMA Specialty Conference - Total Exposure Assessment for Ozone - Las Vegas, Nevada November 28-30, 1989.

11. Kleinman, M.T., Bhalla, D.K., Ziegler, B., Evans, S., Walters, R. and McClure, T. Acute and subchronic effects of inhaled fine particles in ozone containing atmospheres, presented at AWMA Annual Meeting, Pittsburgh, PA, June 22-25, 1990.

12. Kleinman, M.T., Leaf, D, Kelly, E. and Colome, S.D. Effects of exposures to carbon monoxide at high altitude in sensitive subjects, AWMA Annual Meeting, Vancouver, British Columbia, June 22-25, 1991.

13. Lambert, W.E., Colome, S.D. and Kleinman, M.T. Carbon monoxide exposure patterns in Los Angeles among a high risk population, AWMA Annual meeting, Vancouver, British Columbia, June 22-25, 1991.

14. Shearer, D.F., Colome, S.D. and Kleinman, M.T. Exposure estimation and acute respiratory health effect of airborne particles, AWMA Annual Meeting, Vancouver, British Columbia, June 22-25, 1991.

15. Kleinman, M.T. and Bhalla, D.K., Effects of Diesel Exhaust and Oxidant Gases on Respiratory Defenses, Am. Rev. Respir. Dis. 145: A90, 1992.

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2. John, M.E. et al. Naval Forces Defense Capabilities against Chemical and Biological Warfare Threats, National Academies Press, Washington D.C. 2004.

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2. Bell, K.A., Avol, E.L., Bailey, R.M. and Kleinman, M.T. Design, operation and dynamics of aerosol exposure facilities for human subjects (Chapter 23), in Generation of Aerosols: Their Characteristics: Facilities for Exposure Experiments, K. Willeke, Editor, Ann Arbor Science Publishers, Ann Arbor, Michigan, 1980.

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4. Kneip, T.J. and Kleinman, M.T. Analysis of airborne particulates in the workplace and ambient atmospheres, in Cantle, J.E. (editor): Atomic Absorption Spectrophotometry, Amsterdam, Netherlands, Elsevier Scientific Publishing Company, 1982.

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6. Kleinman, M.T. and Linch, A.L. Quality Control laboratory-licensure and accreditation, in Methods for Biological Monitoring, T.J. Kneip and J.V. Crable, editors, American Public Health Association, Washington, D.C., pp 81-92, 1988.

7. Kleinman, M.T. Collection and Gas Chromatographic analysis of toxic substances in breath, in Methods for Biological Monitoring, T.J. Kneip and J.V. Crable, editors, American Public Health Association, Washington,

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8. Kleinman, M.T., Rhodes, J.R., Guinn, V.P. and Thompson, R.J. General atomic absorption procedure for trace metals in airborne material collected on filters, in Methods of Air Sampling and Analysis, J.P. Lodge, Jr., editor, Lewis Publishers, Inc., pp 608-618, 1989.

9. Kleinman, M.T., Courtney, W.J., Guinn, V.P., Rains, T.C., Rhodes, J.R. and Thompson, R.J. General method for preparation of tissue samples for analysis for trace metals, op. cit., pp 619-622, 1989.

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11. Rhodes, J.R., Kleinman, M.T., Thompson, R.J., Rains, T.C., Courtney, W.J. and Guinn, V.P. X-ray fluorescence spectrometry for multiclement analysis of airborne particulate and biological material, op. cit., pp 623-638, 1989.

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17. Hwang, H., Kloner, R.A., Dai, W., Simkhovich, B.Z., Kleinman, M.T., Poole, W.K. and McDonald, S.A. 2010 Isolated Heart Preparation, in Comprehensive Toxicology, 2nd Ed., Elsevier, New York, Charlene McQueen, Editor in Chief Vol. 6: 149-158.

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2. Kleinman, M.T. and Mautz, W.J. The effects of exercise on dose and dose distribution on inhaled automotive pollutants. Health Effects Institute,

Research Report Number 45, 1991.

3. Kleinman, M.T. Syracuse Research Report: Scientific basis of the Integrated Risk Information System Toxicological Review of Methyl Methacrylate. 1998

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EDUCATION

Doctor of Philosophy, Civil Engineering (transportation systems), University of Florida, 2016
Master of Science, Civil Engineering (transportation systems), Virginia Tech, 2013
Bachelor of Science, Civil Engineering, National Technical University of Athens, 2011

PROFESSIONAL EXPERIENCE

2017 – Present: **National Renewable Energy Laboratory**, Golden, CO
Postdoctoral Researcher, **Transportation and Hydrogen Systems Center**

- Connected & autonomous vehicles energy sensitivity analysis; CA zero emission vehicles mandate modeling and compliance projections; demand charges and existing electricity tariff structures review for charging stations; U.S. electric vehicle supply equipment deployment roadmap for ride hailing vehicle services.

2015 – 2016: **Oak Ridge National Laboratory,** Oak Ridge, TN
Graduate Research Assistant, Center for Transportation Analysis

- Market acceptance of advanced automotive technologies model validation; model for maximizing public chargers visibility, using urban off-street parking lot data for a subset of U.S. cities.

20014 – 2016: **University of Florida**, Gainesville, FL
Graduate Research Assistant, Civil Engineering (Transportation Institute)

- PhD Dissertation: "Socially Optimal Policies for Light-Duty Vehicle Electrification and Operations".
- Model to determine socially optimal electric driving ranges for plug-in hybrid electric vehicles under workplace charging availability; modeling framework for the replacement of conventional with battery electric vehicles from a societal perspective; rebates and charging infrastructure investment allocation that maximizes social welfare by promoting electric vehicles; cost-effective and eco-friendly plug-in hybrid electric vehicle charging management modeling framework and application to U.S. regions considering travel patterns heterogeneity.
- Cost-benefit analysis of adaptive traffic signal control (ATSC) for a statewide Florida Department of Transportation project, team leader of survey development and interview conduct; microscopic simulation for a corridor with ATSC and evaluation of travel time benefits.

2012 – 2013: **Virginia Tech**, Falls Church, VA
Graduate Research Assistant, Civil Engineering (Transportation Systems)

- M.Sc. Thesis: "Commute Travel Changes and Their Duration in Hurricane Sandy's Aftermath".
- Commute travel behavior modeling in Hurricane's Sandy post-disaster period for the New York City Metro Area using econometric models (binary logit and accelerated failure time models).

2012 – 2013: **Turner Fairbank Highway Research Center**, McLean, VA
Graduate Research Assistant, Office of Safety

- Simulation of alternative intersection design (e.g., mini-roundabouts)
- Naturalistic eye-tracking data analysis and mining to uncover drivers' distractions.

COMPUTER SKILLS

Python, SQL, MATLAB, arc/QGIS, Microsoft Office, Latex, STATA, JMP, GAMS, VISSIM, tableau

PUBLICATIONS

Kontou, E., Yin, Y., Lin, Z. and He, F., 2017. Socially Optimal Replacement of Conventional with Electric Vehicles for the U.S. Household Fleet. *International Journal of Sustainable Transportation*.
Kontou, E., Yin, Y. and Ge, Y., 2017. Cost-Effective and Eco-Friendly Plug-in Hybrid Electric Charging Management. In press at: *Transportation Research Record: A Journal of the Transportation Research Board*.
Kontou, E., Murray-Tuite, P. and Wernstedt, K., 2017. Duration of commute travel changes in the aftermath of Hurricane Sandy using accelerated failure time modeling. *Transportation Research Part A: Policy and Practice*, 100, pp.170-181.
Kontou, E., Murray-Tuite, P. and Wernstedt, K., 2016. Commuter Adaptation in Response to Hurricane Sandy's Damage. *Natural Hazards Review* (0416010).
Kontou, E., Yin, Y. and Lin, Z., 2015. Socially Optimal Electric Driving Range of Plug-In Hybrid Electric Vehicles. *Transportation Research Part D: Transport and Environment* 39, 114–125.

Kontou, E., Kepaptsoglou, K., Charalampakis, A. and Karlaftis, M., 2014. The bus to depot allocation problem revisited: a genetic algorithm. *Public Transport* 6(3), 237-255.
Zhang, W. and **Kontou, E.**, 2014. Isolating Stationary and Temporal Sources of Driver Distraction through Eye-Tracking Study. *Advances in Transportation Studies* (1), 87-100.

PRESENTATIONS

"Shared Autonomous Mobility: A Review of Potential Economic Impacts and Energy Savings", at the 14th Annual Colorado Transportation Symposium, April 7 2017.
"Public Charging Opportunities Frontiers for U.S. Cities", at the 96th Annual Meeting of the Transportation Research Board, Washington DC, January 8-12 2017.
"Public Charging Opportunities for U.S. Cities based on Parking Lot Data" at the 2016 Electric Vehicle Symposium and Exhibition (EVS29), Montreal Canada, June 19-22 2016.
"Socially Optimal Replacement of Conventional Vehicles with Electric Vehicles for the U.S. Household Fleet" at 95th Annual Meeting of the Transportation Research Board, Washington DC, January 10-14 2016.
"Socially Optimal All-Electric Driving Range for Plug-in Hybrid Electric Vehicles" at 94th Annual Meeting Transportation Research Board, Washington DC, January 11-15 2015.
"Commuter Travel Changes in Hurricane Sandy's Aftermath" at 93rd Annual Meeting Transportation Research Board, Washington DC, January 12-16 2014.

LEADERSHIP

- The National Academies of Sciences, Engineering, Medicine, Transportation Research Board, Standing Committee on Alternative Transportation Fuels and Technologies, Member, 2017-20.
- Transportation & Development Institute, Public Transport Committee of the American Society of Civil Engineers, Younger Member, 2015-17.
- Transportation Research Board, Young Members Council: Planning and Environment Group, Member, 2015-18; Social media handling 2017-18.

Curriculum Vitae

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EDUCATION

University of Michigan, Ph.D., Economics, 2003
University of Michigan, M.S., Resource Policy and Behavior, 2003
University of Maine, M.S., Resource Economics and Policy, 1997
University of Vermont, B.A., Environmental Studies (minors Biology, Political Science), 1993

PROFESSIONAL APPOINTMENTS

Professor of Economics, Yale University, 2013-
- School of Forestry and Environmental Studies
- Department of Economics (courtesy appointment)
- School of Management (courtesy appointment)

Deputy Assistant Secretary of Environment and Energy, U.S. Department of the Treasury, 2013
- U.S. Board Member, Green Climate Fund (GCF)
- U.S. Council Member, Global Environment Facility (GEF)
- U.S. Representative, Climate Investment Funds (CIFs)

Associate Professor of Economics, Yale University, 2009-2013
Research Associate, National Bureau of Economic Research (NBER), 2014-
- Programs in Environmental and Energy Economics, and Public Economics

Faculty Research Fellow, National Bureau of Economic Research (NBER), 2005-2014
Member, Science Advisory Board, U.S. Environmental Protection Agency, 2012
Visiting Chief Economist, Environmental Defense Fund (EDF), 2011
Visiting Assistant Professor, Department of Economics, Stanford University, 2008-2009
Visiting Researcher, University of California Energy Institute (UCEI) at UC Berkeley, 2008-2009
Visiting Scholar, Resources for the Future (RFF), 2008, 2014
Associate Professor of Economics, University of California, Santa Barbara, 2009-2010
- Bren School of Environmental Science and Management
- Department of Economics (courtesy appointment)

Assistant Professor of Economics, University of California, Santa Barbara, 2005-2009
Assistant Professor of Economics, Williams College, 2003-2005
- Department of Economics
- Center for Development Economics (affiliated)
- Environmental Studies (affiliated)
- Maritime Studies (affiliated)

JOURNAL ARTICLES

"An Economic Perspective on the EPA's Clean Power Plan," with M. Fowlie, L. Goulder, S. Borenstein, J. Bushnell, L. Davis, M. Greenstone, C. Kolstad, C. Knittle, R. Stavins, M. Wara, F. Wolak, and C. Wolfram, *Science*, 346 (2014) 815-816.

"Testing Motives for Charitable Giving: A Revealed-Preference Methodology with Experimental Evidence," with R. Deb and R. Gazzale, *Journal of Public Economics*, forthcoming.

"Conflicts of Interest Distort Public Evaluations: Evidence from the Top 25 Ballots of NCAA Football Coaches," with M. Potoski, *Journal of Economic Behavior and Organization*, forthcoming.

"Reconsidering Donations for Nonmarket Valuation," *Environmental and Resource Economics*, forthcoming.

"Temporal and Spatial Heterogeneity in Marginal Emissions: Implications for Electric Cars and Other Electricity-Shifting Policies," with J. Graff Zivin and E. Mansur, *Journal of Economic Behavior and Organization*, forthcoming.

"How Stringent are the U.S. EPA's Proposed Carbon Pollution Standards for New Power Plants?" with E. Mansur, *Review of Environmental Economics and Policy*, forthcoming.

"A Generalized Impure Public Good and Linear Characteristics Model of Green Consumption," with N. Chan, *Resource and Energy Economics*, 37 (2014) 1-17.

"Rebound Effect is Over-Played," with K. Gillingham, D. Rapson, and G. Wagner, *Nature*, 493 (2013) 475-476.

"Do Building Codes Save Energy? Evidence from Residential Billing Data in Florida," with G. Jacobsen *The Review of Economics and Statistics*, 95 (2013) 34-49.

"Voluntary- and Information-Based Approaches to Environmental Management: A Public Economics Perspective," *Review of Environmental Economics and Policy*, 7 (2013) 276-295.

"Community-Based Incentives for Environmental Protection: The Case of Green Electricity," with G. Jacobsen and G. Clendenning, *Journal of Regulatory Economics*, 44 (2013) 30-52.

"Willingness-to-Pay and Policy-Instrument Choice for Climate-Change Policy in the United States," with K. Boyle and A. Leiserowitz, *Energy Policy*, 55 (2013) 617-625.

"Corporate Social Responsibility for Irresponsibility," with J. Moon, *The B.E. Journal of Economic Analysis & Policy* (Contributions), 12:1 (2012) Article 55.

"The Behavioral Response to Voluntary Provision of an Environmental Public Good: Evidence from Residential Electricity Demand," with G Jacobsen and M. Vandenbergh, *European Economic Review*, 56 (2012) 946-960.

"Willingness to Pay and Political Support for a U.S. National Clean Energy Standard," with J. Aldy and A. Leiserowitz, *Nature Climate Change*, 2 (2012) 596-599.

"Effects of Marine Reserves on California Spiny Lobster are Robust and Modified by Fine-Scale Habitat Features and Distance From Reserve Borders," with M. Kay, H. Lenihan, and C. Miller, *Marine Ecology Progress Series*, 451 (2012) 137-150.

"Business Cycle Effects on Concern About Climate Change: The Chilling Effect of Recession," with M. Kahn, *Climate Change Economics*, 2 (2011) 257-273.

"Green Clubs," with K. van 't Veld, *Journal of Environmental Economics and Management*, 62 (2011) 309-322.

"Does Daylight Saving Time Save Energy? Evidence from a Natural Experiment in Indiana," with L. Grant, *The Review of Economics and Statistics*, 93 (2011) 1172-1185.

"A Free Lunch in the Commons," with S. Salant, *Journal of Environmental Economics and Management*, 61 (2011) 245-253.

"Explaining the Price of Voluntary Carbon Offsets," with M. Conte, *Climate Change Economics*, 1 (2010) 93-111.

"Voluntary Provision of Public Goods for Bads: A Theory of Environmental Offsets," *Economic Journal*, 119 (2009) 883-899.

"A Meta-Analysis of Cost of Community Service Studies," with S. Schulte, *International Regional Science Review*, 32 (2009) 376-399.

"Grades, Course Evaluations, and Academic Incentives," with D. Love, *Eastern Economic Journal*, 36 (2010) 151-163.

"Pharmaceuticals in Wastewater: Behavior, Preferences, and Willingness to Pay for a Disposal Program," with J. Kallaos, K. Wheeler, C. Wong, and M. Zahller, *Journal of Environmental Management*, 90 (2009) 1476-1482.

"The Effect of Geomorphic Channel Restoration on Streamflow and Groundwater in a Snow-Melt Dominated Watershed," with C. Tague and S. Valentine, *Water Resources Research*, 44 (2008) .

"Reef Structure Regulates Small-Scale Spatial Variation in Coral Bleaching," with H. Lenihan, M. Adjeroud, J. Hench, and T. Nakamura, *Marine Ecology Progress Series*, 270 (2008) 127-141.

"Conservation: From Voluntary Restraint to a Voluntary Price Premium," with M. Moore, *Environmental and Resource Economics*, 40 (2008) 195-215.

"Equilibrium Existence and Uniqueness in Impure Public Good Models," *Economics Letters,* 97 (2007) 91-96.

"Should We Drill in the Arctic National Wildlife Refuge? An Economic Perspective," with N. Burger, *Energy Policy*, 35 (2007) 4720-29.

"Private Provision of Environmental Public Goods: Household Participation in Green-Electricity Programs," with M. Moore, *Journal of Environmental Economics and Management*, 23 (2007) 1-16.

"Relating Environmental Attitudes and Contingent Values: How Robust Are Methods for Identifying Preference Heterogeneity?" with G. Aldrich, G., K. Grimsrud, and J. Thacher, *Environmental and Resource Economics*, 37 (2007) 757-75.

"Meeting the Challenges of the Anthropocene: Toward a Science of Coupled Human-Biophysical Systems," with O. Young, *Global Environmental Change*, 17 (2007) 149-51.

"Green Markets and Private Provision of Public Goods," *Journal of Political Economy*, 114 (2006) 816-34.

Reprinted in *The Economics of Corporate Social Responsibility*, A. McAdams (ed.), University of Chicago Press.

Reprinted in *Corporate Sustainability*, T. Lyon, D. Diermeier, and G. Dowell (eds.), SAGE Publications, 2014

"Explaining the Appearance and Success of Voter Referenda for Open-Space Conservation," with S. Powers, *Journal of Environmental Economics and Management*, 52 (2006) 373-90.

"Environmental Constraints on Hydropower: An Ex-Post Benefit-Cost Analysis of Hydroelectric Relicensing in Michigan," with M. Moore, F. Lupi, and E. Rutherford, *Land Economics*, 82 (2006) 389-403.

"Impure Public Goods and the Comparative Statics of Environmentally Friendly Consumption," *Journal of Environmental Economics and Management*, 49 (2005) 281-300.

"Internal and External Influences on Pro-Environmental Behavior: Participation in a Green Electricity Program," with C. Clark and M. Moore, *Journal of Environmental Psychology*, 23 (2003) 237-46.

"Environmental Attitudes, Motivations, and Contingent Valuation of Nonuse Values: A Case Study Involving Endangered Species," with S. Reiling, *Ecological Economics*, 32 (2000) 93-107.

"Do Reminders of Budget Constraints and Substitutes Influence Contingent Valuation Estimates? Another Comment," with S. Reiling, *Land Economics*, 75 (1999) 478-82.

BOOK CHAPTERS

"Public Goods," *Environmental and Natural Resource Economics: An Encyclopedia*, J. Whitehead and T. Haab (eds.), ABC-CLIO/Greenwood, 2014.

"Climate Policy and Voluntary Initiatives: An Evaluation of the Connecticut Clean Energy Communities Program," In *The Design and Implementation of U.S. Climate Policy*, D. Fullerton and C. Wolfram (eds.). University of Chicago Press, 2012.

"An Economic Framework for Evaluating Climate Proofing Investments on Infrastructure," In *Paving the Way for Climate-Resilient Infrastructure: Guidance for Practitioners and Planners*, United Nations Development Program (UNDP), 2011.

"Cost-Benefit Analysis," In *Encyclopedia of Climate and Weather, 2nd Edition*, S. Schneider, M. Mastrandrea, and T. Root (eds.), Oxford University Press, 2011.

"Some Microeconomics of Eco-Entrepreneurship," In the *Advances in the Study of Entrepreneurship, Innovation, and Economic Growth*, G. Libecap (ed), Elsevier Science/JAI Press publishing, 2009.

"An Economics Perspective on Treating Voluntary Programs as Clubs," with K. van 't Veld, In *Voluntary Programs: A Club Theory Perspective*, M. Potoski and A. Prakash (eds.), MIT Press, 2009.

"Environmental Voluntary Contracts Between Individuals and Industry: An Analysis of Consumer Preferences for Green Electricity," with C. Clark, and M. Moore, In *Environmental Voluntary Contracts: Comparative Approaches to Regulation Innovation in the United States and Europe*, E. Orts and K. Deketelaere (eds.), Kluwer Law International, 2001.

"Incorporating Resistance in Pesticide Management: A Dynamic Regional Approach," In *Regional Sustainability: Applied Ecological Economics Bridging the Gap Between Natural and Social Sciences*, I. Ring, B. Klauer, F. Watzold, and B. Mansson (eds.), Springer Verlag, 1999.

ARTICLES AND REVIEWS IN ACADEMIC/POLICY PUBLICATIONS

"The Identification of Causal Effects in Environmental and Energy Economics," with M. Evans and C. Vossler, *Journal of Economic Behavior and Organization*, forthcoming.

"Lessons on Conflicts of Interest from College Football," with M. Potoski, *VOX Column*, Dec 24, 2011.

"Are Americans Willing to Pay for Climate Change Mitigation?" with K. Boyle and A. Leiserowitz, *RFF Weekly Policy Commentary*, Dec 5, 2011.

"Energy Efficiency Codes: Plan B For Climate Change?" *The Milken Institute Review*, (2011) 58-69.

Review of *Climatopolis: How Our Cities Will Thrive in a Hotter Future,* by M. Kahn, *Journal of Economic Literature*, 49 (2011) 777-779.

Discussion of "Carbon Prices and Automobile Greenhouse Gas Emissions," in *The Design and Implementation of U.S. Climate Policy*, D. Fullerton and C. Wolfram (eds.), 2012, University of Chicago Press

"Building Codes and Energy Policy," with G. Jacobsen, *Resources Magazine*, Fall 2010. Also reprinted as an *RFF Weekly Policy Commentary*, November 1, 2010.

"Trends in Environmental Concern as Revealed by Google Searches," with M. Kahn, *VOX Column*, August 21, 2010.

"Offsetting Green Guilt," *Stanford Social Innovation Review* (cover article), Spring 2009, 26-31.

"Oil and the Arctic National Wildlife Refuge," with N. Burger, *RFF Weekly Policy Commentary*, October 5, 2008.

"Does Daylight Saving Time Save Electricity?" with L. Grant, *VOX Column,* December 5, 2008.

Review of "Our Precarious Habitat," by M. A. Benarde*, Journal of the American Medical Association (JAMA)*, 299 (2008) 581-582.

Review of "The Economics of Sustainable Development," edited by S. Asefa, *Journal of Regional Science*, 46 (2006) 583-86.

Review of "Principles of Environmental and Resource Economics," edited by H. Folmer and H. L. Gabel, *The Annals of Regional Science*, 36 (2002) 697-99.

"Can Shade-Grown Coffee Help Conserve Tropical Biodiversity? A Market Perspective," with K. Messer and M. Moore, *Endangered Species Update*, 17 (2001) 125-31.

"Estimating and Questioning Economic Values for Endangered Species: An Application and Discussion," with S. Reiling, *Endangered Species Update*, 15 (1998) 9-15.

COMMENTARIES AND OP-EDS IN THE POPULAR PRESS

"Are Electric Cars Greener? Depends on Where You Live," with J. Graff Zivin and E. Mansur, *Los Angeles Times*, Nov 16, 2014.

"Saving Daylight Wastes Energy," *New York Times, Room for Debate*, Mar 6, 2014.

"Beware of the Rebound Effect," *New York Times, Room for Debate*, Mar 20, 2012.

"Cheap Gas is a Trap," *New York Times, Room for Debate*, Nov 7, 2011.

"Is It Obama's Spill Now? Seize and Opportunity," *New York Times, Room for Debate*, May 26, 2010.

"What the Spill Means for Off Shore Drilling? Tax, Baby, Tax," *New York Times, Room for Debate*, Apr 29, 2010.

"Greener Pastures for Commercial Real Estate," *Wall Street Journal, Real Time Economics*, Dec 16, 2009.

"Saving Daylight but Wasting Energy," with L. Grant, Op-Ed in the *New York Times*, Nov 20, 2008.

"What Would Environmentalists Do with ANWR?" Op-Ed in the *San Diego Union-Tribune*, July 18, 2008.

Comment in response to "No Middle Way on the Environment," *The Atlantic Monthly*, 281 (1998) 12.

MONOGRAPHS AND PROCEEDINGS

Technology Choices: Finding Strategies for a Sustainable Maine, edited with S. Smith and M. Anderson, University of Maine, Maine Agricultural and Forest Experiment Station Publication, 734 (1997) 164 pages.

An Economic Evaluation of Snowmobiling in Maine, with S. Reiling and A. Kezis, University of Maine, Maine Agricultural and Forest Experiment Station Publication, 2069 (1997) 123 pages.

"The Economic Impacts of Snowmobiling in Maine," with S. Reiling and R. Bennet, In *Proceedings of the 1997 Northeastern Recreation Symposium,* USDA Forest Service, Northeastern Forest Experiment Station, General Technical Report (1997).

"Lessons Learned From Past Research on Recreation Fees," with S. Reiling, In *Recreation Fees in the National Park Service: Issues, Policies and Guidelines for Future Action*, A. L. Lundgren (ed.), University of Minnesota Publication, No. BU-6767 (1996) 49-69.

"A Modified Method for Measuring the Economic Impact of Tourism," with S. Reiling and J. Michael, In *Proceedings of the 1996 Northeastern Recreation Symposium*, USDA Forest Service, Northeastern Forest Experiment Station, General Technical Report-NE-232 (1996) 249-51.

GRANTS

Yale Center for Business and Environment, PI, 2011–2011 ($28,000)
Founding Grant for the University of California Center for Energy and Environmental Economics (UCE3), Co-PI, 2009–2012 ($2.4 million)
University of California Energy Institute, PI, 2007–2008 ($25,000)
U.S. Environmental Protection Agency, PI, 2000–2002 ($68,042)
Michigan Department of Environmental Quality, PI, 2000–2002 ($43,843)

CONFERENCES AND WORKSHOPS ORGANIZED

Co-Organizer, Conference on Identifying Causal Effects in Environmental and Energy Economics, University of Tennessee, 2013
Co-Organizer, AERE Sessions at the annual Allied Social Science Association (ASSA) Meetings, 2009–2011, Chair 2012
Co-Organizer, Yale Environmental Economics Seminar, 2009–present
Co-Organizer, EDF Workshop on the Rebound Effect, 2011
Co-Organizer, NBER Summer Institute Program on Environmental and Energy Economics, 2009
Co-Organizer, Voluntary Approaches to Environmental Protection, UCSB, 2009
Co-Organizer, 9th Occasional Workshop on Environmental Economics, UCSB, 2006

AWARDS AND RECOGNITIONS

Distinguished Visiting Scholar, Vanderbilt University School of Law, Sept 2007
Ayers Brinser Award, University of Michigan, 2003
Mans-Spector Fellowship, University of Michigan, 2003-2004

Science to Achieve Results (STAR) Graduate Fellowship, U.S. EPA, 1999-2002
Outstanding Graduate Student Teaching Award, SNRE, University of Michigan, 2000

INVITED SEMINARS AND LECTURES

2012–: The National Academy of Sciences, Washington, DC; Global Environment Facility; Basque Center for Climate Change (BC3), Bilbao, Spain; Columbia University; Center for European Economic Research, Manheim, Germany; Fordham University; University of California, Santa Barbara; Resources for the Future; Stanford University; Williams College.

2010–2011: Amherst College; Columbia University; Connecticut College; Harvard University; Massachusetts Institute of Technology; New York University; Oregon State University; Tulane University; University of Colorado; University of Tennessee; INRA Economie, Rennes, France; University of Michigan; University of Montpelier, France; Environmental Defense Fund; Yale Law School.

2007–2009: Brown University; Cal Poly; Columbia University; Duke University; Harvard University; North Carolina State University; Princeton University; University of Washington; Resources for the Future; Stanford University; University of Calgary; University of California Energy Institute; University of California, Los Angeles; University of California, San Diego; University of California, Santa Barbara; University of Maryland; Vanderbilt University; Yale University;

PRIOR TO 2007: Mystic Seaport, Mystic, CT; Rensselaer Polytechnic Institute; Tufts University; University of California, Berkeley; University of California, Davis; University of California, Energy Institute; University of California, Los Angeles; University of California, Santa Barbara; University of British Columbia; University of Illinois, Urbana-Champaign; University of Maine; University of Michigan; University of Minnesota; University of New Hampshire; University of Vermont; University of Victoria; Williams College; Yale University.

SELECTED CONFERENCE AND WORSHOP PRESENTATIONS

Energy Efficiency and Climate Policy, European University Institute, Florence, Italy, 2014
Climate Change, Raising Ambition, Delivering Results, Chatham House, London, UK, 2014
Conference on Transportation, Energy, Economics and the Environment, University of Michigan, 2014
International Environmental Agreements, Columbia University, 2014
The Future of the World Bank and IMF, Williams College, 2012
EDF-Alliance Program, The Italian Institute at Columbia University, 2011
The Next Round of Climate Economics and Policy Research, RFF, Washington DC, 2011
Energy Policy Symposium, RFF, Washington DC, 2011
UBC Environmental Economics Workshop, 2010
UNDEP Climate Change Adaptation, San Salvador, El Salvador, 2010.
Yale Clean Energy Innovation Conference, 2010
NBER Environmental & Energy Economics Spring Meeting, 2010.
AEA session at the ASSA annual meetings, 2009
Environmental Federalism, The Newseum, Washington, DC, 2009
The Promise of Socially Responsible Investing, Princeton University, 2008
UC Energy Institute Working Group, Berkeley, 2008, 2007

Frontiers in Eco-Entrepreneurship, panelist, UC Santa Barbara, 2008
Conference in Honor of Roger Bolton, Williams College, 2008
Strategy and the Business Environment, Duke University, Fuqua School of Business, 2008
NBER Environmental and Energy Economics Program Meeting, Stanford, 2008
Carbon Offsets and Renewable Energy Certificates, Federal Trade Commission, 2008
Conference on Voluntary Programs and Club Theory, University of Washington, 2007
Industry Self-Regulation Conference, Harvard Business School, 2007
Power Conference, UC Energy Institute, Berkeley, 2007, 2009, 2011
NBER Working Group on Public Policy and the Environment, Cambridge, 2007, 2004, 2002
Round Table on Environmental Voluntary Contracts, Vanderbilt University School of Law, 2006
Occasional Workshop on Environmental Economics, UC Santa Barbara, 2005
International Institute of Public Finance, Helsinki, Finland, 2002
AERE session at ASSA annual meetings, 2006, 2002, 2011, 2013, 2015
AERE session at AAEA annual meetings, 2004, 2001
Wharton Impact Conference, University of Pennsylvania, 1999
HERE Workshop, Iowa State University, 2001, 2000, 1999
UFZ-Center for Environmental Research, Leipzig Halle, Germany, 1998

REVIEWING ACTIVITY

Co-Editor, Special Issue of the *Journal of Economic Behavior and Organization* on "Identifying Causal Effects in Environmental and Energy Economics"

PERIODIC REVIEWER FOR: American Economic Journal: Applied Economics; American Economic Journal: Economic Policy; American Economic Journal: Microeconomics; American Economic Review; American Journal of Agricultural Economics; The BE Journals in Economic Analysis & Policy; Bulletin of Economic Research; Climate Change Economics; Ecological Economics; Economica; Energy Economics; Energy Policy; Environmental and Resource Economics; Environmental Management; European Journal of Political Economy; Journal of Economic Education; Journal of Economics and Management Strategy; Journal of Environmental Economics and Management; Journal of Environmental Psychology; Journal of Public Economic Theory; Journal of Public Economics; Journal of Policy Analysis and Management; Journal of Political Economy; Land Economics; Nature; Nature Climate Change; Resource & Energy Economics; Rand Journal of Economics; Regulation and Governance; Review of Economics and Statistics; Review of Economic Studies; Science; Social Science Quarterly; Quarterly Journal of Economics; National Science Foundation; U.S. Environmental Protection Agency.

SELECTED MEDIA

RESEARCH FEATURED AND PERIODIC COMMENTARY: New York Times, Wall Street Journal, The Economist, National Public Radio (Marketplace, All Things Considered), Washington Post, National Geographic, CBS Sunday Morning, The Today Show, Forbes, Scientific American, Boston Globe, USA Today, U.S. News and World Report, Christian Science Monitor, ABC News 20/20, etc.

Wayne G. Landis

Expertise: Ecological Risk Analysis, Population biology, environmental toxicology

Education: Ph. D. Zoology, Indiana University, Bloomington, IN 1979
M. A. Biology, Indiana University, Bloomington IN 1978
B. A., cum laude with Honors in Biology, Wake Forest University, Winston-Salem, NC 1974

Experience:

Director and Professor, Institute of Environmental Toxicology, Huxley College of the Environment, Western Washington University, Bellingham, Washington (1 September 1989-present). Instituted a new research and educational program in environmental toxicology and risk assessment. Program areas currently include ecological risk assessment, environmental toxicology, and environmental management.

Chair, Department of Environmental Sciences, Huxley College of the Environment. Western Washington University, Bellingham, Washington (June 2004-June 2008). Managed department of 14 faculty FTE, 60 graduate students and 150 majors. Duties included budgeting, staffing, curriculum, space management and the development of faculty.

Research Biologist, Toxicologist, Environmental Toxicology Branch, Toxicology Division, Research Directorate, Chemical Research, Development and Engineering Center (CRDEC). Group leader, Ecological Toxicology Group (March 1982-September 1989). Planned, constructed and operated the aquatic toxicology laboratory and conducted basic and applied research. Duties included supervision of GS-9 through GS-12 scientists.

Environmental and Health Scientist, Environmental and Health Studies, Group of the Franklin Research Center, Silver Spring, Maryland (September 1979-September 1981). I was responsible for studies in ecology, environmental health and genetic toxicology. Criteria Document Manager and Assistant Criteria Document Manager for National Institute for Occupational Safety and Health Criteria Documents.

Professional Society Memberships:

Society for Risk Analysis (SRA)
American Association for the Advancement of Science (AAAS)
Pacific Northwest Chapter SETAC (PNWSETAC)
Society for Environmental Toxicology and Chemistry (SETAC)
Sigma Xi

Awards and Honors:

Hankins Scholarship, Wake Forest University 1972-1974
Dean's List Wake Forest University 1971-1974
NSF Undergraduate Research Project 1972
Nomination U. S. Army Research and Development Achievement Award 1983, 1984, 1985, 1987, 1988.
U. S. Army Research and Development Achievement Award 1984
Outstanding ILIR Research Program 1983, 1984
Special Act Award, Oct. 1985
Exceptional Performance Award, Oct. 1986

Nomination-Outstanding Young Scientist in Maryland 1986, 1987
Nomination-Outstanding Ten Young Men in America 1986, 1987
Nomination-Arthur S. Flemming Award 1988
Who's Who in the West
Who's Who in Science and Technology
Who's Who in America
Meritorious Service Award, Committee E47, American Society for Testing and Materials, April 1995
Promotion to Professor, 1995
Elected to Board of Directors, SETAC North America 2000-2003
American Society for Testing and Materials International Committee on Publications Service Award 2002.
Best Paper Award, 2004 Society of Risk Analysis Annual Meeting, Palm Springs CA.
Adjunct Professor, School of Natural Resources, University of Nebraska-Lincoln (2007-2009)
Fellow, Society for Risk Analysis 2007
Best Ecological Risk Assessment paper for 2007 *Journal of Human and Ecological Risk Assessment*, Colnar and Landis (2007, see papers list).
Elected Member: Puget Sound Partnership Science Panel. December 2010.
Lifetime Achievement Award, Annual International Conference on Soils, Sediments, Water, and Energy. October 2012

Patents:

Patent No. 4,965,202 Biodegradation of 1,4 Dibenz-oxazepine and related compounds (1990).

Patent No. 5,169,777 A column for the biodegradation of 1,4 Dibenz-oxazepine and related compounds (1992).

Principal Investigator and Institute Extramural Research Support:

Title: Development of a Method for the Monitoring of Agroecosystem and Hazardous Waste Site Contamination Using Galliform Chicks (1990-92)
Principal Investigator: W.G. Landis
Sponsor: U.S. EPA-Corvallis
Amount: $53,816

Title: Center for Environmental Quantitative Structure Activity Research (CEQSAR) - TOPKAT Program (1991-1993)
Principal Investigator: W.G. Landis
Sponsor: Health Designs, Inc.
Amount: $50,000

Title: Habitat Analysis and Toxicological Evaluation of the Western Pond Turtle (1991)
Principal Investigators: W.G. Landis, TA Storch
Sponsor: Washington Department of Wildlife
Amount: $10,000

Title: Development of Pattern Recognition Techniques for the Evaluation of Toxicant Impacts to Multispecies Systems (1991-1994)

Principal Investigators: W.G. Landis, R.A. Matthews, G.B. Matthews
Sponsor: U.S. Air Force Office of Scientific Research
Amount: $337,000

Title: SETAC 1991 Support (1991)
Sponsor: Society of Environmental Toxicology & Chemistry
Amount: $5,500

Title: Risk Assessment of Genetically Engineered Organisms (1992)
Principal Investigator: W.G. Landis
Sponsor: Beak Consultants
Amount: $830

Title: Drayton Harbor Sediment Evaluation (1993)
Principal Investigator: R.A. Matthews
Sponsor: Department of Ecology
Amount: $50,000

Title: Support of Washington State Toxics Program (1991-1993)
Principal Investigator: W.G. Landis
Sponsor: Washington State Department of Ecology
Amount: $20,000

Title: Monitoring of Oil and Grease from Artificial Wetlands (1991-1993)
Principal Investigator: W.G. Landis
Sponsor: British Petroleum Oil Company
Amount: $30,663

Title: Monitoring of Toxic Cleanups (1991-1993)
Principal Investigator: W.G. Landis
Sponsor: Washington State Department of Ecology
Amount: $21,000

Title: Lake Whatcom Monitoring ('92- '93)
Principal Investigator: R.A. Matthews
Sponsor: City of Bellingham, Public Works Dept.
Amount: $59,748

Title: Cherry Point Vessel Traffic Risk Analysis (1994)
Principal Investigator: W.G. Landis
Sponsor: Lummi Indian Business Council
Amount: $9,564

Title: Evaluation of Biomonitoring Data (1993)
Principal Investigator: G.B. Matthews
Sponsor: Amoco
Amount: $30,000

Title: Literature Review and Protocol Development for Oil Spill Evaluation (1994)
Principal Investigator: W. G. Landis

Sponsor: Washington Department of Wildlife
Amount: $40,000

Title: Risk Assessment Support (1994)
Principal Investigator: W. G. Landis
Sponsor: Sandia National Laboratory
Amount: $5,000

Title: Cherry Point Vessel Traffic Risk Analysis (1994)
Principal Investigator: W.G. Landis
Sponsor: Lummi Indian Business Council
Amount: $9,564

Title: Lake Whatcom Monitoring ('93- '94)
Principal Investigator: R.A. Matthews
Sponsor: City of Bellingham, Public Works Dept.
Amount: $66,565

Title: Multivariate Statistics Course (1994)
Principal Investigator: R.A. Matthews
Sponsor: NOAA
Amount: $4,000

Title: NPDES Review for Brooks Manufacturing (1995)
Principal Investigator: W.G. Landis, R.A. Matthews
Sponsor: Brooks Manufacturing
Amount: $16,000

Title: RADTRAN Risk Assessment (1994)
Principal Investigators: W.G. Landis, R. Weiner
Sponsor: Sandia National Laboratories
Amount: $10,000

Title: Lake Whatcom Monitoring ('94- '95)
Principal Investigator: R.A. Matthews
Sponsor: City of Bellingham, Public Works Dept.
Amount: $79,858

Title: Data Analysis of the Impacts of the Exxon Valdez Spill (1994-1995)
Principal Investigator: W.G. Landis
Co-Principal Investigators: G.B. Matthews and R.A. Matthews
Sponsor: NOAA
Amount: $57,168

Title: Dimensionality Reduction for Visualization and Interpretation of Ecotoxicological Dynamics of Varying Physical and Temporal Scales (1994-1997)
Principal Investigator: W. G. Landis
Co-Principal Investigators: G.B. Matthews and R.A. Matthews
Sponsor: U.S. Air Force Office of Scientific Research
Amount: $485,416

Title: Novel Models for the Evaluation and Interpretation of Ecological Datasets Applied to the Ecological Risk Assessment of Biotechnological Products. (1994-1997)
Principal Investigator: W.G. Landis
Sponsor: USEPA
Amount: $286,000

Title: Port Valdez Environment Consultation & Testing (1995-1997)
Principal Investigators: W.G. Landis, R.A. Matthews
Sponsor: RCAC
Amount: $172,000

Title: NPDES Permit Compliance Assessment (1995)
Principal Investigators: W.G. Landis, R.A. Matthews
Sponsor: Brooks Manufacturing
Amount: $11,561

Title: Dynamics of Ecological Systems After Stressor Events (1995-1996)
Principal Investigators: W.G. Landis
Sponsor: Partners in Science
Amount: $14,000

Title: Lake Whatcom Monitoring ('95- '96)
Principal Investigator: R.A. Matthews
Sponsor: City of Bellingham, Public Works Dept.
Amount: $82,000

Title: Training Course in Environmental Toxicology (1995-1996)
Principal Investigators: W. G. Landis, M.-H. Yu.
Sponsor: Region 10 USEPA
Amount: $10,000

Title: British Columbia Risk Assessment Guidance (1996-1997)
Principal Investigator: W. G. Landis
Sponsor: BC Ministry of the Environment, Lands and Parks
Amount: $65,000

Title: USEPA Ecological Risk Assessment Support (1996-1997)
Principal Investigator: W. G. Landis
Sponsor: Research Triangle Institute
Amount: $25,000

Title: Kennecott Habitat and Toxics Study (1997-1998)
Principal Investigator: W. G. Landis
Sponsor: Kennecott Utah Mining
Amount: $14,200

Title: WET data Evaluation (1998)
Principal Investigator: W. G. Landis
Sponsor: Amoco

Amount: $18,000

Title: Short Course for the Tier-1 Ecological Risk Assessment for Contaminated Sites in British Columbia (August-November 1998)
Principal Investigator: W. G. Landis
Sponsor: BC Ministry of the Environment, Lands and Parks
Amount: $27,666

Title: Relative Risk Modeling of the Willamette River, OR and Codorus Creek, PA (1998-2001)
Principal Investigator: L. Bodensteiner
Sponsor: NCASI
Amount: $210,000

Title: Toxicological Evaluation of Whatcom Creek (1999-2000)
Principal Investigator: W. G. Landis
Sponsor: City of Bellingham
Amount: $48,000

Title: Risk Hypotheses for Cherry Point (2000-2001)
Principal Investigator: W. G. Landis
Sponsor: WA Department of Natural Resources
Amount: $50,000

Title: Risk assessment guidance for mining sites in British Columbia (2001-Nov 2002)
Principal Investigator: W. G. Landis
Sponsor: Ministry of the Environment, British Columbia subcontract from Goulder Associates.
Amount: $8,500

Title: Work Plan for Cherry Point Risk Assessment and the Formulation of Predictive Environmental Management Tools (2002-2005)
Principal Investigator: W. G. Landis
Sponsor: BP Cherry Point and WA Department of Natural Resources
Amount: $170,000

Title: Development of a conceptual model for non-indigenous species for the Mid-Atlantic States (2002-2005)
Principal Investigator: W. G. Landis
Sponsor: USEPA-NCEA
Amount: $129,007

Title: Regional scale ecological risk assessment of the Androscroggin River. 2004-2006.
Principal Investigator: W. G. Landis
Sponsor: National Council for Air and Stream Improvement
Amount: $76,000.

Title: Ecological risk assessment for the Lake Whatcom Watershed. 2005-2006.
Principal Investigator: W. G. Landis
Sponsor: City of Bellingham
Amount: $49,000.

Title: Risk Evaluation of Invasive Species Transport Across the United States-Canada Border in Washington State. 2006-2007.
Principal Investigator: W. G. Landis
Sponsor: Border Policy Research Institute-WWU
Amount: $47,000.

Title: Risk assessment review for Trail, BC (2001-2009)
Principal Investigator: W. G. Landis
Sponsor: Teckcominco Ltd.
Amount: $283,000

Title: Risk Assessment for Whirling Disease to Salmonids in the Southwest (2008-2009)
Principal Investigator W. G. Landis
Sponsor: New Mexico State University/University of Montana
Amount $67,000

Title: A Pilot Study for the Integration of Regional Scale Risk Assessment and GAP Analysis (2006-2009)
Principal Investigator: W. G. Landis
Sponsor: USGS GAP Program
Amount: $69,000

Title: A Pilot Application of the relative Risk model to the Management of Landscape Change in the Interior Landscape Analysis System Project Area (2006-2010)
Principal Investigator: W. G. Landis
Sponsor: US Forest Service
Amount: $107,000

Title: Whirling Disease and Bayesian networks
Principal Investigator: W. G. Landis.
Sponsor: USGS Cooperative unit, New Mexico State University
Amount $10,500

Title: Connecting Ecological and Human Health Risk Assessment-South River Risk Assessment Program (2009-2015)
Principal Investigator W. G. Landis
Sponsor: DuPont, Wilmington DE
Amount $579,291

Title: Puyallup River Watershed Management and Restoration Initiative (2011-2012)
Principal Investigator W. G. Landis
Sponsor: Bullitt Foundation, Seattle
Amount $50,000

Title: Estimating invasive species risk for the intermountain West (2012-2017)
Principal Investigator: W. G. Landis
Sponsor: US Forest Service
Amount: $110,000

Title: Integrated Modeling Approaches to Support Systems-Based Ecological Risk Assessment (accepted and planned 2015-2017)

Principal Investigators: Katherine von Stackelberg (Harvard), Elsie Sunderland (Harvard), Wayne Landis (WWU) , John Stark (WSU)
Sponsor: USEPA Systems-Based Research for Evaluating Ecological Impacts of Manufactured Chemicals EPA-G2014-STAR-E1
Amount: $651,708 overall, 176,000 WWU.

Extramural Committees, Reviews and Society Service:

Standard Methods Committee-Aquatic Toxicity Tests 1995-2003 Member and Section Chairman

National Oceanographic and Atmospheric Administration
Peer Review Committee-Biotechnology Program Spring 1994

Department of Ecology-State of Washington
Ecological Effects Subcommittee, Scientific Advisory Board September 1990-1995

United States Environmental Protection Agency
Chairman, Section on Generic Microcosms for the workshop "Application of Microcosms to Risk Assessment Research" (January 23-27, 1989)
Chairman, Task Group on Biomonitoring for the workshop "Fate and Effects of Pesticides in the Environment" (December 11-12, 1990)
Peer Reviewer, U. S. EPA West Coast Ecological Risk Assessment Workgroup (December 1990-1992)
Pesticides Monitoring Panel, Region 10 U. S. EPA (December 1990-present)
Peer Reviewer, EPA EcoRisk Framework Document Peer Review Committee (March 1991-June 1991)
Member, EPA Personnel Review Panel (June 1991)
USEPA AREAL Peer Review Panel (March 1993)
Member, EPA Workshop on the Ecological Risks of 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) (Sept 1993)
Member, EPA Workshop on Ecological Risk Assessment of Watersheds (Sept 1994)
Member, EPA Workshop on PCB TEFs (Jan 1998)

American Society for Testing and Materials and Committees E47, Environmental Toxicology and Fate.
Member, ASTM Committee on Publications 1997-2002
E47.01 Aquatic Toxicology Task Groups
Co-chairman, Tenth Symposium on Aquatic Toxicology and Hazard Assessment
Co-editor, Vol. 10 Aquatic Toxicology and Hazard Assessment 1986
Chairman, Thirteenth Symposium on Aquatic Toxicology and Risk Assessment
Co-editor, Vol. 13 Aquatic Toxicology and Risk Assessment 1989
Organizational Chair, First Symposium in Environmental Toxicology and Risk Assessment April 1991.
Co-editor of Environmental Toxicology and Risk Assessment Vol. 1

Society for Environmental Toxicology and Chemistry and Pacific Northwest Chapter Society for Environmental Toxicology and Chemistry.
Editorial Board Environmental Toxicology *and Chemistry* - Hazard Assessment (1985-1990)
Organizational Chairman -1991 SETAC Annual Meeting, Nov. 1991 Seattle, WA
Vice President - Pacific Northwest Chapter SETAC 1991

President - Pacific Northwest Chapter SETAC 1992
Past President - Pacific Northwest Chapter SETAC 1993
SETAC Finance Committee - 1991
SETAC Annual Meetings Committee - 1992
SETAC Regional Chapters Committee - 1992
SETAC 96 and 97 Session Chair, Probabilistic Risk Assessment
Program Chair-PNWSETAC 96 Annual Meeting, Corvallis, OR.
SETAC Student Committee 1998
SETAC Short Course Committee 1998-2001
SETAC Nominations Committee 1999,2002
SETAC Membership Committee 1999-2002
SETAC 98 Session Chair, Whither environmental risk assessment
SETAC 99 Session Chair, Spatially explicit risk assessment, Sustainability and environmental risk assessment
SETAC 2000 Session Chair, Landscape Toxicology
Member SETAC Board of Directors 2000-2003
Chair, SETAC Technical Committee 2000-2002
SETAC 2002 Session Chair, Population level risk assessment
SETAC 2003 Session Co-Chair Risk Assessment
SETAC Europe 2006 Session Co-Chair Extrapolation in Ecological Risk Assessment
Member, New Journal Task Force 2000-2002
Steering Committee Chair, Victoria BC Waste Treatment Evaluation July-August 2005
SETAC 2008 Session Co-chair Regional Scale Ecological Risk Assessment, 2008 SETAC World Congress, Sydney Australia.
SETAC NA 2010 Annual Meeting, Portland OR November 2010. Member Steering Committee and coordinator of Special Symposium and assisted in the organization of the Plenary Speakers.
SETAC NA 2011 Session co-chair. Regional scale ecological risk assessment.
SETAC Europe and World Congress session co-chair. (1) Global climate change and (2) Advanced Statistical Methods in Quantitative Ecotoxicology.
SETAC NA 2014 Planning Committee. Plenary and Special Sessions committee.
Founding Member Editorial Board, *Integrated Environmental Assessment and Management* 2003-present
Pellston Workshop Participation
Planning Committee - Workshop on Research Needs in Environmental Toxicology and Risk Assessment for 1987 Breckenridge, CO Pellston.
SETAC/Conservation Foundation Microcosm Workshop, Virginia - October 1991
Sediment Risk Assessment Workshop, Asilomar, CA March 1995
Uncertainty Workshop, Pellston, MI, August 1995
Regional Risk Assessment Workshop, Pellston, MI September 1997
Revisiting of the Water Quality Criteria, Landsdown, Montana June 1998
Complex stressors, Pellston, MI, September 1999
Uncertainty in Pesticide Risk Assessment, Pensacola, FL March 2002
Steering Committee, Population Level Risk Assessment-Denmark August 2003
Steering Committee, Risk Assessment and the NRDA process, Held in Butte Montana August 18-22, 2008.
Steering Committee, Influence of Global Climate Change (GCC) on the Scientific Foundations of Environmental Toxicology and Chemistry. August 2009-2013.

Science Advisory Boards-FACA Committees

Science Advisory Board for Contaminated Sties in British Columbia Level 2 Screening Level Risk Assessment Workshop, Vancouver BC July 2004.
Department of Interior FACA Committee Evaluating the NRDA Process April 2005-June 2007
USEPA Science Advisory Board Ecological Processes and Effects Committee November 2005-2011
Expert Panel Canadian Department of Fisheries and Oceans for Horizontal Gene Transfer January 2006
USEPA Technology for Sustainability Review. October 2006-April 2007
Board of Scientific Councilors (BOSC) USEPA. Review of the USEPA Sustainability Program. Jan 2007
Board of Scientific Councilors (BOSC) USEPA. Mid Program-Review of the USEPA Sustainability Program. December 2008-May 2009.
Ad Hoc USEPA Science Advisory Board committee Improving EPA Scientific Assessment Practices for Decision Making. May 2009-2012.
2010 Scientific and Technological Awards Science Advisory Board Committee, 2010-2011.
Ad hoc committee member, USEPA Science Advisory Board Ecological Processes and Effects Committee review of ecological risk assessment at EPA. 2012.
2012 Scientific and Technological Awards Science Advisory Board Committee 2012-2014
Puget Sound Partnership Science Panel. December 2010-December 2014.

Other Activities
CCME Ecological Technical Advisory Committee for Soil Hydrocarbon Criteria 1998-2001
Science Advisory Committee for the Multiscale Experimental Ecosystem Research Center 1998-2001.
U. S. National Academy of Science and Chinese Academy of Science Workshop on Persistent Organic Pollutants, Beijing, China June 2004.
Ongoing Activities
Research Advisory Committee, Long-Term Receiving Water Study, and National Council for Air and Stream Improvement 1998-present.
Editorial Board Human and Ecological Risk Assessment 2001-present
Editor Ecological Risk Assessment for *Risk Analysis* 2014

Graduate Student Supervision:
M. S. in Environmental Science
Noellgen, Ruth - Characterization of the Aquatic Organophosphate Acid (OPA) Anhydrase in the Marine Mussel, *Mytilus edulis*, May 1991.
Westra, Brian - Investigation and Characteristics of Organophosphate Acid Anhydrases in Chicken Liver and Kidney Tissue, August 1991.
Hastings, Jennifer - Effects of Mercury on the Development and Behavior of Rat Pups, December 1991-defended September 1991.
Farrow, Lori - Use of Nonforested Patches by Elk in a Western Washington Watershed, May 1992.
Matz, Angela - Development of a Method for Monitoring Chemical Contamination Using Galliform Chicks, March 1992.
Sandberg, Randy - Jet Fuel Toxicity with Sediments in Artificial Communities, December 1993.
Keel, Lester - Anthopluera as a Monitor for the Environmental Impacts of Toxicants, March 1994.
Cooke, Lennie Rae - Characterization and Management of Lake Serene, July 1994.

Goulet, Joseph - Application of Monte Carlo Uncertainty Analysis to Ecological Risk Assessment, August 1995.
Kelly, Sue A. - Effects of Multiple Stressors on a Multispecies System, July 1995.
Rodgers, Sara - Comparison of Toxicant Response in Artificial and Natural Communities, Nov 1996.
Mortensen, Linda - Phytochelatin Reaction to Multiple Toxicants. June 1997
Wilson, Valerie - Factors affecting the Apparent Toxicity of Jet Fuel to Earthworms. August 1997
Bliss, Barbara-The Effect of Nonylphenol, a suspected xenoestrogen, on fish development. June 1998.
Macovsky, Louis-A Test of the Action at a Distance Hypothesis using insect metapopulations, March 1999
Luxon, Matt-Relative rank risk assessment applied to the Willamette and McKenzie Rivers, Oregon, March 2000
Anderson, Michael-Investigation of new detection methods for paralytic shellfish poisoning. August 2000
Obery, Angie-Relative risk assessment applied to the Codorus Creek Watershed, August 2000
Thomas, Jill-Comparison and confirmation of relative risk assessments for Codorus Creek, PA. August 2001
Chen, Joy-Relative risk assessment applied to the Squalicum Creek Watershed. March 2002
Hart Hayes, Emily-Cherry Point risk assessment using alternative endpoints December 2002
Colnar, Audrey-Regional risk assessment of the European green Crab, *Carcinus maenas*, in Cherry Point, Washington-2004
Kushima, Goro-Life Cycle Assessment for the waste treatment from smelter sites-June 2005
Amanda Pfingst –Ecological risk assessment of the Androscroggin River, Maine.-March 2006.
Valerie C. Chen- Ecological risk assessment of the downstream sections of the Androscroggin River, Maine. -December 2006.
Christina Maginnus-Screening level ecological risk assessment for Lake Whatcom, USA-December 2006
Suzanne Anderson-Risk Assessment for the INLAS area of Oregon-December 2007
Laurel Kaminski- Watershed Scale Assessment of Freshwater Salmonid Production in Western Whatcom County-March 2008
Kim Kolb Ayre-Application of Bayesian statistics and networks to risk analysis-December 2009
Heather Summers-Risk Assessment at a Watershed Scale for the South River, VA-June 2012
Eleanor Hines- Risk assessment for the Puyallup Watershed-Current
Annie Johns-Application of Bayesian networks to evaluation management scenarios for the South River, VA-June 2014
Carlie Herring-Ecological risk assessment of non-indigenous species for the Padilla Bay National Estuary Reserve, WA.-August 2014
Meagan Harris-Integration of human health and ecological risk assessment for the South River-ongoing.
Scarlet Graham-Use of Bayesian networks and genomics to build cause-effect networks. Ongoing.
Lara Gaasland-Tatro-Integration of climate change into the estimation of risk to the South River, VA. Ongoing.

<u>Graduate Committees</u>
Klaver, Adrian-The Effect of Oxytetracycline on Nitrification in Water (Dr. Matthews-Huxley)

Saban, Lisa -Analysis of Drayton Harbor Sediments Using Both Chemical Analysis and Various Bioassays (Dr. Matthews-Huxley)
Irwin, Margaret-Factors Affecting the Maintenance of Immunoglobulin Polymorphisms (Dr. Stevenson-Anthropology)
Vandersypen, Joan Pickens- Evaluation of the acid volatile sulfide approach for determining the toxicity of cadmium and copper in a freshwater sediment (Dr. Storch-Huxley)
Post, Ruth -Degradation of leaf litter in deep water (Dr. Matthews-Huxley)
Roze, Michael - Application of Computer Science to Environmental Assessment (Dr. Matthews-Computer Science)
Martin, Karl Immunoglobulin polymorphisms and genetic distances among Anabaptist populations: Kansas and Nebraska Mennonites and Northern Indiana Amish (Dr. Stevenson-Anthropology)
Wiegers, Janice - Distribution of Chromium, Copper, Lead and Zinc in the Sediments and Macrophytes of Claypit Pond (Dr. Matthews- Huxley)
Zukowski, Annette - The Toxic Effects of Chlorine and Jet Fuel on the Fertilization and Development of the Echinoderm*, Dendraster excentricus* (Dr. Matthews- Huxley)
Wild, Lorraine G. - Effect of Fluoride on Superoxide Dismutase (SOD) Activity in Germinating Mung Bean Seedlings (Dr. Yu-Huxley)
McNair, Catherine M. - Dynamic Deep Chlorophyll Maxima and their Association with Environmental Gradients: A Multivariate Analysis (Dr. Matthews-Huxley)
Whitney, Aileen.- Immune system changes of the earthworm on toxicant addition (Dr. Yu, Huxley College).
Klacan, Julie.-Fish health and community structure in the Willamette and McKenzie Rivers (Dr. Bodensteiner, Huxley College).
Zirbel, Marnie Jo. Evidence for light-enhanched grazing and growth in two species of marine microzooplankton (Suzanne Strom, Shannon Point)
Daniel Diedrich- An assessment of zinc toxicity on juvenile *Salmo trutta* (brown trout) of different chronological ages and sizes 2007. (Dr. Sofield Advisor).
Catherine Bollinger - An assessment of the Biotic Ligand Model in the Columbia River, BC and WA. December 2008 (Dr. Sofield, Advisor).
Jason Fortner-Phototoxicity of PAH contaminated groundwater 2009. (Dr. Sofield Advisor).
Siana Wong-Nutrients, Algae and Water Quality. 2013. (Dr. Matthews Advisor)

Continuing Education and Professional Development Programs:
Soil Toxicity Workshop - (Wayne G. Landis and Greg Linder) Soil toxicity testing and evaluation using the methods proposed by the State of Washington for examination of hazardous waste sites for environmental toxicity. (Summer 1993)

Use of Nonmetric Clustering and Association Analysis and other Multivariate Analysis and Visualization Methods in Hazard and Risk Assessment - (G. B. Matthews, R. A. Matthews and W. G. Landis) Technology transfer of the methods developed here for the interpretation of ecological and eco-toxicological datasets and their relevance to hazard and risk assessment. (Society of Environmental Toxicology and Chemistry short course November 1993.

Introduction to Environmental Toxicology and Risk Assessment- (with M-H. Yu). Professional Development Course for USEPA Region 10 and other state and Federal agencies in the Puget Sound area. November 1995-August 1996.

Population and Community Ecology: Environmental Toxicology and Risk Assessment. Wayne G. Landis (Institute of Environmental Toxicology and Chemistry), Robin A. Matthews (Institute for Watershed Studies), and Lawrence A. Kapustka (Ecological Planning and Toxicology, Inc.) Society of Environmental Toxicology and Chemistry short course November 1996, 1997 and 1998 with John McLaughlin.

Short Course for the Tier-1 Ecological Risk Assessment for Contaminated Sites in British Columbia. Presented the Tier-1 Risk Assessment Guidance for a mixed class of regulators, consultants and clients. The course reviewed the basics of ecological risk assessment, presented the framework and ended with an example worked by the students. The course was taught with Anne Fairbrother of **e**cological **p**lanning and **t**oxicology, and Gary Mann and Valerie Wilson of EVS Consultants. October 1998.

Regional Risk Assessment. Presented basic population and community ecology and methods for assessing risk at regional scales. This was a SETAC short course for 1999 with Bruce Duncan of USEPA Region 10.

Introduction to Ecological Risk Assessment at the Regional/Landscape Scale. Introduction to the issues of doing environmental risk assessment at a regional scale presented for the Washington State Department of Natural Resources 2001.

Landscape and Regional Ecological Risk Assessment. Wayne G. Landis and Jill Thomas. Short Course. This was a short course for the SETAC North America 24th 2003 Annual Meeting, November 9-11, Austin, TX.

Ecological Risk Assessment for Skeptical Ecologists Making Decisions at Relevant Scales: Landscape and Regional Ecological Risk Assessment. Ecological Society of America Annual Meeting Portland, Oregon, Workshops (with Bruce Hope and Larry Kapustka). August 1, 2004.

Introduction to the use of the Relative Risk Model for Environmental Management, Washington Department of Natural Resources, October 20-21 2004.

Introduction to Regional Scale Ecological Risk Assessment. Northern California Chapter of the Society of Environmental Toxicology and Chemistry, May 9, 2007, Berkley CA.

Introduction to Regional Scale Ecological Risk Assessment. Norwegian Institute for Water Research (NIVA). Oslo Norway. October 3, 2007

Introduction to Regional Scale Ecological Risk Assessment. Society for Risk Analysis annual meeting. San Antonio TX December 9, 2007.

Academic Courses Taught:
Population Biology; Aquatic Toxicology; Environmental Toxicology 2; Introduction to Environmental Risk Assessment; Introduction to Environmental Studies; Sustainability and Ecosystem Management; Darwin, Huxley and the Continuing Revolution, Darwin and the revolutionaries. Interaction between Science and Policy.

Publications:

Ayre KK, Caldwell CA, Stinson J, Landis WG. 2014. Analysis of regional scale risk to whirling disease in populations of Colorado and Rio Grande cutthroat trout using a Bayesian belief network model. *Risk Analysis*.34:1589-1605. DOI: 10.1111/risa.12189

Landis WG, Rohr JR, Moe SJ, Balbus JM, Clements W, Fritz A, Helm R, Hickey C, Hooper M, Stahl RG, Stauber J. 2014. Global climate change and contaminants, a call to arms not yet heard? *Integr Envrion Assess Manag* 10:483-484.

Hines EE and Landis WG. 2014. Regional Risk Assessment of the Puyallup River Watershed and the Evaluation of Low Impact Development in Meeting Management Goals. *Integr Environ Assess Manag* 10:269-278

Landis WG. 2013. Book review: Turing's Cathedral by George Dyson. *Integr Environ Assess Manag* 9:680-681

Landis WG. 2013. Book review: Modeling and simulation in ecotoxicology with applications in Matlab and Simulink by Kenneth R. Dickson. *Integr Environ Assess Manag* 9:542-543

Landis WG, Durda JL, Brooks ML, Chapman PM, Menzie CA, Stahl RG, Stauber JL. 2013. Ecological risk assessment in the context of global climate change. *Environmental Toxicology and Chemistry* 31:1 79-92.

Stahl R, Hooper MJ, Balbus J, Clements W, Fritz A, Helm R, Hickey C, **Landis WG**, Moe, SL. 2013. The influence of global climate change on the scientific foundations and applications of environmental toxicology and chemistry: introduction to a SETAC international workshop. Environmental *Toxicology and Chemistry* 32:1 13-19.

Landis WG. 2012. Comments on Fox et al (2012): What to do with NOECs/NOELs?. *Integr Environ Assess Manag* 8:76-77.

Ayre KK, **Landis WG**. 2012. A Bayesian approach to landscape ecological risk assessment applied to the Upper Grande Ronde watershed, Oregon. *Human and Ecological Risk Assessment.* 18:5 946-970

Anderson SA and **Landis WG**. 2012. A pilot application of regional scale risk assessment to the forestry management of the Upper Grande Ronde watershed, Oregon. *Human and Ecological Risk Assessment.* 18:705-732.

Landis WG, Chapman PM. 2012. Author's reply. *Integr Environ Assess Manag* 8:5.

Landis WG, Chapman PM. 2011. Well past time to stop using NOELS and LOELs. *Integr Environ Assess Manag* 7:vi-viii. Peer reviewed editorial.

Landis, WG, Sofield RM, Yu M-H. 2011. Introduction to Environmental Toxicology: Molecular Substructures To Ecological Landscapes, 4th Edition. Lewis Publishers, CRC Press. Boca Raton.

Miller TK, Allen CR, **Landis WG**, Merchant JW. 2010. Risk assessment: Simultaneously prioritizing the control of invasive plant species and the conservation of rate plant species. *Biological Conservation* 143:2070-2079.

Wenning RJ, Finger SE, Guilhermino L, Helm RC, Hooper MJ, **Landis WG**, Menzie CA, Munns WR, Rombke J, Stahl RG. 2010. Global Climate Change and Environmental Contaminants: A SETAC Call for Research *Integr Environ Assess Manag* 6: 197-198.

Warren-Hicks WJ, Qian S. Toll J, Fischer DL, Fite E, **Landis WG**, Hamer M, Smith EP. 2010. Monte Carlo, Bayesian Monte Carlo, and First Order Error Analysis. In Warren-Hicks WJ and Hart. A. Application of Uncertainty Analysis to Ecological Risks of Pesticides.

Kapustka, LA. and Landis WG. 2010*. Environmental Risk Assessment and Management from a Landscape Perspective*. John Wiley & Sons, Inc. New York

Kapustka, LA and Landis WG. 2010. Chapter 1. Introduction. In Kapustka, LA. and Landis WG. Eds. *Environmental Risk Assessment and Management from a Landscape Perspective*. John Wiley & Sons, Inc. New York pp 1-9

Landis WG, Chen VC, Colnar, AM, Kaminski L., Kushima G., Seebach, A. 2010. Chapter 12: Landscape non-indigenous Species Risk Assessment: Asian Oyster and Nun Moth Case Studies. In Kapustka LA. and Landis WG. *Environmental Risk Assessment and Management from a Landscape Perspective*. John Wiley & Sons, Inc. New York pp 245-278.

Seebach, A., Colnar AM, Landis WG. 2010. Chapter 13: Ecological Risk Assessment of the Invasive *Sargassum muticum* for the Cherry Point Reach, Washington USA. In Kapustka, LA. and Landis WG. Eds. *. Environmental Risk Assessment and Management from a Landscape Perspective*. John Wiley & Sons, Inc. New York pp 279-301.

Landis WG and Bryant PT. 2010. Using weight of evidence characterization and modeling to investigate the cause of the changes in Pacific Herring (*Clupea pallasi*) Population Dynamics in Puget Sound and at Cherry Point, Washington. *Risk Analysis.* 30:183-202

Landis WG and Andersen MC. 2010. Ecological risk assessment: population scale and invasive species. *Risk Analysis* 30:162-164.

Landis WG. 2009. Why Has Ecological Risk Assessment Found Such Limited Application*? Human and Ecological Risk Assessment* 15:849-857

Gala W, Lipton J, Cernera P, Ginn T, Haddad R, Henning M, Jahn K, Landis WG, Mancini E, Nicoll J, Peters V, Peterson J. 2009. Ecological Risk Assessment (ERA) and Natural Resource Damage Assessment (NRDA): Synthesis Of Assessment Procedures. *Integrated Environmental Assessment and Management*. 5:515-522

Stahl, RG Jr., Gouget R, Charters D, Clements W, Gala W, Haddad R, Helm R, Landis WG, Maki A, Munns WR, Young D. 2009. The Nexus Between Ecological Risk Assessment and Natural Resource Damage Assessment Under CERCLA: Introduction to a Society of Environmental Toxicology and Chemistry Technical Workshop. *Integrated Environmental Assessment and Management*. 5:496-499.

Landis WG. 2009. Context, Toxicity Reference Values and Risk. *Integrated Environmental Assessment and Management*. Learned Discourse 5:719-720

Hall, TJ, Landis WG. 2009. Measurement and Analysis of the Potential Long Term Impact of Pulp and Paper Mill Effluent on Receiving Waters. *Integrated Environmental Assessment and Management*. 5: 186–188

Landis WG, Thomas JF. 2009. Regional Risk Assessment as a Part of the Long Term Receiving Water Study. *Integrated Environmental Assessment and Management*. 5: 234–247

Hall TJ, Fisher RP, Rodgers Jr, JH, Minshall GW, Landis WG, Kovacs TG, Firth BK, Dubé MG, Deardorff TL, Dennis L Borton DL. 2009. A long-term multi-trophic level study to assess pulp and paper mill effluent effects on aquatic communities in four United States receiving waters: background and status. *Integrated Environmental Assessment and Management 5:* 189–198

Hall TJ, Fisher RP, Rodgers Jr, JH, Minshall GW, Landis WG, Kovacs TG, Firth BK, Dubé MG, Deardorff TL, Dennis L Borton DL. 2009. A long-term multi-trophic level study to assess pulp and paper mill effluent discharges on aquatic communities in four United States receiving waters: lessons learned. *Integrated Environmental Assessment and Management.* 5: 283–290

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Landis WG. 2008. Article title: Assimilative Capacity, Jorgensen, S. E. (ed) *Encyclopedia of Ecology, Oxford*: Elsevier Ltd. pp 264-268.

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Barnthouse, LB, Harman C, Landis WG, Tannenbaum. 2006. *Integrated Environmental Assessment and Management'*s commitment to scientific discourse. *Integrated Environmental Assessment and Management* 2:201.

Landis, W. G.2006*.* Population scale assessment endpoints in ecological risk assessment part 1: Reflections of stakeholders' values. *Integrated Environmental Assessment and Management* 2:86-91

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Walker, R. Landis, W G. Brown, P. 2005. Chapter 8 Developing a Regional Ecological Risk Assessment: A Case Study of a Tasmanian Agricultural Catchment. In W. G. Landis editor *Regional Scale Ecological Risk Assessment Using the Relative Risk Model*. CRC Press Boca Raton pp 159-178.

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Chen, J. C., Landis W. G. 2005. Chapter 10 Using the Relative Risk Model for a Regional-Scale Ecological Risk Assessment of the Squalicum Creek Watershed. In W. G. Landis editor *Regional Scale Ecological Risk Assessment Using the Relative Risk Model*. CRC Press Boca Raton pp 195-230

Landis W. G., Hart Hayes, E., Markiewicz, A. M. 2005. Chapter 12. Retrospective Regional Risk Assessment Predictions and the Application of a Monte Carlo Analysis for the Decline of the Cherry Point Herring Stock. In W. G. Landis editor *Regional Scale Ecological Risk Assessment Using the Relative Risk Model*. CRC Press Boca Raton pp 245-256.

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Johns AF and Landis WG. Assessing uncertainty in response through dose-response model fitting. Pacific Northwest Chapter SETAC annual meeting, Spokane WA April 18-20 2013.

Landis WG. Risk and Remediation. DuPont Risk Assessment Group. Wilmington DE. February 27, 2013

Landis WG. Regional scale risk assessment of watersheds in a landscape context. North-West University, Potchefstroom, South Africa. February 13, 2013.

2012.
Landis WG. Application of the Bayesian network relative risk model to decision making for the Salish Sea. Puget Sound Partnership Science Panel Meeting, Edmonds WA December 11 2012.

Ayre KK, Stinson J, Hines EE, Landis WG. Risk Assessment for a Rare Plant of the Intermountain Western United States. Society for Risk Analysis, San Francisco CA December 9-12 2012.

Landis WG and Moore DRJ. The curve is the measure of toxicity. Debate: Should the NOEC be banned? SETAC North America, Long Beach CA, November 11-15 2012

Moore DRJ and Landis WG. Just Say No to NOELS. Debate: Should the NOEC be banned? SETAC North America, Long Beach CA, November 11-15 2012.

Landis WG. The future of risk assessment at regional scales with multiple sources, stressors and endpoints in the 21stcentury. SETAC North America, Long Beach CA, November 11-15 2012

Hines, EE and Landis WG. Regional risk assessment of the Puyallup River watershed and low impact development (LID) to meet management goals. SETAC North America, Long Beach CA, November 11-15 2012

Stiles, J., Landis WG. The effect of Atrazine and Roundup on *Daphnia Magna.* SETAC North America, Long Beach CA, November 11-15 2012.

MacLeod, A, Markiewicz AJ, Landis WG. Investigation into toxicity of chemical mixtures involving organophosphate pesticides: malathion and diazinon toxicity to *Daphnia Magna*. SETAC North America, Long Beach CA, November 11-15 2012.

Edwards, S, Hines E, Landis WG. Using a Bayesian network approach to evaluate the effectiveness of low impact development techniques in managing risk in the Puyallup River Watershed. SETAC North America, Long Beach CA, November 11-15 2012.

Landis WG, Ayres KK, Summers H, The estimation, confirmation, and management of risk at multiple biological scales with multiple stressors for the South River watershed. Virginia USA. SETAC North America, Long Beach CA, November 11-15 2012

Landis WG, Ayre KK, Cains MG, Markiewicz AJ, Stinson J, Summers H, South River assessment and its use in management. South River Science Team. October 24-25, Harrisonburg VA 2012.

Landis WG. Regional risk assessment applied to multiple stressors over landscapes. CSIRO Land and Water Division. Kirrawee NSW Australia. July 20, 2012.

Landis WG. Application of the seven principles for ecological risk assessment under climate change to the Hg contamination and other factors of the South River watershed, Virginia USA. July 17-20 2012. Sydney Australia.

Greenburg M, Haas C, Kane S, Siegrist, M. Landis WG. Risk Challenges, World Development, and Risk Analysis: An International Journal. World Congress on Risk 2012. July 17-20 2012. Sydney Australia.

Landis WG. Regional risk assessment applied to multiple stressors over landscapes. July 12, 2012. Supervising Scientist Division, Department of the Environment, Water Heritage and the Arts. Darwin, Australia.

Landis WG and Chapman PM. Way Past Time to Stop Using NOEL/LOELs. SETAC Australasia. Brisbane Australia. July 4-6, 2012.

Landis WG, Ayre KK, Cains MG, Markiewicz AJ, Stinson J, Summers HM. The calculation of risks due to mercury other stressors, and climate change to multiple endpoints at a regional scale for the South River and Upper Shenandoah River, Virginia USA. SETAC Australasia. Brisbane Australia. July 4-6, 2012.

Ayre KK, Summers H, Stinson J, Landis WG. Application of Bayesian networks for integrating multiple chemical and non-chemical stressors into a risk assessment using the South River, VA as a case study. 6th SETAC World Congress, Berlin Germany May 20-24, 2012.

Moe SJ, Balbus J, Clements WH, Fritz A, Gouin T, Helm R, Hickey C, Hooper H, Landis WG, Stahl RG. The influence of global climate change on the scientific foundations and applications of environmental toxicology and chemistry: summary from a SETAC international workshop (July 2011). 6th SETAC World Congress, Berlin Germany May 20-24, 2012.

Durda JL, Landis WG, Brooks ML, Chapman PM, Menzie CA, Stahl RG, Stauber JL. Ecological risk assessment in the context of global climate change. 6th SETAC World Congress, Berlin Germany May 20-24, 2012.

Landis WG, Ayre KK, Cains MG, Markiewicz AJ, Stinson J, Summers H. The calculation of risks due to mercury and other stressors to multiple endpoints at a regional scale for the South River and Upper Shenandoah River, Virginia USA. 6th SETAC World Congress, Berlin Germany May 20-24, 2012.

Chapman PM, Landis WG. Well past time to stop using NOELs and LOELs. 6th SETAC World Congress, Berlin Germany May 20-24, 2012.

Landis W.G., Cains M.G., Markiewicz A.J., and Stinson J. Introduction to the calculation of risks due to mercury and other stressors to multiple endpoints for the South River and Upper Shenandoah River, Virginia and the projected outcomes of different management scenarios. Pacific Northwest Chapter of SETAC Annual Meeting. April 26-28. Vancouver, British Columbia Canada.

Ayre, K.K., Summers, H.M., and Landis, W.G., The use of Bayesian network models to evaluate ecological risk from Hg contamination in the South River, Va. Pacific Northwest Chapter of SETAC Annual Meeting. April 26-28. Vancouver, British Columbia Canada.

Ayre, K.K., Stinson, J, and Landis, W.G., An assessment of risk to water quality and ecological services for the South River, VA. Pacific Northwest Chapter of SETAC Annual Meeting. April 26-28. Vancouver, British Columbia Canada.

Hines, E.E., Edwards, S.T., and Landis, W.G. Regional risk assessment of the Puyallup river watershed and low impact development (LID) to meet management goals. Pacific Northwest Chapter of SETAC Annual Meeting. April 26-28. Vancouver, British Columbia Canada.

Brown, K.R., Landis, W.G., and Markiewicz A.J., Determining the additive, synergistic or antagonistic effects of chemical mixtures of carbaryl and malathion on *Daphnia magna.* Pacific Northwest Chapter of SETAC Annual Meeting. April 26-28. Vancouver, British Columbia Canada.

Edwards, S.T., Hines, E.E., and Landis, W.G. Using a Bayesian network approach to evaluate the effectiveness of low impact development techniques in managing risk in the Puyallup River watershed. Pacific Northwest Chapter of SETAC Annual Meeting. April 26-28. Vancouver, British Columbia Canada.

MacLeod, A.H. and Landis W.G. Toxicity of chemical mixtures at sub-lethal concentrations:

malathion and diazinon toxicity to *Daphnia magna* . Pacific Northwest Chapter of SETAC Annual Meeting. April 26-28. Vancouver, British Columbia Canada.

Stinson, J.M., Landis, W.G., Ayre, K.K., and Markiewicz A.J. Applications of geographic information systems to ecological risk assessment and modeling in the South River and Upper s
Shenandoah River, Virginia. Pacific Northwest Chapter of SETAC Annual Meeting. April 26-28. Vancouver, British Columbia Canada.

2011
Ayre KK, Summers HM, Landis WG. The use of a Bayesian Network for the calculation of ecological risk for Hg Contamination in the South River, VA. Society for Risk Analysis Annual Meeting 2011. Charleston SC December 4-7, 2011.

Landis WG, Durda J, Brooks M, Chapman PM, Menzie C., Stahl R, Stauber J. Ecological Risk Assessment in the context of global climate change. Society of Environmental Toxicology and Chemistry Annual Meeting. Boston MA November 13-17 2011.

Cains MN, Landis WG. Toxicity of chemical mixtures in stormwater: malathion and benzene toxicity to *Daphnia magna*. Society of Environmental Toxicology and Chemistry Annual Meeting. Boston MA November 13-17 2011.

Landis WG, Ayre KK, Summers H. The use of Bayesian networks to integrate population modeling, community interactions and ecosystem services. Society of Environmental Toxicology and Chemistry Annual Meeting. Boston MA November 13-17 2011.

Landis WG, Chapman PM. Well past time to stop using NOELS and LOELS. Society of Environmental Toxicology and Chemistry Annual Meeting. Boston MA November 13-17 2011.

Summers H. Ayre KK, Stinson J, Landis WG, Cains M. The use of Bayesian network to modeled the risk of mercury contamination to the fish and other vertebrates in the South River, VA. Society of Environmental Toxicology and Chemistry Annual Meeting. Boston MA November 13-17 2011.

Landis WG, Ayre KK, Cains M, Markiewicz A, Stinson J, Summers H. Integrated multiple stressor regional risk assessment for the South River and Upper Shenandoah River, VA, Society of Environmental Toxicology and Chemistry Annual Meeting. Boston MA November 13-17 2011.

Markiewicz AJ, Landis WG. Assessing ecological threats/risks at a basin scale to Puget Sound using the relative risk method. Salish Sea Conference, Vancouver BC. October 25-27, 2011.

Landis WG, Ayre KK, Cains M, Markiewicz AJ, Stinson J, Summers H. The use of the relative risk model and Bayesian networks for the calculation of risk for the South River VA. South River Science Team fall meeting, Harrisonburg VA. October 10-11 2011.

Landis WG, Ayre KK, Cains M, Markiewicz A, Stinson J, Summers H. The use of the relative risk model and Bayesian networks for the calculation of risk for the Hg contamination in the South River VA. 2011 Aquatic Toxicology Workshop, Winnipeg Manitoba October 2-5, 2011.

Landis WG, Chapman PM. Well past time to stop using NOELs and LOELs. . 2011 Aquatic Toxicology Workshop, Winnipeg Manitoba October 2-5, 2011.

2010

Landis WG. Global Climate Change, Environmental Toxicology and Regional Risk Assessment Society of Environmental Toxicology and Chemistry Annual Meeting. Portland OR November 7-11 2010.

Landis WG, Markiewicz, AM, Stinson S. Ayre KK, McCullough, S, Sloan-Evans ST, Gavin N, Greyell C. A watershed based regional risk assessment for the South River, VA using Bayesian networks. Society of Environmental Toxicology and Chemistry Annual Meeting. Portland OR November 7-11 2010.

Ayre KK, Landis WG, Stinson J, Caldwell C. Population Scale Ecological Risk Assessment for Whirling Disease in Cutthroat trout of the American Southwest. Society of Environmental Toxicology and Chemistry Annual Meeting. Portland OR November 7-11 2010.

Landis WG. Microplastics in the Marine Environment-Risk Assessment as an Organizational and Decision Making Framework. Second Research Workshop on Microplastic Debris. Tacoma WA, November 5-6, 2010.

Landis WG, Markiewicz, AM, Stinson S. Ayre KK, McCullough, S, Sloan-Evans ST, Gavin N, Greyell C. The use of risk assessment to construct a watershed decision and management framework. South River Science Team Expert Panel Meeting, Harrisonburg, VA October 5-6, 2010

Landis WG, Ayre KK, Markiewicz AJ. Landscape risk assessment as a science-polity integrative tool for environmental management. 91st Annual Meeting of the Pacific Division of AAAS. Ashland OR June 15, 2010.

Landis WG. Risk Business…Integrating science-policy to manage the environment. Louisiana State University, Department of Environmental Sciences 25th Anniversary talk, Baton Rouge LA April 30, 2010.

Landis WG. Ayre, KK, Markiewicz AJ, Stinson J, McCullough S. South River Ecological Risk Assessment. South River Science Team conference, William and Mary College, Williamsburg VA April 23, 2010.

2009

Ayre KK, Caldwell C, Stinson J, Landis WG. A Bayesian network based risk assessment for whirling disease on populations of Colorado River cutthroat trout in watersheds of the southwestern United States. Annual Meeting Society for Risk Analysis, Baltimore MD December 6-9, 2009.

Landis WG and Markiewicz AJ. Regional and Landscape Risk Assessment as a Science-Policy Integrative Tool for Managing Human-Dominated Systems. Society of Environmental Toxicology and Chemistry Annual Meeting. New Orleans LA November 13-17 2009.

Landis WG. Regional Scale Integration of Human Health and Ecological Risk Assessment. Society of Environmental Toxicology and Chemistry Annual Meeting. New Orleans LA November 13-17 2009.

Landis WG and Ayre KK. Risk Based Bayesian Networks as a Tool for Determining Environmental Conditions for Disaster Restoration. Society of Environmental Toxicology and Chemistry Annual Meeting. New Orleans LA November 13-17 2009.

Landis WG. The Big Picture….and Natural Resource Assessment and Recovery. Society for Ecological Restoration International World Congress on Ecological Restoration, Perth Australia August 23-27, 2009

Landis WG. Kolb Ayre K , Bryant PT, Kaminski LA, Stinson J, Caldwell CA. Southwest regional risk assessment for whirling disease in native salmonids. American Fisheries Society Western Division Annual Meeting. Albuquerque NM May 3-7 2009.

Landis WG. Beyond contaminated sites, the management/reconstruction of ecological structures. Dupont Company, Wilmington DE April 27, 2009.

Landis WG and Markiewicz AJ. Regional Risk Assessment as an Organizational and Decision Making Tool for Managing Puget Sound. 2009 Puget Sound Georgia Basin Ecosystem Conference. Seattle WA February 9-11 2009.

Seebach A. and Landis WG. Ecological Risk Assessment Uncertainty Reduction by Mapping the Nearshore Habitats of Cherry Point, Washington. 2009 Puget Sound Georgia Basin Ecosystem Conference. Seattle WA February 9-11 2009.

Landis WG. Kolb Ayre K , Bryant PT, Kaminski LA, Stinson J, Caldwell CA. An ecological risk assessment tool for calculating the risk of infection by whirling disease on imperiled populations of cutthroat trout. 15th Annual Whirling Disease Symposium, Denver, Colorado, February 4-5, 2009

2008

Landis WG. Beyond contaminated sites, ecological risk assessment as the default environmental evaluation and management tool. Society for Risk Analysis Annual Meeting. Boston MA December 8-11, 2008.

Landis WG, Kaminski LA, Bryant PT and Caldwell, CA. An ecological risk assessment of the impact of whirling disease on populations of Rio Grande cutthroat trout in the southwestern United States. Society for Risk Analysis Annual Meeting. Boston MA December 8-11, 2008.

Landis WG. The Big Picture….and NRDAR. Society of Environmental Toxicology and Chemistry North America annual meeting. Tampa FL, November 17-20 2008.

Landis WG, Peter T. Bryant and Laurel A. Kaminski. No Eco in Ecotoxicology without Context: Alterations in Population Age Structure, Dynamics and Spatial interactions. Society of Environmental Toxicology and Chemistry North America annual meeting. Tampa FL, November 17-20 2008.

Maginnis CM and Landis WG. Using the Relative Risk Model for Managing Water Quality with Multiple Types of Stressors and Sources using Lake Whatcom, Washington as a Case Study. Society of Environmental Toxicology and Chemistry North America annual meeting. Tampa FL, November 17-20 2008.

Landis WG. Can ASTM Standard Methods be Applied to Managing Cherry Point, WA and the Marine Reserve? Society of Environmental Toxicology and Chemistry North America annual meeting. Tampa FL, November 17-20 2008.

Landis WG Jessica A. Ellis,, Amy Jewel, Laurel A. Kaminski, April J. Markiewicz and Laura Sellens. Regional Ecological Risk Assessment at Landscape Scales for the Management of Native and Invasive Species. Society of Environmental Toxicology and Chemistry World Congress, Sydney Australia, August 4, 2008.

Landis WG. Regional Scale Ecological Risk Assessment Applied to Natural Resource Management. CSIRO Division of Mathematical and Information Sciences, Hobart Tasmania, Australia, August 1, 2008.

Landis WG. Regional Scale Ecological Risk Assessment Applied to Natural Resource Management. CSIRO Cleveland, Hobart, Australia, July 31 2008

Landis WG Uncertainty and the RRM model. Australian Center for Environmental Risk Assessment Uncertainty Analysis Workshop. University of Melbourne, Melbourne Australia July 26, 2008

Landis WG. Regional scale risk assessment in a landscape context. Joint Society for Risk Analysis, Society of Environmental Toxicology, Harvard School of Risk Analysis seminar, School of Public Health, Harvard University Boston MA. February 14, 2008.

Landis WG. Regional scale risk assessment of watersheds in a landscape context. Dupont. Wilmington DE February 13, 2008.

Landis WG. Regional Scale Ecological Risk Assessment. University of Nevada Reno. February 4, 2008. Used Distance Learning Center for presentation.

Landis WG, J Ellis, L. Kaminski and A. Markiewicz. Regional scale risk assessment of watersheds in a landscape context. National Center for Environmental Assessment and Synthesis Workshop on USGS Aquatic Gap Analysis Program Santa Barbara CA January 14-17 2008

2007

Landis WG and Bryant PT. Application of population modeling to establish causality using Pacific herring in Puget Sound as a model system. Society for Risk Analysis Annual Meeting, San Antonio TX, December 9-12, 2007.

Sellens LJ, Jewell AT, Markiewicz AJ and Landis WG. Risk Evaluation of Invasive Species Transport Across the U.S. – Canada Border in Washington State. Society for Risk Analysis Annual Meeting, San Antonio TX, December 9-12, 2007.

Landis WG, Bryant PF, Hershberger PK. Analysis of the Decline of Puget Sound Pacific Herring

Stocks: Toxics, Urbanization, Climate Change or Disease? Society of Environmental Toxicology and Chemistry North America Annual Meeting, Milwaukee, WI. November 11-15, 2007

Landis WG. Ellis JE, Kaminski LA and Maginnis CM. Regional assessments of adjacent urbanized watersheds surrounding Bellingham, Washington USA. Society of Environmental Toxicology and Chemistry North America Annual Meeting, Milwaukee, WI. November 11-15, 2007

Landis WG, Bryant PF, Hershberger PK. Application of causal analysis and population modeling to evaluate the decline of the Pacific herring (*Clupea pallasi*) stocks in Puget Sound, USA. Norwegian Institute for Water Research, Oslo, Norway, October 3 2007.

Landis WG. Landscape and regional ecological level risk assessment using the relative risk model. University of Oslo, Oslo Norway October 3, 2007.

Maginnis C, Landis WG. An Integrated Ecological and Human Health risk model for Lake Whatcom, a multiple-use water supply in Whatcom County WA. 2007 Georgia Basin Puget Sound Research Conference, Vancouver, British Columbia March 26–29, 2007. Best Graduate Student Platform presentation

Sellens LJ. , Jewell A, Markiewicz AJ, Landis WG, Risk evaluation of invasive species transport across the U.S. -- Canada border in Washington State. 2007 Georgia Basin Puget Sound Research Conference, Vancouver, British Columbia March 26–29, 2007

Landis WG. Application of population modeling to identify the Eastern Pacific Decadal Oscillation as a factor in the decline the Cherry Point Pacific herring (*Clupea pallasi*) stock. 2007 Georgia Basin Puget Sound Research Conference, Vancouver, British Columbia March 26–29, 2007

Kaminski LA, Ellis JA, Landis WG. Integration of Ecological Risk Assessment and the Gap Analysis Project to Assess Risk to Smolt Production in Developed Watersheds. 2007 Georgia Basin Puget Sound Research Conference, Vancouver, British Columbia March 26–29, 2007

Anderson S. Christensen S. Markiewicz AJ, Landis WG. Ecological Risk Assessment of the Interior Landscape Analysis System Project Area (INLAS): A Pilot Study. 2007 Georgia Basin Puget Sound Research Conference, Vancouver, British Columbia March 26–29, 2007

Landis WG. The Application of Population Modeling to Establish Causality Using Puget Sound Pacific Herring (*Clupea Pallasi*) as a Model System. Pacific Northwest Chapter of SETAC, Port Townsend WA, April 12, 2007

Landis WG. New Paradigms, Old Problems and Normative Science in Ecological Toxicology and Risk Assessment. Keynote address Joint Midwest Chapter of SETAC and Chicago Regional Chapter of SRA Annual Meeting. Argonne IL March 15, 2007.

2006

Landis WG. Anderson SM, Sellens LJ, Markiewicz AJ. The adaptation of regional scale ecological risk assessment for natural resource decision making. Society for Risk Analysis Annual Meeting, Baltimore MD, December 3-6, 2006.

Maginnis C, Landis WG. Screening level integrated ecological and human health risk assessment for Lake Whatcom. Society for Risk Analysis Annual Meeting, Baltimore MD, December 3-6, 2006.

Landis WG, Sellens LJ. Interplay between contamination and the establishment of invasive species or genetically modified organisms at population and landscape scales. Society of Environmental Toxicology and Chemistry North America Annual Meeting, Montreal, Canada November 6-9 2006.

Landis WG, Markiewicz AJ. The future of risk assessment, the modeling of risk landscapes and the management of ecological structures. Society of Environmental Toxicology and Chemistry North America Annual Meeting, Montreal, Canada November 6-9, 2006.

Landis WG, Markiewicz AJ. Causative pathway-weight of evidence as a quantifiable process tied to the analysis of causality and scalable across biological and landscape scales. Society of Environmental Toxicology and Chemistry North America Annual Meeting, Montreal, Canada, November 6-9, 2006.

Landis WG, Kaminski LA. Patterns of population dynamics as important endpoints for ecological risk assessments. Society of Environmental Toxicology and Chemistry North America Annual Meeting, Montreal Canada November 6-9, 2006.

Landis WG. Receptors to populations as parts of complex systems. Arkansas State University, Jonesboro, AK. October 11, 2006.

Landis WG, Measuring sustainability for the long-term management of ecological services. Third International Conference on Environmental Enhancement and Sustainable Development. Hohhot, Inner Mongolia, PR China. August 4-8, 2006.

Landis WG. Codorus Creek to the Androscoggin River, a comparison of risk assessments in the LTRWS Program. National Council for Air and Stream Improvement Northeastern Regional Meeting, Portland ME May 16, 2006.

Landis WG, Kaminski, LA, Patterns in age structure, the normalized effects vector, and the application to diagnostic and predictive population scale risk assessments. Society of Environmental Toxicology and Chemistry-Europe Annual Meeting, The Hague Netherlands, May 7-11, 2006

Chen VC, Landis WG, Preliminary Ecological Risk Assessment of the Lower Androscoggin River Watershed in Maine. Pacific Northwest Chapter of Society of Environmental Toxicology and Chemistry Annual Meeting, April 14-15, 2006 Port Townsend, WA.

Kaminski LA, Landis WG. Small Scale Landscape Risk Assessment for Freshwater Salmonid Production in Whatcom County. Pacific Northwest Chapter of Society of Environmental Toxicology and Chemistry Annual Meeting, April 14-15, 2006 Port Townsend, WA.

Landis WG, Chen VC, Colnar AM, Deines AM, Kushima G, Markiewicz AJ, Pfingst A, Ananda Seebach A and Sellens LJ. Ecological Risk Assessment and Decision Making for Large Spatial and Temporal Scales. New Mexico State University Invited Seminar, Las Cruces NM. Feb 13 2006.

2005

Pfingst, AJ, Chen VC, Landis WG. Relative Risk Assessment of the Androscoggin River Watershed in Maine and New Hampshire. Annual Meeting Society for Risk Analysis. Orlando FL December 6-9 2005.

Landis WG, Colnar AJ, Kaminski A, Kushima G, Seebach, A. Ecological Risk Assessment of Four Invasive Species at Landscape Scales. Annual Meeting Society for Risk Analysis. Orlando FL December 6-9 2005.

Landis, WG, Colnar, A, Kaminski, A, Kushima, G, Seebach, A, Invasive species ecological risk assessment methodology at landscape scales. Annual Meeting Society of Environmental Toxicology and Chemistry, November 13-17, 2005. Baltimore, MD

Sellens, L, Landis, WG. Environmental risk assessment of genetic drift in genetically modified creeping bentgrass (*Agrostis stolonifera* L.). Annual Meeting Society of Environmental Toxicology and Chemistry, November 13-17, 2005. Baltimore, MD

Kaminski, L, Landis, WG. An alternative population level endpoint for use in ecological risk assessment. Annual Meeting Society of Environmental Toxicology and Chemistry, November 13-17, 2005. Baltimore, MD.

Landis, W G., Markiewicz, A. Ecological risk assessment comparison, British Columbia Canada and the Northwestern United States. Annual Meeting Society of Environmental Toxicology and Chemistry, November 13-17, 2005. Baltimore, MD.

Pfingst, A, Chen, V, Landis WG. Relative Risk Assessment of the Androscoggin River Watershed in Maine and New Hampshire. Annual Meeting Society of Environmental Toxicology and Chemistry, November 13-17, 2005. Baltimore, MD.

Landis, WG. Overview, update and discussion on landscape and regional ecological risk assessment using the relative risk model. State-Of-The-Science Review of Probabilistic Regional Risk Assessment Methodologies for Eastern and Western Wildlands sponsored by the USFS. Portland, Oregon September 20, 2005.

Landis, WG, Pfingst A, and Chen V. Update on the Androscoggin River Risk Assessment Project. NCASI LTRWS Science Advisory Panel meeting, September 15, 2005. Alexandria VA.

Landis WG and Sellens, L. Ecological risk assessment for glyphosate resistant bentgrass. Invited talk USEPA ORD Corvallis, September 1, 2005.

Landis, W. G., A. J. Markiewicz, A. Colnar, G. Kushima, A. Pfingst, A. Seebach. Ecological Risk Assessment and Decision Making for Large Spatial and Temporal Scales. British Columbia Ministry of Water, Land and Air Protection, April 20, 2005. Victoria, BC.

Landis, W. G. The Selection of Assessment Endpoints for Population and Regional Scale Ecological Risk Assessments and Restoration. Pacific Northwest Chapter of Society of Environmental Toxicology and Chemistry Annual Meeting, April 14-16, 2005 Port Townsend, WA.

Sellens, L., W. G. Landis. Conceptual Model for Environmental Risk Assessment of Genetic Drift in GM Creeping Bentgrass (Agrostis stolonifera) in Eastern Oregon. Pacific Northwest Chapter of Society of Environmental Toxicology and Chemistry Annual Meeting, April 14-16, 2005 Port Townsend, WA.

Pfingst, A. and Landis, W. G. Relative Risk Assessment of the Androscoggin River Watershed in Maine and New Hampshire: Conceptual Model and Preliminary Results Pacific Northwest Chapter of Society of Environmental Toxicology and Chemistry Annual Meeting, April 14-16, 2005 Port Townsend, WA.

Seebach, A. W. G. Landis. ERA Uncertainty Reduction by Mapping the Nearshore Habitats of Cherry Point, Washington, U.S.A. 2005 Puget Sound Georgia Basin Research Conference, March 29-31, 2005. Seattle, WA

Colnar, A.,W. G. Landis. Regional risk assessment of the European green crab, Carcinus maenas, in Cherry Point, Washington. 2005 Puget Sound Georgia Basin Research Conference, March 29-31, 2005. Seattle, WA

2004

M. Deines, V. Chen, W. G. Landis. Modeling the risks of non-indigenous species introductions using a patch dynamics approach incorporating contaminant effects. Annual Meeting of the Society of Risk Analysis, December 6-8 2004. Palm Springs, CA. Selected best paper for the meeting.

Landis, W. G., A. M. Colnar, A. M. Deines, A. J. Markiewicz. Landscape scale ecological risk assessment of invasive species. Annual Meeting of the Society of Risk Analysis, December 6-8 2004. Palm Springs, CA.

Landis, W. G. Landscape and regional ecological risk assessment using the relative risk model. Annual Meeting of the Society of Risk Analysis, December 6-8 2004. Palm Springs, CA.

Harper-Arabie, R.M. and Landis, W.G. Environmental Toxicology at Western Washington University. Annual Meeting and World Congress Society of Environmental Toxicology and Chemistry, November 14-18, 2004. Portland, OR.

Seebach, A. and Landis, W.G. ERA Uncertainty Reduction by Mapping the Nearshore Habitats of Cherry Point, Washington, U.S.A. Annual Meeting and World Congress Society of Environmental Toxicology and Chemistry, November 14-18, 2004. Portland, OR.

Landis, W.G., Colnar, A.M. and Markiewicz, A.J. Conceptual model for the regional and landscape risk assessment of invasive species. Annual Meeting and World Congress Society of Environmental Toxicology and Chemistry, November 14-18, 2004. Portland, OR.

Landis, W.G. Indirect effects, patch dynamics and complexity theory and their application to landscape scale ecological risk assessment.. Annual Meeting and World Congress Society of Environmental Toxicology and Chemistry, November 14-18, 2004. Portland, OR.

Deines, A.M. and Landis, W.G. Modeling non-indigenous species introductions using a patch-dynamics approach incorporating contaminant effects. Annual Meeting and World Congress Society of Environmental Toxicology and Chemistry, November 14-18, 2004. Portland, OR.

Kushima, G., Markiewicz, A., Schuler, A., Hayes, E.H. and Landis, W.G. Cherry Point Regional Risk Assessment Model: A Risk Management Tool. Annual Meeting and World Congress Society of Environmental Toxicology and Chemistry, November 14-18, 2004. Portland, OR.

Kushima, G., Markiewicz, A. and Landis, W.G. Application of Life Cycle Assessment to Wastewater Treatment Systems. Annual Meeting and World Congress Society of Environmental Toxicology and Chemistry, November 14-18, 2004. Portland, OR.

Pfingst, A.J. and Landis, W.G. Conceptual model development for a multiple stressor landscape scale ecological risk assessment for the Androscoggin River, Maine. Annual Meeting and World Congress Society of Environmental Toxicology and Chemistry, November 14-18, 2004. Portland, OR

Colnar, A.M. and Landis, W.G. Regional risk assessment of the European green crab (*Carcinus maenas*) in Cherry Point, Washington. Annual Meeting and World Congress Society of Environmental Toxicology and Chemistry, November 14-18, 2004. Portland, OR

Landis, WG. My Most Annoying Things; NOEC, Reference Sites and the Misunderstanding of Man's Place in Nature. 13th Annual PNW-SETAC Meeting on. April 15-17, 2004. Fort Worden, Port Townsend, WA

Landis WG, Deines A, Colnar A. General Conceptual Model for the Regional and Landscape Risk Assessment for Invasive Species. 13th Annual PNW-SETAC Meeting on. April 15-17, 2004. Fort Worden, Port Townsend, WA

Landis WG, Deines A, Colnar A. Regional and Landscape Risk Assessment for Invasive Species. 19th Annual Symposium of the United States Regional Association of the International Association for Landscape Ecology: March 30-April 2 2004. Las Vegas, NV.

2003

Landis, W. G., E. Hart Hayes, A. Schuler and A.J. Markiewicz. Use of the relative risk model regional risk assessment as a predictive tool for environmental decision-making. SETAC North America 24th 2003 Annual Meeting, November 9-11, Austin TX

Landis, W. G. The hierarchical patch dynamics paradigm (HPDP) as a multiscale framework for landscape and regional and scale ecological risk assessment. SETAC North America 24th 2003 Annual Meeting, November 9-11, Austin TX

Landis, W. G. Assignment of causality using a probabilistic weight-of-evidence approach in retrospective assessments. SETAC North America 24th 2003 Annual Meeting, November 9-11, Austin TX

Chapman, P F; Brassfield, S; Carlsen, T; Elmegaard, N; Landis, WG; Moe, S; Nacci, D; Spromberg, J; Noel, H. Empirical Approaches to Population Level Ecological Risk Assessment and its Relationship to Mathematical Modeling. Interactive poster discussion presentation. SETAC North America 24th 2003 Annual Meeting, November 9-11, Austin TX

Landis, W. G., E. Hart Hayes and A.J. Markiewicz. Regional Ecological Risk Assessment as an Interactive Management Tool Applied to the Coastal Region of Cherry Point, WA. Estuarine

Research Federation Biannual Meeting 2003, September 14-18, Seattle WA.

Landis, W. G. Quantitative Weight of Evidence Approach in Establishing Causal Linkages for the Decline Of The Cherry Point, WA Pacific Herring. 12th Annual PNW-SETAC Meeting on "Contributions of Environmental Toxicology and Chemistry to Pacific Northwest Resource Management". April 17-19, 2003. Fort Worden, Port Townsend, WA

Landis, W. G. Location, habitat spatial context and history in the evaluation of causation. ASTM Symposium on Landscape Ecology and Wildlife Habitat Evaluation: Critical Information for Ecological Risk Assessment, Land-Use Management Activities, and Biodiversity Enhancement Practices. April 7-9, 2003. Kansas City, KS.

Landis, W. G., E. Hart Hayes and A.J. Markiewicz. Weight of Evidence and Path Analysis Applied to the Identification of Causes of the Cherry Point Pacific Herring Decline. 2003 Georgia Basin-Puget Sound Research Conference. May 31-April 3.Vancouver, BC.

2002

Landis, W. G. Population is the Necessary Unit of a Species Specific Risk Assessment. Landis, WG. SETAC North America 23rd Annual Meeting, November 15-20, 2002, Salt Lake City, Utah.

Landis, W. G, Hart Hayes, E., and Markiewicz, AM. Overlapping Spatial and Temporal Scales in Modeling Landscape Risk. SETAC North America 23rd Annual Meeting, November 15-20, 2002, Salt Lake City, Utah.

Landis, W. G. Landscape level risk assessment and confirmation. Seminar USEPA Corvallis Laboratory, October 28, 2002, Corvallis, OR

Landis, W. G. E. Hart Hayes, and A. M. Markiewicz Overlapping Spatial and Temporal Scales in Modeling Landscape Risk. Aquatic Toxicity Workshop, October 20-23, 2002, Whistler, BC Canada

Landis, W. G. Quantitative Weight of Evidence Approach in Estimating Causal Linkages in Aquatic Systems. Aquatic Toxicity Workshop, October 20-23, 2002, Whistler, BC Canada

Landis, W. G. Invited Speaker. Ecological risk assessment conceptual model formulation for non-indigenous species. Annual Meeting Ecological Society of America. August 4-8,2002. Tucson, AZ.

Landis, W. G. A Monte Carlo Approach to herring weight of evidence. 2002 Herring Summit And Pacific Coast Herring Workshop June 11-13, 2002 Bellingham, Washington

Landis, W. G. Keynote Address: The Western Frontier-The future of risk prediction and the management of ecological systems. SETAC Europe 12th Annual Meeting, 12-16 May 2002, Vienna, Austria.

Landis, W. G. Appropriate landscape scales for ecological risk assessments. SETAC Europe 12th Annual Meeting, 12-16 May 2002, Vienna, Austria.

Markiewicz, A.J., Hart Hayes, E. and Landis, W.G. Regional risk assessment of a marine

habitat: Cherry Point, Washington. SETAC Europe 12th Annual Meeting, 12-16 May 2002, Vienna, Austria

Landis, W.G. Chen, J.C., Duncan, A.B., Luxon, M.A., Markiewicz, A.J., Moraes, R., Obery, A.M., Thomas, J.F., Walker, R., and Wiegers, J.K. Assessing landscape level ecological risks using the relative risk model. SETAC Europe 12th Annual Meeting, 12-16 May 2002, Vienna, Austria

Landis, W. G. Space, Time and Landscape in Environmental Toxicology. Invited seminar speaker, UC Davis Toxicology Program, March 6, 2002.

2001

Landis, W. G., Markiewicz, April J., Thomas, Jill F., Hart Hayes, Emily and Duncan, Bruce. 2001. What Scales Count? The Cherry Point Case Study. Society for Risk Analysis Annual Meeting, December 2-5, 2001, Seattle, WA.

Thomas, Jill F., Obery, Angie M and Landis, W. G. 2001. Use of a Relative Risk Model Ecological Risk Assessment as a Predictive Model for Decision-making. Society for Risk Analysis Annual Meeting, December 2-5, 2001, Seattle, WA.

Thomas, Jill F., Bodensteiner, Leo R., Hall, Tim J., Obery, Angie M. and Landis, W. G. 2001. Confirmation of a Relative Risk Model Ecological Risk Assessment Using Multivariate Statistics. Society for Risk Analysis Annual Meeting, December 2-5, 2001, Seattle, WA.

Landis, W.G. Chen, J.C., Duncan, A.B., Luxon, M.A., Markiewicz, A.J., Moraes, R., Obery, A.M., Thomas, J.F., Walker, R., * and Wiegers, J.K. Assessing landscape level ecological risks using the relative risk model. Society for Risk Analysis Annual Meeting, December 2-5, 2001, Seattle, WA.

Landis, W. G., Markiewicz, April J., Thomas, Jill F., Hart Hayes, Emily and Duncan, Bruce. 2001. What Scales Count? The Cherry Point Case Study. Platform Presentation at the 22nd Annual Meeting in North America of the Society of Environmental Toxicology and Chemistry (SETAC), November 11-15, 2001, Baltimore, MD.

Markiewicz, April J., Hart Hayes, Emily, and Landis, W. G. 2001. Ecological Risk Assessment of a Marine Environment: Cherry Point, WA. Poster Presentation at the 22nd Annual Meeting in North America of the Society of Environmental Toxicology and Chemistry (SETAC), November 11-15, 2001, Baltimore, MD.

Chen, Joy C. and Landis, W. G. 2001. Multiple Physical and Chemical Stressor Risk Assessment for the Squalicum Creek Watershed. Platform Presentation at the 22nd Annual Meeting in North America of the Society of Environmental Toxicology and Chemistry (SETAC), November 11-15, 2001, Baltimore, MD.

Thomas, Jill F., Obery, Angie M and Landis, W. G. 2001. Use of a Relative Risk Model Ecological Risk Assessment as a Predictive Model for Decision-making. Poster Presentation at the 22nd Annual Meeting in North America of the Society of Environmental Toxicology and Chemistry (SETAC), November 11-15, 2001, Baltimore, MD.

Thomas, Jill F., Bodensteiner, Leo R., Hall, Tim J., Obery, Angie M. and Landis, W. G. 2001. Confirmation of a Relative Risk Model Ecological Risk Assessment Using Multivariate Statistics. Platform Presentation at the 22nd Annual Meeting in North America of the Society of Environmental Toxicology and Chemistry (SETAC), November 11-15, 2001, Baltimore, MD.

Landis, W. G. Modeling the population dynamics of the Pacific herring in the context of toxic and other stressors. Pacific Northwest Chapter of the Society of Environmental Toxicology and Chemistry Annual Meeting, Coer de Lane, ID. April 13, 2001.

Landis, W. G. April J. Markiewicz, Jill F. Thomas, Emily Hart Hayes and P. Bruce Duncan. Regional Risk Assessment Predictions for the Decline and Future Management of the Cherry Point Herring Stock and Region. Puget Sound Research Conference, Bellevue, WA. February 12-14, 2001.

2000

Obery, A. M. and W. G. Landis. Application of the relative risk model for Codorus Creek watershed relative ecological risk assessment: an approach for multiple stressors. 21st Annual Meeting of the Society of Environmental Toxicology and Chemistry, Nashville, TN November 11-16, 2000.

Markiewicz, A. J., R. LaCroix, M. A. Macrander, and W.G. Landis, Derivation of site-specific BTEX action levels for Whatcom Cr, Bellingham, WA. 21st Annual Meeting of the Society of Environmental Toxicology and Chemistry, Nashville, TN November 11-16, 2000.

Landis, W. G., Lenart, L. A. The Effects of Patch Size, Arrangement and Configuration on the Propagation of Toxicant Effects in a Landscape. 21st Annual Meeting of the Society of Environmental Toxicology and Chemistry, Nashville, TN November 11-16, 2000.

Landis, W. G., Obery, A. M., Thomas, J. F., Walker, R. Landscape Toxicology and the Development of Regional Risk Assessment. 21st Annual Meeting of the Society of Environmental Toxicology and Chemistry, Nashville, TN November 11-16, 2000.

Landis, W. G., Lenart, L. A., Spromberg, J. A. Risks Due to Horizontal and Vertical Transfer of Novel Genetic Elements. 21st Annual Meeting of the Society of Environmental Toxicology and Chemistry, Nashville, TN November 11-16, 2000.

Landis, W. G. Eulogy for the reference site. 21st Annual Meeting of the Society of Environmental Toxicology and Chemistry, Nashville, TN November 11-16, 2000.

Landis, W. G. Eulogy for the reference site. Pacific Northwest Chapter of the Society of Environmental Toxicology and Chemistry Annual Meeting, Olympia, WA. May 12, 2000.

Landis, W. G., Matt Luxon, Angela Obery Leo Bodensteiner and John F. McLaughlin. Development of a Relative Risk Methodology for Multiple Stressors at Regional Scales. International Association for Landscape Ecology Annual Meeting, Ft. Lauderdale, FL. April 16-19, 2000

Landis, W. G. and J. F. McLaughlin, If Not Recovery, Then What? Tenth ASTM Symposium Environmental Toxicology and Risk Assessment: Science, Policy and Standardization-Implications for Environmental Decisions. Toronto, Canada April 10-12, 2000.

Luxon, M. A. and W. G. Landis. Development and utility of the relative risk model in the assessment and management of freshwater systems. Tenth ASTM Symposium Environmental Toxicology and Risk Assessment: Science, Policy and Standardization-Implications for Environmental Decisions. Toronto, Canada April 10-12, 2000

Landis, W. G. Biomarkers and Bio-indicators: Extrapolation from molecular markers to population and ecological effects. Symposium on the Use of Biomarkers in Environmental Risk Assessment. Portland, Oregon, January 10, 2000.

1999

McLaughlin, J.F. and W.G. Landis. Forecasting Ecological Sustainability Using Dynamic Risk Models. Society for Risk Analysis 1999 Meeting. Atlanta, GA December 5-8, 1999

Landis, W. G., L. M. Oakes, L. M. Macovsky. Spatially Explicit Population Models for Risk Assessment. Society for Risk Analysis 1999 Meeting. Atlanta, GA December 5-8, 1999

Oakes, L. M., L. M. Macovsky, W. G. Landis, and J. F. McLaughlin. Three Spatially Explicit Patch Dynamic Models, the Incorporation of Life Stages and Regional Risk Assessment. 1999 SETAC Annual Meeting, Philadelphia, PA. November 14-18, 1999.

Landis, W. G., M. Luxon, M., J. Klacan, L. R. Bodensteiner, Regional-Scale Risk Assessment with Confirmational Sampling for the Willamette and McKenzie Rivers, Oregon. 1999 SETAC Annual Meeting, Philadelphia, PA. November 14-18, 1999.

Landis, W. G., J. F. McLaughlin, Sustainability Defined in a Risk Assessment Framework for Multiple Scales. 1999 SETAC Annual Meeting, Philadelphia, PA. November 14-18, 1999.

McLaughlin, J.F. And W. G. Landis. A Quantitative Framework For Predicting Ecological Sustainability. Annual Meeting of the Ecological Society of America. Spokane, WA. August 1999.

Landis, W. G. and J. F. McLaughlin. Risky Sustainability. 1999 Pacific Northwest SETAC Meeting, Vancouver, BC. May 1999.

Landis, W. G. Paradigm Lost, and Maybe Found: The Risk Assessment of Dynamic, Nonlinear and Historical Ecological Landscapes. Department of Zoology, Michigan State University, An Arbor, February 1999.

1998

Lenart, L.A, W. G. Landis, Dose-response curves and patch arrangement: implications for field extrapolations and risk assessment. SETAC Annual Meeting, Charlotte, NC November 14-18, 1998.

Landis, W. G. Application and significance of nonequilibrium ecological dynamics in ecological risk assessment. . SETAC Annual Meeting, Charlotte, NC November 14-18, 1998.

McLaughlin, J.F., W. G. Landis, Applying Ecosystem Valuation to Regional Ecological Risk Assessment and Management. SETAC Annual Meeting, Charlotte, NC November 14-18, 1998

Landis, W. G. Application and significance of nonequilibrium ecological dynamics in ecological risk assessment. SETAC Annual Meeting, Charlotte, NC November 14-18, 1998.

Landis, W.G., Lenart, L., Macovsky, L.R., Institute of Environmental Toxicology and Chemistry, McLaughlin, J.F., Application of patch and metapopulation dynamics to the understanding of risks at a landscape level. SETAC Annual Meeting, Charlotte, NC November 14-18, 1998.

Anderson, M.S., and W. G. Landis ,Interaction between landscape forms, the impacts of contaminants, and other stresses. . SETAC Annual Meeting, Charlotte, NC November 14-18, 1998.

Landis, W. G. Keynote Address-Paradigm Lost, and Maybe Found; The Risk Assessment of Dynamic, Non-linear and Historical Ecological Landscapes. Symposium on the Ecological Risk Assessment of Environmental Endpoints, University of Auckland, Auckland, New Zealand. October 28-29, 1998.

Landis, W. G., L. R. Bodensteiner and J. F. McLaughlin. The Relative Rank Risk Model for Regional-Scale Risk Assessment and Potential Applications in Freshwater and Terrestrial Systems. Symposium on the Ecological Risk Assessment of Environmental Endpoints, University of Auckland, Auckland, New Zealand. October 28-29, 1998.

Lenart, A. and W. G. Landis. Dose response curves and patch arrangement: implications for field and risk assessment. SETAC Symposium on Ecosystem Vulnerability, Bel Harbor, WA. August 17-20, 1998.

Landis, W. G., L. Lenart, L. R. Macovsky and J. F. McLaughlin. Application of patch and metapopulation dynamics to understanding toxicant impacts at a landscape level. SETAC Symposium on Ecosystem Vulnerability, Bel Harbor, WA. August 17-20, 1998.

Macovsky, L. M. and W. G. Landis. The effect of toxicant related mortality upon metapopulation dynamics: a laboratory model. SETAC Symposium on Ecosystem Vulnerability, Bel Harbor, WA. August 17-20, 1998.

Landis, W. G., L. R. Bodensteiner and J. F. McLaughlin. The Relative Rank Risk Model for Regional-Scale Risk Assessment and Potential Applications in Freshwater and Terrestrial Systems. SETAC Symposium on Ecosystem Vulnerability, Bel Harbor, WA. August 17-20, 1998.

McLaughlin, J. F. and W. G. Landis. Integrating stressor impacts from local to landscape levels using field tests of metapopulation models. SETAC Symposium on Ecosystem Vulnerability, Bel Harbor, WA. August 17-20, 1998.

Landis, W, G. and J. F. McLaughlin. Design criteria and derivation of indicators for ecological position, direction and risk. SETAC Symposium on Ecosystem Vulnerability, Bel Harbor, WA. August 17-20, 1998.

Landis, W. G. Paradigm Lost: and maybe found. USEPA Duluth, MN. July 23, 1998.

Landis, W. G., L. R. Bodensteiner and J. F. McLaughlin. The Relative Rank Risk Model for Regional-Scale Risk Assessment and Potential Applications in Freshwater and Terrestrial Systems. Pacific Northwest SETAC Annual Meeting, Bellingham, WA May 15, 1998.

Landis, W. G. Uncertainty in the Extrapolation from Individuals to Landscapes in Ecological Risk Assessment. National Health and Ecological Effects Laboratory Symposium on Extrapolation in Risk Assessment, April 27-30, 1998, Research Triangle Park, North Carolina.

Landis, W. G. The consequences of population and community dynamics in the assessment of ecological risk at the regional-scale. Invited Seminar, U.S. EPA Newport, OR. March 19, 1998.

Landis, W. G. New paradigms for ecological assessing risks. Invited Seminar, Department of Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR. March 16, 1998

1997

J. Wiegers, H. M. Feder, W G. Landis, L. Mortensen, D. G. Shaw and V. J. Wilson. The Use of a Habitat Based, Ranking Ecological Risk Assessment Technique for the Prediction of Environmental Risk In Port Valdez, Alaska. Pacific Northwest Society of Environmental Toxicology and Chemistry Annual Meeting, Richmond, WA May 15-16 1997.

Fairbrother, A., W. G. Landis, V. J. Wilson, A. J. Markiewicz, and G. Mann. Development of a checklist for the tier-1 ecological risk assessment of contaminated sites in British Columbia. Pacific Northwest Society of Environmental Toxicology and Chemistry Annual Meeting, Richmond, WA May 15-16 1997.

J. K. Weigers, W. G. Landis, H. M. Feder and D. G. Shaw. Rank-Based Ecological Risk Assessment for Port Valdez, Alaska. American Association for the Advancement of Science Arctic Conference, September 22-25, 1997.

Mortensen, L. S. and W. G. Landis Evaluation of Phytochelatin Production as an Exposure Biomarker for Metals Through Laboratory Testing of Algae. Society of Environmental Toxicology and Chemistry 18th Annual Meeting, San Francisco, CA November 16-20, 1997.

Wilson, V. J. and W. G. Landis The Impact of Soil Composition on the Earthworm, *Eisenia foetida*, Response to a Hydrocarbon Toxicant. Society of Environmental Toxicology and Chemistry 18th Annual Meeting, San Francisco, CA November 16-20, 1997.

J. Wiegers, H. M. Feder, W G. Landis, L. Mortensen, D. G. Shaw and V. J. Wilson. The Use of a Habitat Based, Ranking Ecological Risk Assessment Technique for the Prediction of Environmental Risk In Port Valdez, Alaska. Society of Environmental Toxicology and Chemistry 18th Annual Meeting, San Francisco, CA November 16-20, 1997.

Fairbrother, A., W. G. Landis, V. J. Wilson, A. J. Markiewicz, and G. Mann. Development of a checklist for the tier-1 ecological risk assessment of contaminated sites in British Columbia. Society of Environmental Toxicology and Chemistry 18th Annual Meeting, San Francisco, CA November 16-20, 1997.

1996

Landis, W. G., R. A. Matthews, and G. B. Matthews. The Layered and Historical Impacts of Xenobiotics to Ecological Structures. Department of Biology, Oklahoma State University, Stillwater, OK February 9, 1996.

Landis, W. G., R. A. Matthews, and G. B. Matthews. The Stability Myth, and An Alternative: Community Conditioning. Department of Biology, University of Victoria, Victoria BC, Canada, March 8, 1996.

Landis, W. G., R. A. Matthews, and G. B. Matthews. After Remediation: The Metapopulation Dynamics of Organisms After Cleanup. Second Annual Meeting of the Environmental Management Association. Bloomington, IN March 23, 1996.

Landis, W. G. and J. A. Spromberg. The Use of Metapopulation Models in Ecological Risk Assessment: Impacts of Toxicants Throughout an Ecological Landscape. Sixth Symposium on Environmental Toxicology and Risk Assessment: Modeling and Risk Assessment. Orlando, FL, April 16, 1996.

Landis, W. G. Are Indirect Effects Important in Risk Assessment? Annual Meeting of the Pacific Northwest Chapter of SETAC. Corvallis, OR, May 18, 1996.

Landis, W. G., R. A. Matthews and G. B. Matthews. The Layered and Historical Impacts of Xenobiotics to Ecological Structures. Oregon Graduate Institute, Beaverton, OR, May 31, 1996.

Landis, W. G., R. A. Matthews and G. B. Matthews. The Recovery Myth and Implications for Environmental Management. US Geological Survey, Tacoma, WA. September 13, 1996.

Landis, W. G. and M. Fellows. The Introduction of Community Conditioning, Non-Equilibrium Dynamics, and Island Biogeography into a High School Curriculum. 1996 Annual Meeting of the Society for Environmental Toxicology and Chemistry, Washington, D. C. November 17-21, 1996.

Landis, W. G. , B. John , and J. A. Spromberg. Metapopulation Dynamics, Indirect Effects, Multiple Discrete Outcomes and Uncertainty in Ecological Risk Assessment. 1996 Annual Meeting of the Society for Environmental Toxicology and Chemistry, Washington, D. C. November 17-21, 1996.

Landis, W. G., A. J. Markiewicz, S. A. Kelly , R. A. Matthews, and G. B. Matthews. The Impacts of Multiple Stressors to Model Ecological Structures. 1996 Annual Meeting of the Society for Environmental Toxicology and Chemistry, Washington, D. C. November 17-21, 1996.

Matthews, R. A. A. J. Markiewicz, V. L. Harter, and W. G. Landis , Incorporating Detrital Conditioning In Outdoor Microcosms Dosed With JP-8 Jet Fuel. 1996 Annual Meeting of the Society for Environmental Toxicology and Chemistry, Washington, D. C. November 17-21, 1996.

Wiegers, J. K., W. G. Landis, L. S. Mortensen, and V. J. Wilson, A Framework for Assessing Relative Risks Associated with Multiple Stressors in Port Valdez, Alaska. 1996 Annual Meeting

of the Society for Environmental Toxicology and Chemistry, Washington, D. C. November 17-21, 1996.

1995

Landis, W. G. Chaos, Complexity and Environmental Toxicology. Fisheries Seminar, University of Washington, January 23, 1995

Landis, W. G., G. Mobus, G. B. Matthews, R. A. Matthews C. J. Pickreign and J. Spromberg. Artificial Intelligence Based Data Analysis, Visualization Tools and Computer Simulation Models for the Ecological Risk Assessment of Biotechnology Based Products U. S. EPA, Corvallis, OR, February 23, 1995.

Kelly, S. A. and W. G. Landis. Evaluation of patterns in aquatic community dynamics following multiple stress events using the Standard Aquatic Microcosm. ASTM Fifth Symposium on Environmental Toxicology and Risk Assessment: Biomarkers and Risk Assessment Denver, CO, April 3-5, 1995.

Markiewicz, A. J., R. A. Matthews, and W. G. Landis. Comparison of degradative rate responses in two generic microcosms: the standardized aquatic microcosm and the mixed flask culture microcosm. ASTM Fifth Symposium on Environmental Toxicology and Risk Assessment: Biomarkers and Risk Assessment Denver, CO, April 3-5, 1995.

Zukowski, A., K. Davies, R. A. Matthews, and W. G. Landis. The synergistic effects of chlorine and water soluble fraction of the turbine fuel, JP-8, on the sand dollar, *Dendraster excentricus*. ASTM Fifth Symposium on Environmental Toxicology and Risk Assessment: Biomarkers and Risk Assessment Denver, April 3-5, 1995.

Landis, W. G., R. A. Matthews and G. B. Matthews. Extrapolation from the laboratory to the field: community conditioning, spatial heterogeneity and nonlinear dynamics as unifying themes. ASTM Fifth Symposium on Environmental Toxicology and Risk Assessment: Biomarkers and Risk Assessment Denver, April 3-5, 1995.

Landis, W. G., R. A. Matthews, and G. B. Matthews. Non-equilibrium Dynamics and Alternatives to the Recovery Model in Ecological Risk Assessment of Contaminated Sediments. SETAC Sediment Risk Assessment Workshop, Asilomar, CA, April 24-28, 1995.

Landis, W. G., R. M. Matthews and G. B. Matthews. Organismal and Non-organismal Structures in Environmental Toxicology and Risk Assessment. PNWSETAC Annual Meeting, University of Washington, Seattle, WA, May 11-12, 1995.

Kelly, S. A. and W. G. Landis. Community Conditioning Confirmed in a Multiple Stressor Microcosm. . PNWSETAC Annual Meeting, University of Washington, Seattle, WA, May 11-12, 1995.

Spromberg, J. A. and W. G. Landis. Metapopulation Dynamics as a Model for Toxicant Impact in Patchy Environments. PNWSETAC Annual Meeting, University of Washington, Seattle, WA. May 11-12, 1995.

Pickreign, C. J., G. B. Matthews, R. A. Matthews, and W. G. Landis. Riggle: A Program for the Dynamic Conceptual Time Series Analysis of Hypervariate Data and Its Application to

Ecotoxicology. PNWSETAC Annual Meeting, University of Washington, Seattle, WA. May 11-12, 1995.

Landis, W. G., J. A. Spromberg, G. Mobus, C. Pickreign, and G. B. Matthews. Non-equilibrium Models, the Patch Dynamics of Horizontal Gene Transfer, Competitive Interactions and Implications for the Risk Assessment of Biotechnology-based Products. USEPA Biotechnology Risk Assessment Symposium, Pensacola, FL, June 6-9, 1995.

Spromberg, J. A. and W. G. Landis. Metapopulation Dynamics As a Model For Toxicant Impact in Patchy Environments. SETAC Annual Meeting, Vancouver BC, Canada, November 5-11, 1995.

S.A. Kelly, A.J. Markiewicz, W.G. Landis, R.A. Matthews, and G.B. Matthews. Community Conditioning Confirmed In a Multiple Stressor Microcosm. SETAC Annual Meeting, Vancouver BC, Canada, November 5-11, 1995.

Landis, W. G. Laboratory to Field Extrapolations: Organismal and Non-organismal Structures in Environmental Toxicology and Risk Assessment. SETAC Annual Meeting, Vancouver BC, Canada November 5-11, 1995.

Pickreign, C. J., G. B. Matthews, R. A. Matthews, and W. G. Landis. Riggle: A program for the dynamic conceptual time series analysis of hypervariate data and its application to ecotoxicology. SETAC Annual Meeting, Vancouver BC, Canada, November 5-11, 1995.

1994

Landis, W. G. , R. A. Matthews, and G. B. Matthews. Community Conditioning as an Alternative to the Stability and Recovery of Ecosystem Hypothesis in Ecological Risk Assessment. ASTM Symposium on Environmental Toxicology and Risk Assessment, Montreal, Quebec, Canada, April 12, 1994.

Matthews, G. B., R. A. Matthews and W. G. Landis. Artificial Intelligence Based Data Analysis and Visualization Tools for Ecological Risk Assessment. ASTM Symposium on Environmental Toxicology and Risk Assessment, Montreal, Quebec, Canada, April 12, 1994

Landis, W. G., R. A. Matthews, A. J. Markiewicz, and G. B. Matthews. Structural and Community Level Comparison of Turbine Fuel Test Results Using the Standardized Aquatic Microcosm (SAM) and the Mixed Flask Culture (MFC) Protocols. ASTM Symposium on Environmental Toxicology and Risk Assessment, Montreal, Quebec, Canada, April 12, 1994.

Landis, W. G., R. A. Matthews, and G. B. Matthews. The Recovery Myth and an Alternative-Community Conditioning. Annual Meeting of the Pacific Northwest Chapter of the Society for Environmental Toxicology and Chemistry, University of Victoria, Victoria, British Columbia, Canada, May 21, 1994.

Landis, W. G., R. A. Matthews, G. B. Matthews, and A. M. Markiewicz. The Community Conditioning Hypothesis and the Dynamics of Stressed Ecological Systems. Ecological Society of America Workshop Relevancy of Ecological Data to Pesticide Registration. Knoxville, TN, August 7, 1994.

Landis, W. G. Chaos, Complexity and Environmental Policy. Sequim Lecture and Discussion Club, Sequim, WA, Sept 2, 1994.

Landis, W. G., R. A. Matthews, and G. B. Matthews. The Balance of Nature Myth: Alternatives and Implications for Environmental Policy. Sigma Xi Lecture, Western Washington University, Bellingham, WA October 13, 1994.

Landis, W. G., R. A. Matthews, M. A. Roze. and G. B. Matthews. The Stability Myth and the Dynamics and Patterns of Xenobiotic Impacts to Ecological Systems. SETAC 94, Denver, CO, October 1994.

Landis, W.G., M.J. Roze, G.B. Matthews, S. Dominguez, A. Fairbrother. A Multivariate Artificial Intelligence Approach to the Evaluation of Biomarkers Under Field Conditions II. SETAC 94, Denver, CO October 1994.

Matthews, R.A. , W.G. Landis, and G.B. Matthews. Application of the Community Conditioning Hypothesis to the Design of Multispecies Toxicity Tests. SETAC 94, Denver, CO, October 1994.

Landis, W.G., R.A. Matthews, and G.B. Matthews. The Inherent Limitations of Population Modeling in Environmental Risk Assessment and an Alternative: Community Conditioning. SETAC 94, Denver, CO, October 1994.

Landis, W. G. Chaos, Complexity and Environmental Policy. Sequim Association of Retired Scientists and Engineers, Sequim, WA , November 11, 1994.

1993

Landis, W. G., R. A. Matthews and G. B. Matthews. Community level responses to toxicant stress as evaluated by nonmetric clustering and multivariate projections, implications for resource damage and risk assessment. U. S. EPA ERL Corvallis, Corvallis, OR, January 1993.

Landis, W. G., R. A. Matthews, and G. B. Matthews. Ecosystem dynamics: wormspace, chaos and the implications for ecological risk assessment. Keynote Address, Ecological Risk Assessment. USEPA Regional Risk Assessment Annual Meeting, Atlanta, GA, March 4, 1993.

Landis, W. G., Matthews, R. A. and Matthews, G. B. Ecosystem Dynamics: Wormspace, chaos and the implications for ecological risk assessment. Lecture, Classic Papers in Aquatic Science Course, University of Washington, Seattle, WA, March 6, 1993.

Landis, W. G., R. A. Matthews and G. B. Matthews. Ecosystem dynamics: wormspace, chaos and the implications for ecological risk assessment. USEPA Region 10 Risk Assessment Seminar Series. Seattle, WA, March 24, 1993.

Matz, A. C., R.S. Bennett and W.G. Landis. Effects of azinphos-methyl on bobwhite: a comparison of laboratory and field results. Society of Environmental Toxicology and Chemistry World Congress, Lisbon, Portugal, March 29, 1993.

Landis, W. G., R. A. Matthews and G. B. Matthews. Oscillations detected by multivariate analysis in microcosm toxicity tests with complex toxicants: implications for risk assessment.

Society of Environmental Toxicology and Chemistry World Congress, Lisbon, Portugal, March 30, 1993.

Matthews, G. B., W. G. Landis, and R. A. Matthews. Nonmetric clustering and association analysis: risk assessment implications for the interpretation of multispecies toxicity tests and field monitoring. Society of Environmental Toxicology and Chemistry World Congress, Lisbon, Portugal, March 30, 1993.

Grue, C. and W. G. Landis. Indirect effects of contaminants on aquatic wildlife. Society of Environmental Toxicology and Chemistry World Congress, Lisbon, Portugal, March 30, 1993.

G. B. Matthews, W.G. Landis, and R. A. Matthews. Nonmetric clustering and association analysis: implications for the evaluation of multispecies toxicity tests and field monitoring. April 23, 1993.

Landis, W. G., R. A. Matthews, G. B. Matthews. Oscillations detected by multivariate analysis in microcosm toxicity tests with complex toxicants: implications for biomonitoring and risk assessment. ASTM Symposium Environmental Toxicology and Risk Assessment, Atlanta, GA, April 27, 1993.

Matthews, G. B., W. G. Landis and R. A. Matthews. Nonmetric clustering and association analysis: implications for the evaluation of multispecies toxicity tests and field monitoring. ASTM Symposium Environmental Toxicology and Risk Assessment, Atlanta, GA, April 27,1993.

Sandberg, R. S. and W. G. Landis. Use of the mixed flask culture (MFC) microcosm protocol to investigate the effects of a pulsed release of Jet-A turbine fuel from sediments. 1993 Annual Meeting Pacific Northwest Chapter of the Society of Environmental Toxicology and Chemistry, Newport OR, May 20-22, 1993.

Rodgers, S. C. and W. G. Landis. Evaluation of community structures vs. community function after exposure to the turbine fuel Jet-A. 1993 Annual Meeting Pacific Northwest Chapter of the Society of Environmental Toxicology and Chemistry, Newport OR, May 20-22, 1993.

Markiewicz, A. J., R. A. Matthews, and W. G. Landis. Comparison of the degradation of water soluble components in jet fuel using the standardized aquatic microcosm (SAM) and the mixed flask microcosm (MFC). 1993 Annual Meeting Pacific Northwest Chapter of the Society of Environmental Toxicology and Chemistry, Newport, OR, May 20-22, 1993.

Landis, W. G., A. J. Markiewicz, R. A. Matthews, and G. B. Matthews. Non-linear Dynamics of Microcosm Experiments after Toxicant Stress Evaluated by Response Volume Projections (Space-Time Worms). 1993 Annual Meeting Pacific Northwest Chapter of the Society of Environmental Toxicology and Chemistry, Newport, OR, May 22, 1993

Landis, W. G., R. A. Matthews, and G. B. Matthews. Use of Novel Methods and the Application of Non-linear Dynamics to the Evaluation of Ecosystem Impacts. Seminar National Oceanic and Atmospheric Administration Hazardous Materials Team, Seattle, WA , June 21, 1993.

Landis, W. G. First you Have to Have Exposure. Reporting on Environmental Risk: a Conference for Journalists. Foundation for American Communications. Columbus, OH, September 11, 1993.

Matthews, G. B., R. A. Matthews, and W. G. Landis. Nonmetric Clustering and Association Analysis and its Use in Hazard Assessment. SETAC Short Course. Houston, TX, November 1993.

Landis, W. G., R. A. Matthews, and A.J. Markiewicz, and G. B. Matthews. Comparison of Test Results in the Evaluation of the WSF of Several Jet Fuels Using the Standardized Aquatic Microcosm and the Mixed Flask Culture Protocols. Annual Meeting Society of Environmental Toxicology and Chemistry, Houston, TX, November 1993.

Matthews, G. B. , W. G. Landis, and R. A. Matthews. Response Volumes (Space-time Worms) as a Method for the Visualization of Ecosystem Dynamics and Indirect Effects. Annual Meeting Society of Environmental Toxicology and Chemistry, Houston, TX, November 1993.

Landis, W. G., R. A. Matthews, and G. B. Matthews. Non-linear Dynamics of Microcosm Ecosystems and the Inherent Limitations of Risk Assessment. Annual Meeting Society of Environmental Toxicology and Chemistry, November 1993, Houston, TX

Landis, W. G., R. A. Matthews, and G. B. Matthews. Characterization and Classification of Direct and Indirect Effects at the Community and Ecosystem Levels. Annual Meeting Society of Environmental Toxicology and Chemistry, Houston, TX, November 1993.

Markiewicz, A. J., R. A. Matthews, and W. G. Landis. Comparison of the Degradation of Water Soluble Components in Jet Fuel Using the Standard Aquatic Microcosm (SAM) and the Mixed Flask Microcosm (MFC). Annual Meeting Society of Environmental Toxicology and Chemistry, Houston, TX, November 1993.

Rodgers, S. C. and W. G. Landis. Evaluation of Community Structure and Community Function After Exposure to the Turbine Fuel Jet-A. Annual Meeting Society of Environmental Toxicology and Chemistry, Houston, TX, November 1993.

Sandberg, R. S., M. J. Roze, and W. G. Landis. Use of the Mixed Flask Culture (MFC) Microcosm Protocol to Investigate the Effects of a Pulsed Release of Jet-A. Annual Meeting Society of Environmental Toxicology and Chemistry, Houston, TX, November 1993.

1992

Matz, A. C., R. S. Bennett, W. L. Griffis, and W. G. Landis. Development of a method for the monitoring of agroecosystem and hazardous waste site contamination using galliform chicks. ASTM Environmental Toxicology and Risk Assessment Symposium, Pittsburgh, PA, April 27, 1992.

Landis, W. G., G. B. Matthews, R. A. Matthews, and N.J. Shough. Evaluation of the aquatic toxicity of the turbine fuel Jet-A using single species and microcosm toxicity tests. ASTM Environmental Toxicology and Risk Assessment Symposium, Pittsburgh, PA, April 27, 1992.

G. B. Matthews, R. A. Matthews, and W. G. Landis. Multivariate analyses of data from aquatic toxicity microcosm studies: a comparison of three statistical tests. ASTM Environmental Toxicology and Risk Assessment Symposium, Pittsburgh, PA, April 27, 1992.

Landis, W. G. Risk assessment of degradative elements and organisms. EPA-Corvallis Biotechnology Team, Corvallis, OR, May 15, 1992.

Landis, W. G., G. B. Matthews and R. A. Matthews. The use of multispecies toxicity tests and their role in environmental risk assessment. School of Fisheries Seminar, University of Washington, Seattle, WA, May 21, 1992.

Matthews, G. B., R. A. Matthews, and W. G. Landis. Multivariate analyses of data from aquatic toxicity microcosm studies: a comparison of three statistical tests. Pacific Northwest SETAC Annual Meeting, Bellingham, WA, June 26-27, 1992.

Matz, A. C., R. S. Bennett, and W. G. Landis. Development of a method for monitoring chemical contamination using galliform chicks. Pacific Northwest SETAC Annual Meeting, Bellingham, WA, June 26-27, 1992.

Landis, W. G., G. B. Matthews, R. A. Matthews, and N.J. Shough. Evaluation of the aquatic toxicity of the turbine fuel Jet-A using single species and microcosm toxicity tests. Pacific Northwest SETAC Annual Meeting, Bellingham, WA, June 26-27, 1992.

Keel, L. W. and W. G. Landis. Sublethal toxicity of copper to the sea anemone *Anthropleura elegantissima*. Pacific Northwest SETAC Annual Meeting, Bellingham, WA, June 26-27, 1992.

Landis, W. G., Comparison and contrast of the organophosphorus acid anhydrases from eucaryotic sources. Wildlife Disease Association Annual Meeting, University of Texas, El Paso, TX, August 10, 1992.

Landis, W. G., R. Sahakian, F. B. Taub and J. H. Taub. Population effects and community dynamics in the standardized aquatic microcosm-modeling compared to historical data sets. Annual Meeting Society of Environmental Toxicology and Chemistry, Cincinnati, OH, November 1992.

Landis, W. G. , R. A. Matthews, A. J. Markiewicz, N. J. Shough and G. B. Matthews. Evaluation of the aquatic toxicity of two turbine fuels using microcosm toxicity tests. Annual Meeting Society of Environmental Toxicology and Chemistry, Cincinnati, OH, November 1992.

Matthews, G. B., W. G. Landis, and R. A. Matthews. Replicability of the control group response in the SAM. Annual Meeting Society of Environmental Toxicology and Chemistry, Cincinnati, OH, November 1992.

Landis, W. G., Comparison and contrast of the organophosphorus acid anhydrases from eucaryotic sources. Annual Meeting Society of Environmental Toxicology and Chemistry, Cincinnati, OH, November 1992.

Matz, A. C., R. S. Bennett and W. G. Landis. Effects of azinphos-methyl on bobwhite: a comparison of laboratory and field results. Annual Meeting Society of Environmental Toxicology and Chemistry, Cincinnati, OH, November 1992.

Landis, W. G. and A. Sergeant, Incorporation of multivariate techniques to the performance of ecological risk assessments. Annual Meeting Society of Environmental Toxicology and Chemistry, Cincinnati, OH, November 1992.

Landis, W. G., R. A. Matthews, and G. B. Matthews, Endpoints: art or artifact? Annual Meeting Society of Environmental Toxicology and Chemistry, Cincinnati, OH, November 1992.

Matthews, G. B., W. G. Landis and R. A. Matthews. Nonmetric clustering and association analysis: an artificial intelligence approach to multispecies data. Annual Meeting Society of Environmental Toxicology and Chemistry, Cincinnati, OH, November 1992.

1991

Landis, W. G. Factors in the risk assessment of degradative plasmids in bacterial populations. Northwest Chapter of the Society for Risk Assessment. University of Washington, Seattle, WA, January 18, 1991.

Landis, W. G. Chemical weapons and the environment. Bellingham Rotary Club, Bellingham, WA. February 11, 1991.

Landis, W. G. Environmental pollution, the view of an environmental toxicologist. 1991 AG-Forestry study group, Bellingham, WA, April 4, 1991.

Landis, W. G. Environmental effects of the gulf war-chemical weapons. WWU Symposium Series on the Persian Gulf War. Western Washington University, Bellingham, WA, April 10, 1991.

Landis, W. G., N. A. Chester and M. V. Haley. Utility of the standardized aquatic microcosm in the risk assessment of degradative bacteria. ASTM First Symposium on Environmental Toxicology and Risk Assessment, Atlantic City, NJ, April 14, 1991.

Landis, W. G. Chemical weapons and the environment. Bellingham Bay Rotary Club, Bellingham, WA, May 28, 1991.

Landis, W. G. Review of the risk assessment of selenium and Kesterson reservoir. USEPA West Coast Risk Assessment Workshop. Seattle, WA, June 12, 1991.

Landis, W. G. Pesticides and herbicides, fate and effects evaluation on non-target biological communities. Proceedings, 1991 Annual Meeting of the Air and Waste management Association, Vancouver, BC, Canada June 18, 1991.

Landis, W. G. Limnological and toxicological evaluation of the habitat of the western pond turtle. Conference on the Western Pond Turtle, Seattle, WA June 24, 1991

Landis, W. G., B. D. Westra and N. J. Shough. Discovery and initial characterization of the organophosphate hydrolyzing activities of the bobwhite quail, stilt, mallard and domestic chicken. Annual Meeting of the Society of Environmental Toxicology and Chemistry, Seattle, WA, November 6, 1991.

Landis, W. G. Environmental risk assessment framework incorporating ecosystem level factors. Annual Meeting of the Society of Environmental Toxicology and Chemistry, Seattle, WA, November 5, 1991.

Westra, B. D., N.J. Shough and W.G. Landis. Characterization of organophosphate acid anhydrases in the chicken. Annual Meeting of the Society of Environmental Toxicology and Chemistry, Seattle, WA, November 7, 1991.

Noellgen, R. N. and W.G. Landis. Organophosphate-hydrolyzing activity in the *Mytilus edulis*. Annual Meeting of the Society of Environmental Toxicology and Chemistry, Seattle, WA, November 7, 1991.

Enslein, K. and W. G. Landis. Food and drug administration/national environmental policy act: QSAR predictions. Annual Meeting of the Society of Environmental Toxicology and Chemistry, Seattle, WA, November 5, 1991.

Matz, A. C. , R. S. Bennett, and W. G. Landis. Development of a method for monitoring chemical contamination using galliform chicks. Annual Meeting of the Society of Environmental Toxicology and Chemistry, Seattle, WA, November 7, 1991.

1990

Landis, W. G., M. V. Haley, N. A. Chester, and N. Shough. The organophosphate acid anhydrases, hydrolytic enzymes for organophosphate pesticide detoxification. Battelle Northwest Laboratories, Richland, WA, February 16, 1990.

Landis, W. G. Environmental pollution, the view of an environmental toxicologist. AG-Forestry study group, Bellingham, WA, March 18, 1990.

Landis W. G., M. V. Haley and N. A. Chester. Utility of the standardized aquatic microcosm in the evaluation of degradative bacteria in reducing impacts to aquatic ecosystems. Annual Meeting of the Society of Environmental Toxicology and Chemistry, Arlington, VA, November 13-16, 1990.

Landis W. G. The movement and population genetics of degradative and other plasmids through bacterial populations: implications for field research. Annual Meeting of the Society of Environmental Toxicology and Chemistry, Arlington, VA, November 13-16, 1990.

Landis W. G., N. J. Shough and B. Westra. Discovery of an organophosphate hydrolyzing activity in the bobwhite quail. Annual Meeting of the Society of Environmental Toxicology and Chemistry, Arlington, VA, November 13-16, 1990.

Matthews, G. B., R. A. Matthews, and W. G. Landis. Applications of nonmetric clustering (NMC) to pattern analysis in aquatic toxicology. Annual Meeting of the Society of Environmental Toxicology and Chemistry, Arlington, VA, November 13-16, 1990.

Landis, W. G. Biomonitoring: myth or miracle. Fate and Effects of Pesticides in the Environment. Corvallis, OR, December 11-12, 1990.

Landis, W. G. Summary of the biomonitoring working group. Fate and Effects of Pesticides in the Environment. U. S. EPA. Corvallis, OR, December 11-12, 1990.

1989

Landis, W. G. The organophosphate acid anhydrases, hydrolytic enzymes for organophosphate detoxification. Texas A and M University, College Station, TX, January 18, 1989.

Landis, W. G. Opening remarks. 13th Symposium on Aquatic Toxicology and Risk Assessment, Atlanta, GA, April 16, 1989.

Haley, M. V., E. J. Vickers and W. G. Landis. Biodegradation and aquatic toxicity reduction of the persistent riot control material, 1,4 dibenz oxazepine. 13th Symposium on Aquatic Toxicology and Risk Assessment, Atlanta, GA, April 17, 1989.

Johnson, D. W., M. V. Haley, N. A. Chester, and W. G. Landis. The aquatic toxicity of the sensory irritant, 1-4, dibenz oxazepine. 13th Symposium on Aquatic Toxicology and Risk Assessment, Atlanta, GA, April 17, 1989.

Landis, W. G., N. A. Chester, H. D. Durst, A. J. Mueller, D. P. Dumas, F. M. Raushel and J.R. Wild. The organophosphate acid anhydrases, hydrolytic enzymes for organophosphate detoxication. National Research Conference: Pesticides in Terrestrial and Aquatic Environments, Brookfield, VA, May 11-12, 1989.

Landis, W. G. An investigation of the strategies of *in situ* bioremediation using resource competition models, Drexel University, Philadelphia, PA, May 25, 1989.

Landis, W. G., N. A. Chester, and H. D. Durst. Enzymatic Decontamination of Toxic Military Materials. Third International Symposium on Protection Against Chemical Warfare Agents, Umea, Sweden, June 15, 1989.

Landis, W. G. The OP anhydrases, enzymes for the degradation of acetylcholinesterase inhibitors. Invited Seminar, USEPA ERL Corvallis, Corvallis, OR, Oct. 20, 1989.

Landis, W. G., N. A. Chester, and M. V. Haley. Degradation of 1,4 dibenz oxazepine by *Alcaligenes denitrificans denitrificans* CR-1 in the Standardized Aquatic Microcosm. Annual Meeting Society for Environmental Toxicology and Chemistry, Toronto, Ont., October 30, 1989.

Haley, M. V. and W. G. Landis. The application of *Alcaligenes denitrificans denitrificans* in packed bed continuous flow bioreactors for the degradation of 1,4 dibenz oxazepine. Annual Meeting Society for Environmental Toxicology and Chemistry, Toronto, Ont., October 30, 1989.

Landis, W. G. Evolution and movement of degradative genetic elements in microbial populations. Annual Meeting Society for Environmental Toxicology and Chemistry, Toronto, Ont. October 31, 1989.

Chester, N. A., M. V. Haley, D. W. Johnson, and W. G. Landis. The aquatic toxicology of a mixture of isopropylamine, 2-methylcyclohexanol and pinacolyl alcohol. Annual Meeting Society for Environmental Toxicology and Chemistry, Toronto, Ont., November 2, 1989.

1988

Landis, W. G., R. S. Anderson, N. A. Chester, H. D. Durst, M. V. Haley, D. W. Johnson, and R. M. Tauber. The organofluorophosphate acid anhydrases of the protozoan, *Tetrahymena thermophila*, and the clam, *Rangia cuneata*. 12 Symposium on Aquatic Toxicology and Environmental Fate, Reno NV, April 10, 1988.

Landis, W. G., N. A. Chester, H. D. Durst, M. V. Haley, D. W. Johnson, R. M. Tauber, R. S. Anderson, and B. C. Harper. The organophosphate acid anhydrase of the protozoan, *Tetrahymena thermophila*, and the clam, *Rangia cuneata*, and the role of eucaryotes in strategies of biological detoxification. 1988 International Conference on Physiochemical and Biological Detoxification, Atlantic City, NJ, May 5, 1988.

Landis, W. G. and N. A. Chester. Identification of a mipafox hydrolyzing OPA anhydrase from the clam, *Rangia cuneata*. Second OPA anhydrase Workshop, National Academy of Sciences Study Center, Woods Hole, MA June 9, 1988.

Landis, W. G. The use of the Standardized Aquatic Microcosm in the evaluation of materials. Annual Meeting Society for Environmental Toxicology and Chemistry, Arlington, VA, November 13, 1988.

Chester, N. A., M. V. Haley and W. G. Landis. Characterization of the mipafox hydrolyzing activity from the clam, *Rangia cuneata*. Annual Meeting Society for Environmental Toxicology and Chemistry, Arlington, VA, November 15, 1988.

Haley, M. V., E. Vickers, T. C. Cheng, and W. G. Landis. Naturally occurring organisms resistant of dibenz 1,4-oxazepine. Annual Meeting Society for Environmental Toxicology and Chemistry, Arlington, VA, November 15, 1988.

Landis, W. G. An investigation of the strategies of *in situ* bioremediation using resource competition models. Annual Meeting Society for Environmental Toxicology and Chemistry, Arlington, VA, November 16, 1988.

Chester, N. A., H. D. Durst, M. V. Haley and W. G. Landis. Characterization of the Mipafox hydrolyzing activity from the clam, *Rangia cuneata*. 1988 CRDEC Scientific Conference on Chemical Defense Research, November 14, 1988.

Haley, M. V., E. Vickers, T. C. Cheng, and W. G. Landis. Naturally occurring organisms resistant of dibenz 1,4-oxazepine. 1988 CRDEC Scientific Conference on Chemical Defense Research, November 14, 1988.

1987

Landis, W. G., N. A. Chester, M. V. Haley, D. W. Johnson, W. T. Muse, Jr., and R. M. Tauber. The utility of the standard aquatic microcosm as standard method for ecotoxicological investigation. Eleventh Annual ASTM Symposium Aquatic Toxicology and Risk Assessment. Cincinnati, OH, May 12, 1987.

Enslein, K., B. W. Blake, M. E. Tomb, J. E. Hart, and W. G. Landis. Prediction of *Daphnia magna* EC50 values from rat oral LD50 and structure. Eleventh Annual ASTM Symposium Aquatic Toxicology and Risk Assessment. Cincinnati, OH May 12, 1987.

Landis, W. G. The DFPases, a phylogenetically widespread group of organophosphate hydrolyzing enzymes. Seminar Biotechnology Club, USEPA Cincinnati, OH, May 13, 1987.

Landis, W. G. Welcome and Introduction-Where we've been and what are we doing here? First DFPase Workshop, Marine Biological Laboratory, Woods Hole, MA, June 7, 1987.

Landis, W. G. Multiple DFPases and their substrate/ inhibitor specificity. First DFPase Workshop, Marine Biological Laboratory, Woods Hole, MA, June 7, 1987.

Durst, H. D. and W. G. Landis. Development, use and selectivity of DFPase chromogenic assays. First DFPase Workshop, Marine Biological Laboratory, Woods Hole, MA, June 7, 1987.

Landis, W. G., N. A. Chester, M. V. Haley, D. W. Johnson and R. M. Tauber. The organoflurophosphate hydrolases of *Tetrahymena thermophila* and *Rangia cuneata*. Symposium: Reducing Risks from Environmental Chemicals Through Biotechnology. University of Washington, Seattle, WA, July 19, 1987.

Landis, W. G. Research needs in aquatic toxicology. Workshop on Research Needs in Environmental Toxicology and Risk Assessment. Breckenridge, CO, August 17, 1987

Landis, W. G. and N. A. Chester. The organofluorophosphate hydrolase systems of the clam, *Rangia cuneata*. Annual Meeting Society for Environmental Toxicology and Chemistry, Pensacola FL, November 10, 1987.

Johnson, D. W., M. V. Haley, N. A. Chester, and W. G. Landis. The aquatic toxicities of two structurally similar compounds, 1-methoxy-1,3,5-cycloheptatriene and Dibenz(B, F)-1,4-oxazepine. Annual Meeting Society for Environmental Toxicology and Chemistry, Pensacola FL, November 10, 1987.

Haley, M. V., N. A. Chester, and W. G. Landis. The aquatic toxicity of O-(2-diisopropylammoethyl)O-ethylmethylphophonite (QL), methylphophonic difluoride (DF), methylphophonic dichloride (DC) and some of their degradation components. Annual Meeting Society for Environmental Toxicology and Chemistry, Pensacola FL, November 10, 1987.

Enslein, K. B. W. Blake, M. E. Tomb, J. B. Hart, T. M. Tuzzeo and W. G. Landis. Estimation of ecotoxicological endpoints with Topkat. Annual Meeting Society for Environmental Toxicology and Chemistry, Pensacola FL, November 10, 1987.

Haley, M. V., N. A. Chester, and W. G. Landis. The aquatic toxicity of O-(2-diisopropylammoethyl)O-ethylmethylphophonite (QL), methylphophonic difluoride (DF), methylphophonic dichloride (DC) and some of their degradation components. 1987 CRDEC Scientific Conference on Chemical Defense Research. November 18, 1987.

Johnson, D. W., M. V. Haley, N. A. Chester, and W. G. Landis. The aquatic toxicities of two structurally similar compounds, 1-methoxy-1,3,5-cycloheptatriene and Dibenz(B, F)-1,4-oxazepine. 1987 CRDEC Scientific Conference on Chemical Defense Research. November 18, 1987.

Landis, W. G. and N. A. Chester. The organophosphate acid anhydrase systems of the clam, *Rangia cuneata*. 1987 CRDEC Scientific Conference on Chemical Defense Research. November 18, 1987.

1986

Harper, B. G., L. P. Midgeley, I. G. Resnick, and W. G. Landis. Scale-up production and purification of diisopropylfluorophatase from *Tetrahymena thermophila*. American Society for Microbiology, Washington, D. C., March 1986.

Landis, W. G., H. D. Durst, D. M. Haley, M. V. Haley, D. W. Johnson, R. M. Tauber, and R. E. Savage, Jr. Discovery of multiple DFPases in *Tetrahymena thermophila*. Society of Toxicology Annual Meeting, New Orleans, LA, March 5, 1986.

Landis, W. G. Discovery of multiple DFPases in *Tetrahymena thermophila*. Department of Chemistry, University of Alabama, Huntsville, AL, February 21, 1986.

Landis, W. G. Discovery of multiple DFPases in *Tetrahymena thermophila*. Department of Biochemistry, University of Kansas, Lawrence, KS, March 7, 1986.

Haley, M. V., D. W. Johnson, W. T. Muse, Jr., and W. G. Landis. The aquatic toxicity and fate of brass dust. Tenth Annual ASTM Symposium on Aquatic Toxicology and Environmental Fate. New Orleans, LA, May 5, 1986.

Landis, W. G., H. D. Durst, R. E. Savage, Jr., and B. G. Harper. Tetrahymena-DFPases: elucidation, characteristics, therapeutic potential and utility as non-corrosive decontaminants. Fifteenth Army Science Conference, West Point, NY, June 18, 1986

Harper, B. G., L. P. Midgley, I. G. Resnick, and W. G. Landis. Scale-up, production and purification of diisopropylfluorophosphatases from *Tetrahymena thermophila*. Fifteenth Army Science Conference, West Point, NY, June 18, 1986

Landis, W. G., H. D. Durst, M. V. Haley, and D. W. Johnson. Characterization and role of the organofluorophosphate hydrolases in *Tetrahymena thermophila*. Annual Meeting Society of Protozoologists, Kingston, RI, June 25, 1986.

Landis, W. G. The organofluorophosphate hydrolases of *Tetrahymena thermophila*. Seminar U. S. Army Biomedical Research and Development Laboratory, Fort Detrick, MD, July 24, 1986.

Landis, W. G., N. A. Chester, M. V. Haley, D. W. Johnson, W. T. Muse, Jr., and R. M. Tauber. Aquatic toxicity of metals: comparison of brass dust and copper sulfate using the standard aquatic microcosm. Annual Meeting Society for Environmental Toxicology and Chemistry, Alexandria, VA, November 3, 1986.

Landis, W. G. Degradation of xenobiotics by engineered organisms. Invited presentation entitled: “Biotechnology: Whither the Ecotoxicologist?” Annual Meeting Society for Environmental Toxicology and Chemistry. Alexandria, VA, November 4, 1986.

Anderson, R. S., H. D. Durst, and W. G. Landis. DFP hydrolysis by tissue extracts of the clam *Rangia cuneata*. Annual Meeting Society for Environmental Toxicology and Chemistry. Alexandria, VA, November 4, 1986.

Enslein, K., B. W. Blake, M. E. Tomb, J. E. Hart, and W. G. Landis. SAR model of rat oral LD_{50} based on Daphnia LD_{50} and structural parameters. Annual Meeting Society for Environmental Toxicology and Chemistry. Alexandria, VA, November 5, 1986.

Landis, W. G., R. S. Anderson, H. D. Durst, J. James, N. A. Chester, M. V. Haley, D. W. Johnson, and R. M. Tauber. The organofluorophosphate hydrolases of *Tetrahymena*

thermophila and *Rangia cuneata*. Chemical Research, Development and Engineering Center Conference on Chemical Defense Research, November 17, 1986.

1985

Savage, R. E. Jr., D. M. Satanek, M.V. Haley, D. W. Johnson, G. S. Hart, and W. G. Landis. Kinetics and purification of an organophosphate hydrolyzing activity in *Tetrahymena thermophila*. Society of Toxicology, San Diego, CA, March 19, 1985.

Landis, W. G. Resource competition modeling of the impacts of xenobiotics on biological communities. Ninth Annual ASTM Symposium on Aquatic Toxicology and Environmental Fate. Philadelphia, PA, April 16, 1985.

Landis, W. G. Introduction to session "Evaluating the Impact of Genetically Engineered Microorganisms on Aquatic Ecosystems" Ninth Annual ASTM Symposium on Aquatic Toxicology and Environmental Fate. Philadelphia, PA, April 16 1985.

Landis, W. G. Aquatic toxicology, the gnotobiotic microcosm. National Capital Area Chapter Society of Toxicology. Washington, D. C., September 13, 1985.

Landis, W. G., M. V. Haley, and D. W. Johnson. The toxicity of brass particles to aquatic ecosystems. Society for Environmental Toxicology and Chemistry, St. Louis, MO, November 7, 1985.

Landis, W. G., H. D. Durst, D. M. Haley, M. V. Haley, D. W. Johnson, R. M. Tauber, and R. E. Savage, Jr. Tetrahymena-DFPase: Activity, kinetics, and separation. Scientific Conference on Chemical Defense, Chemical Research and Development Center, Aberdeen Proving Ground, MD, November 19, 1985.

1984

Landis, W. G. Aquatic toxicity of EA5763. U. S. Army Environmental Hygiene Agency, Aberdeen Proving Ground, MD, February 17, 1984.

Landis, W. G. Initial characterization of a nerve agent hydrolyzing enzyme. French delegation to CRDC, Aberdeen Proving Ground, MD June 19, 1984.

Landis, W. G. and R. E. Savage, Jr. Initial characterization of a soman hydrolyzing DFPase in *Tetrahymena thermophila*. Fourteenth Army Science Conference, West Point, NY, June 20, 1984.

Landis, W. G., M. V. Haley, D. W. Johnson, D. M. Satanek and R. E. Savage, Jr. Initial characterization of an organofluorophosphate hydrolyzing activity in *Tetrahymena thermophila.* American Society of Pharmacologists and Experimental Therapeutics, Indianapolis, IN, August 22 1984.

Johnson, D. W., M. V. Haley, W. T. Muse, Jr., and W. G. Landis. Two routes of exposure to brass dust to *Daphnia magna* and aquatic ecosystems. Society for Environmental Toxicology and Chemistry, Arlington, VA, November 5, 1984.

Haley, M. V., D. W. Johnson, and W. G. Landis. The aquatic toxicity of 3,3-dimethyl-2-butanol, pinacolyl alcohol. Society for Environmental Toxicology and Chemistry, Arlington, VA, November 5, 1984.

Landis, W. G. Modeling the impacts of xenobiotics of biological communities: effects of genetic diversity and impacts on trophic interactions. Society for Environmental Toxicology and Chemistry, Arlington, VA, November 5, 1984.

Landis, W. G., D. M. Satanek, M.V. Haley, D. W. Johnson, G. S. Hart, and R. E. Savage, Jr. Kinetics and purification of a diisopropylfluorophosphate hydrolyzing activity in the protozoan, *Tetrahymena thermophila*. Scientific Conference on Chemical Defense Research, Chemical Research and Development Center, November 16, 1984.

1983

Landis, W. G. Invited lecture: ecological toxicology. Environmental Toxicology Course, Mary Washington College, Fredericksburg, VA, March 1983.

Landis, W. G. Resource competition modeling of the response of biological communities to toxins. Seminar series, School of Public and Environmental Affairs, Indiana University, Bloomington, IN, April 1983.

Landis, W. G. Resource competition modeling of the response of biological communities to chemical insults. 4th Annual Meeting Society for Environmental Toxicology and Chemistry, Arlington, VA, November 9, 1983.

Landis, W. G. Characterization of Tetrahymena-DFPase. Scientific Conference on Chemical Defense Research, Chemical Research and Development Center, Aberdeen Proving Ground, MD, November 17, 1983.

1982

Landis, W. G. The relationship among breeding systems, spatial distribution, and genetic diversity in Paramecium. International Meeting of Ciliate Genetics and Molecular Biology, University of Wyoming, Laramie, WY, July 1982.

Landis, W. G. The relationship among breeding systems, spatial distribution, and genetic diversity in Paramecium. 35th Annual Meeting Society of Protozoologists, San Francisco State University, San Fransisco, CA, July 1982.

1981

Landis, W. G. and M. L. Bass. An assessment of the impact on the periphyton community of oil product spills in two watersheds in Northern Virginia. Second Annual Meeting Society of Environmental Toxicology and Chemistry, Alexandria, VA, November 1981.

1980

Landis, W. G. The genetics and ecology of the killer trait in *Paramecium aurelia*. Protozoology Course, Georgetown University, Washington, D. C., April 1980.

1978

Landis, W. G. The role of natural selection and other factors in determining the frequency of the killer trait in populations of the *Paramecium aurelia* complex. 31st Annual meeting Society of Protozoologists, University of Georgia, Athens, GA, August 1978.

1976

Landis, W. G. The role of natural selection and other factors in determining the frequency of the killer trait in populations of paramecium. International meeting of Ciliate Genetics and Molecular Biology, University of Wisconsin, Madison, WI, July 1976.

DAVID R. LEGATES, Ph.D, C.C.M August 2017

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Primary Appointment:

Professor, Department of Geography – College of Earth, Ocean, and Environment

Adjunct Appointments:

Professor, Applied Economics and Statistics – College of Agriculture and Natural Resources
Professor, School of Marine Science & Policy – College of Earth, Ocean, and Environment

Research Interests

Climatology	*Computational Methods*
Hydroclimatology/Surface Water Hydrology	Statistical/Numerical Methods
Precipitation and Climate Change	Spatial Analysis and Spatial Statistics
Global and Regional Climatology	Digital/Numerical Cartography

Education

Ph.D. Climatology, University of Delaware, Newark, Delaware. Received: August 1988.
Dissertation: *A Climatology of Global Precipitation*.

M.S. Climatology/Geography, University of Delaware, Newark, Delaware. Received: June 1985.
Thesis: *Interpolation of Point Values from Isarithms*

B.A. Mathematics and Geography (Double Major), University of Delaware, Newark, Delaware.
Received: June 1982. Graduated: *Cum Laude.*

Professional Experience

2010–Present Professor, University of Delaware, Newark, Delaware.
(2000–2006: Associate Director, Delaware Space Grant Consortium)
(2005–2011: State Climatologist; 2001–2005: Associate State Climatologist)
(2001–2007: Director, Center for Climatic Research)
(2003–2011: Founder and Co-Director, Delaware Environmental Observing System)
(2005–present: Coordinator, Delaware Geographic Alliance)

1999–2010 Associate Professor, University of Delaware, Newark, Delaware.
1998–1999 Associate Professor, Louisiana State University, Baton Rouge, Louisiana.
1998–1999 Research Scientist, Southern Regional Climate Center, Baton Rouge, Louisiana.
1994–1997 Associate Professor, University of Oklahoma, Norman, Oklahoma.
1995–1997 Chief Research Scientist, Center for Computational Geosciences, Norman, Oklahoma.
1995–2005 Vice President for Research, Computational Geosciences Inc., Norman, Oklahoma.
1995–1996 Visiting Associate Professor, University of Virginia, Charlottesville, Virginia.
1988–1994 Assistant Professor, University of Oklahoma, Norman, Oklahoma.
1991 Visiting Research Scientist, National Climatic Data Center, Asheville, North Carolina.
1982–1988 Graduate Research Assistant, University of Delaware, Newark, Delaware.
1986–1987 University of Delaware Graduate Fellowship, University of Delaware, Newark, Delaware.
1984 Instructor, University of Delaware, Newark, Delaware.
1981–1982 Undergraduate Research Assistant, University of Delaware, Newark, Delaware.

Selected Awards, Grants, and Projects

2016–2017 "Support for the Delaware Geographic Alliance", Department of Education, State of Delaware, Principal Investigator, $46,100.

2015 Awarded the *Courage in Defense of Science* Award, sponsored by the Texas Public Policy Foundation.

2015–2016 "Support for the Delaware Geographic Alliance", Department of Education, State of Delaware, Principal Investigator, $46,100.

2014–2015 "Support for the Delaware Geographic Alliance", Department of Education, State of Delaware, Principal Investigator (with M. Legates), $48,500. (Note that M. Legates and D.R. Legates are unrelated – we simply share the same last name.

2014–2015 "Support for the Delaware Geographic Alliance", National Geographic Society, Principal Investigator (with M. Legates), $27,500.

2013–2014 "Chesapeake Bay Watershed Initiative – Year II", National Oceanic and Atmospheric Administration and the National Geographic Society, Principal Investigator, $100,000.

2013–2014 "Support for the Delaware Geographic Alliance", Department of Education, State of Delaware, Principal Investigator (with M. Legates), $48,500.

2013–2014 "Support for the Delaware Geographic Alliance", National Geographic Society, Principal Investigator (with M. Legates), $24,000.

2012–2013 "Chesapeake Bay Watershed Initiative – Year I", National Oceanic and Atmospheric Administration and the National Geographic Society, Principal Investigator, $100,000.

2012–2013 "Support for the Delaware Geographic Alliance", National Geographic Society, Principal Investigator (with M. Legates), $50,000.

2012–2013 "Support for the Delaware Geographic Alliance", Department of Education, State of Delaware, Principal Investigator (with M. Legates), $33,500.

2011 Featured in "David R. Legates", Real-World Meteorology: A Series of Profiles Celebrating a Half-Century of Certified Consulting Meteorologists, *Bulletin of the American Meteorological Society*, **92**(2):223.

2011–2012 "Support for the Delaware Geographic Alliance", National Geographic Society, Principal Investigator (with M. Legates), $20,000.

2011–2012 "Support for the Delaware Geographic Alliance", Department of Education, State of Delaware, Principal Investigator (with M. Legates), $33,500.

2010–2011 "A Prototype Coastal Flood Monitoring System for Delaware – Phase II", Delaware Department of Natural Resources and Environmental Control, co-Principal Investigator (with D.J. Leathers, J.H. Talley, K.R. Brinson, and J.A. Callahan), $25,806.

2010–2011 "DEOS/DelDOT Snow Depth Monitoring – Continuing Support", Delaware Department of Transportation, co-Principal Investigator (with D.J. Leathers), $24,000.

2010–2011 "The Delaware Environmental Observing System – Continuing Support", State of Delaware, co-Principal Investigator (with D.J. Leathers), $72,000.

2010–2011 "Support for the Delaware Geographic Alliance", National Geographic Society, Principal Investigator (with M. Legates), $20,000.

2010–2011 "Support for the Delaware Geographic Alliance", Department of Education, State of Delaware, Principal Investigator (with M. Legates), $33,500.

2009–2010 "A Prototype Coastal Flood Monitoring System for Delaware", Delaware Department of Natural Resources and Environmental Control, co-Principal Investigator (with D.J. Leathers, J.H. Talley, K.R. Brinson, and J.A. Callahan), $50,000.

2009–2010 "A Prototype Coastal Flood Monitoring System for Delaware", NSF EPSCoR, co-Principal Investigator (with D.J. Leathers, J.H. Talley, K.R. Brinson, and J.A. Callahan), $29,000.

2009–2010 "DEOS/DelDOT Snow Depth Monitoring – Continuing Support", Delaware Department of Transportation, co-Principal Investigator (with D.J. Leathers), $24,000.

2009–2010 "K-12 Educational Outreach Activities with the DGA", Delaware Space Grant Consortium, National Aeronautics and Space Administration, Principal Investigator, $17,000.

2009–2010 "The Delaware Environmental Observing System – Continuing Support", State of Delaware, co-Principal Investigator (with D.J. Leathers), $72,000.

2009–2010 "Support for the Delaware Geographic Alliance", National Geographic Society, Principal Investigator (with M. Legates), $23,000.

2009–2010 "Support for the Delaware Geographic Alliance", Department of Education, State of Delaware, Principal Investigator (with M. Legates), $37,900.

2009 "Advancing Irrigation Management to Reduce Nutrient Loads to the Delaware Headwaters of the Chesapeake Bay", United States Department of Agriculture, co-Principal Investigator (with D. Hansen, PI, T. Sims, and D. Leathers), $70,950.

2008–2009 "Installation of the Chester County Mesonetwork as part of the Delaware Environmental Observing System", Chester County Office of Emergency Management, Principal Investigator (with D.J. Leathers), $24,000.

2008–2009 "DEOS/DelDOT Snow Depth Monitoring – Continuing Support", Delaware Department of Transportation, co-Principal Investigator (with D.J. Leathers), $24,000.

2008–2009 "K-12 Educational Outreach Activities with the DGA", Delaware Space Grant Consortium, National Aeronautics and Space Administration, Principal Investigator, $12,500.

2008–2009 "The Delaware Environmental Observing System – Continuing Support", State of Delaware, co-Principal Investigator (with D.J. Leathers), $80,000.

2008–2009 "The Delaware Environmental Observing System – Year Six Support", Delaware Emergency Management Agency, co-Principal Investigator (with D.J. Leathers), $64,500.

2008–2009 "Support for the Delaware Geographic Alliance", National Geographic Society, Principal Investigator (with M. Legates), $50,000.

2008–2009 "Support for the Delaware Geographic Alliance", Department of Education, State of Delaware, Principal Investigator (with M. Legates), $48,500.

2007–2008 "DEOS/DelDOT Snow Depth Monitoring", Delaware Department of Transportation, co-Principal Investigator (with D.J. Leathers), $53,217.

2007–2008 "Instruction for the Development of a Nigerian Weather Observation Network," Centre for Basic Space Sciences, University of Nsuuka, Nsuuka, Nigeria, Principal Investigator, $10,000.

2007–2008 "K-12 Educational Outreach Activities with the DGA", Delaware Space Grant Consortium, National Aeronautics and Space Administration, Principal Investigator, $16,000.

2007–2008 "Support for the Delaware Geographic Alliance", National Geographic Society, Principal Investigator (with M. Legates), $50,000.

2007–2008 "Support for the Delaware Geographic Alliance", Department of Education, State of Delaware, Principal Investigator (with M. Legates), $48,500.

2007–2008 "The Delaware Environmental Observing System – Year Five Support", Delaware Emergency Management Agency, co-Principal Investigator (with D.J. Leathers), $64,500.

2007–2008 "The Delaware Environmental Observing System – Continuing Support", State of Delaware, co-Principal Investigator (with D.J. Leathers), $80,000.

2007–2008 "The Delaware Environmental Observing System – DNREC Support", Delaware Department of Natural Resources and Environmental Control, co-Principal Investigator (with D.J. Leathers), $35,000.

2007–2008 "The Delaware Environmental Observing System – DNREC Coastal Meteorological Monitoring Sites", Delaware Department of Natural Resources and Environmental Control, co-Principal Investigator (with D.J. Leathers), $16,790.

2007 "Microclimatology and Biogeochemistry of a Mid-Atlantic Watershed Located in Southeastern Pennsylvania", Starrett Foundation, co-Principal Investigator (with D.F. Levia, PI, and D.J. Leathers), $56,000.

2006–2007 "K-12 Educational Outreach Activities with the DGA", Delaware Space Grant Consortium, National Aeronautics and Space Administration, Principal Investigator, $16,000.

2006–2007 "The Delaware Environmental Observing System – Continuing Support", State of Delaware, co-Principal Investigator (with D.J. Leathers), $80,000.

2006–2007 "The Delaware Environmental Observing System – DNREC Support", Delaware Department of Natural Resources and Environmental Control, co-Principal Investigator (with D.J. Leathers), $35,000.

2006–2007 "Support for the Delaware Geographic Alliance", National Geographic Society, Principal Investigator (with M. Legates), $50,000.

2006–2007 "Support for the Delaware Geographic Alliance", Department of Education, State of Delaware, Principal Investigator (with M. Legates), $48,500.

2006–2007 "The Delaware Environmental Observing System – Year Four Support", Delaware Emergency Management Agency, Principal Investigator (with D.J. Leathers), $65,000.

2006 "The Delaware Environmental Observing System – Continuing Support", Office of the Provost and the Colleges of Arts & Sciences and Marine Studies, University of Delaware, co-Principal Investigator (with D.J. Leathers), $45,000.

2005–2006 "Support for the Delaware Geographic Alliance", National Geographic Society, Principal Investigator (with M. Legates), $50,000.

2005–2006 "Support for the Delaware Geographic Alliance", Department of Education, State of Delaware, Principal Investigator (with M. Legates), $48,500.

2005–2006 "The Delaware Environmental Observing System – Continuing Support", Office of the Provost, University of Delaware, co-Principal Investigator (with D.J. Leathers), $30,000.

2005–2006 "The Delaware Environmental Observing System – Year Three Support", Delaware Emergency Management Agency, co-Principal Investigator (with D.J. Leathers), $65,000.

2004–2005 "The Delaware Environmental Observing System – Year Two Support", Delaware Emergency Management Agency, co-Principal Investigator (with D.J. Leathers), $165,000.

2004–2005 "The Virginia Rainfall Monitoring and Analysis System", Virginia Office of Environmental Quality, co-Principal Investigator (P.J. Michaels, PI), $100,000.

2003–2004 "Development of a Real-Time System for Monitoring Weather Conditions in Kentucky", Kentucky Climate Center, Principal Investigator, $25,000.

2003–2004 "Initial Deployment of the Delaware Environmental Observing System", Delaware Emergency Management Agency, co-Principal Investigator (D.J. Leathers), $165,000.

2003 "K-12 Educational Outreach Activities for DEOS", Delaware Space Grant Consortium, National Aeronautics and Space Administration, Principal Investigator, $7,600.

2002–2006 "Development of Bias-Corrected Precipitation Database and Climatology for the Arctic Regions", National Science Foundation, co-Principal Investigator (D. Yang, PI, and D.L. Kane), $552,867.

2002–2003 "Assessment of Road Surface Sensors for Use with DEOS", Delaware State Department of Transportation, co-Principal Investigator (D.J. Leathers), $13,000.

2002–2003 "Use of Calibrated WSR-88D Radar Estimates of Precipitation in Assessment of Nutrient Discharge on the Inland Bays of Delaware," Center for Inland Bays, co-Principal Investigator (T. DeLiberty, PI), $15,000.

2002 Awarded the *2002 Boeing Autometric Award for the Best Paper in Image Analysis and Interpretation* by the American Society of Photogrammetry and Remote Sensing.

2000 "WSR-88D Radar Precipitation Interface Client-Server", Duke Energy Corporation, Charlotte, North Carolina, co-Principal Investigator (K.R. Nixon, PI), $150,000.

2000 Awarded *Certified Consulting Meteorologist* status by the American Meteorological Society.

1999–2000 "Doppler Radar Irrigation Scheduling System: DRISS – Phase II", USDA Small Business Innovation Research Grant, United States Department of Agriculture, co-Principal Investigator (K.R. Nixon, PI), $230,000.

1999–2001 "Searching for Anthropogenic Climate Change Signals Using Non-Correlation-Based Approaches", National Oceanic and Atmospheric Administration and Department of Energy's Climate and Global Change Program, Principal Investigator (R.E. Davis and S.M. Robeson), $50,001.

1999–2002 "The Great Plains Regional Earth Science Applications Center (GP-RESAC): A Consortium to Transfer Remote Sensing Products and Technology to Support the Great Plains Agroecosystem", Regional Earth Science Applications Center, National Aeronautics and Space Administration, co-Principal Investigator (E. Martinko, PI, K. Price, and M.E. Jakubauskas), $75,000.

1999 "Monitoring Precipitation for the St. Johns River Watershed During June 1999", St. Johns River Water Management District, co-Principal Investigator (K.R. Nixon, PI), $5,000.

1998–1999 "Doppler Radar Irrigation Scheduling System: DRISS – Phase I", USDA Small Business Innovation Research Grant, United States Department of Agriculture, co-Principal Investigator (K.R. Nixon, PI), $65,000.

1998 Awarded the Alpha Lambda Delta Freshman Honor Society Award for Superior Instruction of Freshman Students – Fall 1998. Louisiana State University.

1997–1998 "Development of an Intelligent Geographic Information System to Support Spatiotemporal Queries, Analysis, and Modeling in Hydrology", United States Department of Defense, National Imagery and Mapping Agency, University Research Initiatives (NURI), co-Principal Investigator (M. Yuan, PI, J. Canning), $596,919.

1997–2001 "Interaction Between Land Cover/Land Use Dynamics and Climatological Variability in the Western Oklahoma/Kansas/Texas Indicator Region", National Institute for Global Environmental Change, co-Principal Investigator (M.E. Jakubauskas, PI), $301,081.

1997–1998 "Expansion and Analysis of the Comprehensive Pacific Rainfall Data Base", National Oceanic and Atmospheric Administration's Climate and Global Change Program, co-Principal Investigator (M. Morrissey, PI), $163,740.

1997–1998 "Rapid Tornado Damage Assessment". Natural Hazards Research Applications and Information Center's Quick Response Research Program, Principal Investigator (with M.D. Biddle), $3000.

1996 Received a Tribute from the State of Delaware House of Representatives for "Achievements in the Geosciences".

1995–1998 "Accuracy Assessment of the 4km x 4km Hourly WSR-88D GCIP Precipitation Data Using Raingage Measurements as Baseline Data", NOAA Climate and Global Change Program, co-Principal Investigator (M.L. Morrissey, PI, and C.E. Duchon), $244,000.

1995–1997 "Water Resource Decision Support System – Phase II". USDA Small Business Innovation Research Grant, United States Department of Agriculture, Consulting Hydroclimatologist (K.R. Nixon, PI), $208,000.

1995 University of Oklahoma nominee for an International Affairs Fellowship from the Council on Foreign Relations.

1994–1997 "WSR-88D Radar Precipitation Interface", Duke Power Company, Charlotte, North Carolina, co-Principal Investigator (K.R. Nixon, PI), $504,016.

1994 "Water Resource Decision Support System – Phase I", USDA Small Business Innovation Research Grant, United States Department of Agriculture, Consulting Hydroclimatologist (K.R. Nixon, PI), $50,000.

1993–1994 "Development of an Interdisciplinary GIS Teaching Laboratory", Instrumentation and Laboratory Improvement Program, National Science Foundation, co-Principal Investigator (G.L. Thompson, PI), $15,700.

1992–1994 "The Impact of Doubling Atmospheric Carbon Dioxide on Precipitation Frequency and Intensity in the Southern Great Plains Region", Bureau of Reclamation, United States Department of the Interior, Principal Investigator, $122,020.

1992–1995 "Surface Hydrology Research Cluster", EPSCoR program, National Science Foundation and the State of Oklahoma EPSCoR Program, co-Principal Investigator (with seven researchers at the University of Oklahoma and Oklahoma State University, T.H.L. Williams, PI), $871,335.

1992 University of Oklahoma nominee for the National Science Foundation's Presidential Faculty Fellow and Young Investigator Awards.

1991–1993 "Compilation of an Unbiased Precipitation Data Set and Its Use in the Evaluation of the Natural Variability and GCM-Simulated Climates for the United States", Climate Dynamics Division, National Science Foundation, Principal Investigator, $25,839.

1990–1991 Consultant to the Global Precipitation Climatology Project sponsored by the World Meteorological Organization at Deutscher Wetterdienst (German Weather Service).

1989 "An Objective Approach to the Selection of a Precipitation Frequency Distribution", Research Fellowship, University of Oklahoma, Principal Investigator, $5000.

1986–1987 Awarded Competitive University Fellowship for Graduate Studies, University of Delaware.

Participation in National and International Presentations, Workshops, and Institutes

2017 Invited speaker at the "Scientific Integrity at the Environmental Protection Agency", The Heartland Institute, June 14, Washington, DC.

2016 Invited speaker at the "Crossroads III: Energy and Climate Policy Summit", The Heritage Foundation, December 8, Washington, DC.

2016 Invited to participate in a panel discussing climate change for the House Science, Space and Technology Committee, Russell House Office Building, April 14, Washington, DC.

2016 Invited speaker at the 34th Annual Meeting of the Doctors for Disaster Preparedness, June 27, Omaha, NE.

2015 Invited speaker at the 10th International Conference on Climate Change, The Heartland Institute, June 11-12, Washington, DC.

2014 Invited to appear before the United States Senate Committee on Environment and Public Works, Dirksen Senate Office Building, June 3, Washington, DC.

2012 Invited participant at the American Whig-Cliosophic Society at Princeton University, September 20, Princeton, NJ.

2011 Invited speaker at the Florida Electric Power Coordinating Group Environmental Committee, October 17, Sandestin, FL.

2009 Invited speaker at the 27th Annual Meeting of Doctors for Disaster Preparedness, Doctors for Disaster Preparedness, August 1, Denver, CO.

2009 Invited speaker at the 2009 President's Council Retreat, Heartland Institute, June 15, Chicago, IL.

2009 Invited speaker at the Second International Conference on Climate Change, The Heartland Institute, March 9, New York, NY.

2008 Invited speaker at the "'We Get it!' Campaign on Environment and Poverty", National Press Club, May 15, Washington, DC.

2008 Invited speaker at the First International Conference on Climate Change, The Heartland Institute, March 3, New York, NY.

2006 Invited speaker at "A Call to Truth, Prudence and Protection of the Poor: An Evangelical Response to Global Warming", National Press Club, July 25, Washington, DC.

2006 Invited speaker at "A Call to Truth, Prudence and Protection of the Poor: An Evangelical Response to Global Warming", Heritage Foundation, July 25, Washington, DC.

2005 Invited speaker at a luncheon for House and Senate Staff Members, Dirksen and Rayburn House Office Buildings, July 25 and 26, Washington, DC.

2004 Invited speaker at a luncheon for House and Senate Staff Members, Dirksen and Rayburn House Office Buildings, April 12 and 14, Washington, DC.

2003 Invited speaker at "Return to Rio: Reexamining Climate Change Science, Economics, and Policy", American Enterprise Institute for Public Policy Research, November 19, Washington, DC.

2003 Invited to appear before the United States Senate Committee on Environment and Public Works, Dirksen Senate Office Building, July 29, Washington, DC.

2002 Invited to appear before the United States Senate Committee on Environment and Public Works, Dirksen Senate Office Building, March 13, Washington, DC.

2001 Invited speaker by the George C. Marshall Institute, January 23, Washington, DC.

2000 Invited speaker at "Global Warming: Science and Public Policy", Rayburn House Office Building, April 3, Washington, DC.

1998 Moderator of and participant in "Global Warming: The Science Behind the World's Hottest Environmental Issue", The Houston Forum, September 25, Houston, Texas.

1998 Invited speaker at a luncheon for House and Senate Staff Members, Rayburn House Office Building, June 5, Washington, DC.

1997 Invited participant at the Conference on "Global Climate Change: What Does It Mean for the Central Southwest?", October 30, Dallas, Texas.

1996 Invited participant at the Twin Cities Conference on Global Climate Change by the Minnesota Environmental Coalition of Labor and Industry, December 11, Minneapolis, Minnesota.

1996 Invited participant at the NPOESS Climate Requirements Workshop, February 27–29, College Park, Maryland.

1995 Invited participant at the ACSYS Solid Precipitation Climatology Project Workshop, September 12–15, Reston, Virginia.

1995 Invited speaker at the 20th Annual Energy Conference of the Western Fuels Association, July 27, Baton Rouge, Louisiana.

1995 Invited panelist at the NOAA Experts Meeting on Documenting and Detecting Long-Term Climate Change: Monitoring Requirements, January 9–11, Asheville, North Carolina.

1994 Invited lecturer at the NATO Advanced Study Institute on the Role of Water and the Hydrological Cycle in Global Change, May 27–June 6, Il Ciocco, Italy.

1994 Invited participant at the UCAR Workshop on Databases for Terrestrial Biosphere Modeling, May 9–11, Boulder, Colorado.

1993 Invited participant at the NATO Advanced Research Workshop on Global Environmental Change and Land Surface Processes in Hydrology: The Trials and Tribulations of Modeling and Measuring, May 17–21, Tucson, Arizona (chaired panel discussion).
1993 Invited participant at the NOAA Workshop on Environmental Information Needs: Precipitation-Sensitive Systems, May 4–7, Boulder, Colorado.
1992 Invited participant at the joint GEWEX/WGNE Workshop on Global Observations, Analyses and Simulation of Precipitation, National Meteorological Center, October 27–30, Washington, DC.
1991 Invited participant at the NATO Advanced Research Workshop on Opportunities for Hydrological Data in Support of Climate Change Studies, August 26–30, Lahnstein, Germany.
1989 Invited participant at the joint USA/USSR Working Meeting on Development of Data Sets for Detecting Climatic Change, September 11–14, Obninsk, USSR.
1987 Invited participant at the 1987 Summer Supercomputing Institute, National Center for Atmospheric Research, Boulder, Colorado.

Service on National and International Committees and Boards

Board Member, AMS Board of Certified Consulting Meteorologists, 2016–2020.
Editor for Climatology, *Physical Geography*, 2002–2012.
Associate Editor, *Climate Research*, 2000–2006.
Senior Editor and Publisher, *Publications in Climatology*, 2004–2014.
Editorial Board, *Annals of the Association of American Geographers*, 2005–2006.
Editorial Board, *Publications in Climatology*, 1999–2003.
Editorial Board, *The Professional Geographer*, 1998–2000.
University Representative to the Universities Space Research Association (USRA), 2006–2008.
Treasurer, Delaware/Philadelphia Area Chapter of the American Meteorological Society, 2001–2004.
Vice President, Central Louisiana Joint Chapters of the American Meteorological Society and the National Weather Association, 1998–1999.
Member, Annual Meetings Program Committee, Association of American Geographers, 1996.
Chair, Climate Specialty Group, Association of American Geographers, 1994–1996.
Board of Directors, Climate Specialty Group, Association of American Geographers, 1992–1994.
National Expert, International Organizing Committee (OC) for the WMO Solid Precipitation Measurement Intercomparison Project, 1989–1993.

Membership in Professional Organizations and Honorary Societies

American Meteorological Society
American Water Resources Association
Phi Beta Kappa
Phi Kappa Phi
Pi Mu Epsilon (Mathematics)

Supervision of Graduate Theses and Dissertations

Bogart, Tianna Anise, "Sensitivity of a Global Climate Model to the Urban Land Unit". Ph.D., University of Delaware, 2013.
DeLiberty, Tracy Lynn, "Spatial and Temporal Variability of Soil Moisture in Oklahoma". Ph.D., University of Oklahoma, 1994.
Komuscu, Ali Umran, "The Impact of Spatial and Temporal Variability in Precipitation on Simulating Runoff Hydrographs". Ph.D., University of Oklahoma, 1993.
Quiring, Steven, "Development of an Agricultural Drought Monitoring System for the State of Delaware". Ph.D., University of Delaware, 2005.
Thompson, Virginia, "A Contextual Analysis of Obesity and Smoking by Women in Oklahoma City". Ph.D., University of Oklahoma, 1995.

Baum, Geoffrey, "Effects of Radar and Raingage Representations of the Flood Monitoring of the Remnants of Tropical Storm Henri in the Red Clay Creek Watershed". M.S., University of Delaware, 2012.
Bogart, Tianna Anise, "Bias Adjustments of Arctic Precipitation". M.S., University of Delaware, 2007.

Brinson, Kevin, "Investigation of the Spatial Relationship Between Radar Estimated Rainfall and Frontal Boundaries in the Oklahoma Region". M.S., University of Delaware, 2006.

Cederstrand, Joel R., "Use of GIS in the Creation of a Digital Elevation Model to Delineate Watersheds in Oklahoma". M.A., University of Oklahoma, 1997.

Conly, Michael Sean, "Precipitation Measurement Biases and Their Effect on Hydrologic Models". M.A., University of Oklahoma, 1995.

Davis, Laura Hill, "Radar Estimates of Tropical Precipitation: A Case Study of the Landfall of Hurricane Georges". M.A., Louisiana State University, 2000.

Dowtin, Asia, "Developing a Drought Climatology for Delaware (1948-2005)". M.S., University of Delaware, 2012.

Freeman, Kathleen Felter, "Comparative Analysis of Radar and Raingage Frequencies over Oklahoma". M.S., University of Delaware, 2004.

Masó, Carmen, "Use of Satellite Imagery in the Investigation of Warm Season Thunderstorm Precipitation". M.A., University of Oklahoma, 1991.

Mueller, David, "The Unexpected Faces of Gated Community Residents Inside the United States". M.A., University of Delaware, 2011.

Refereed Publications

Legates, D.R. (2017): "*The Experiment*: Capitalism versus Socialism". *Journal of American Physicians and Surgeons*, **22**(1), 16–21.

Legates, D.R., and K.T. Junghenn (2017): "Evaluation of a Simple, Point-Scale Hydrologic Model in Simulating Soil Moisture Using the Delaware Environmental Observing System". *Theoretical and Applied Climatology*, forthcoming.

Legates, D.R. (2016): The University vs. Academic Freedom. *Academic Questions*, **29**(1), 15–23.

Monckton, C. of Brenchley, W. W.-H. Soon, D.R. Legates, and W.M. Briggs (2015): Keeping It Simple: The Value of an Irreducibly Simple Climate Model. *Science Bulletin*, **60**(15), 1378–1390.

Legates, D.R., W. Soon, W.M. Briggs, and C. Monckton of Brenchley (2015): Climate Consensus and 'Misinformation': A Rejoinder to *Agnotology, Scientific Consensus, and the Teaching and Learning of Climate Change*. *Science & Education*, **24,** 299–318.

Levia, D.F., B. Michalzik, K. Nathe, S. Bischoff, S. Richter, and D.R. Legates (2015): Differential Stemflow Yield from European Beech Saplings: The Role of Individual Canopy Structure Metrics. *Hydrological Processes*, **29**:43–51.

Monckton, C. of Brenchley, W. W.-H. Soon, D.R. Legates, and W.M. Briggs (2015): Why Models Run Hot: Results from an Irreducibly Simple Climate Model. *Science Bulletin*, **60**(1):122–135.

Soon, W., and D.R. Legates (2015): Response to the Comment on: "Soon, W., and Legates, D.R., Solar Irradiance Modulation of Equator-to-Pole (Arctic) Temperature Gradients: Empirical evidence for climate variation on Multi-decadal Timescales. *Journal of Atmospheric and Solar Terrestrial Physics*, **93**, (2013) 45–56" by F. Meunier and A.H. Reis. *Journal of Atmospheric and Solar-Terrestrial Physics*, **128**:92–93.

Legates, D.R. (2014): Climate Models and Their Simulation of Precipitation. *Energy & Environment*, **25**(6&7):1163–1175.

Legates, D.R., W. Eschenbach, and W. Soon (2014): Arctic Albedo Changes are Small Compared with Changes in Cloud Cover in the Tropics. *Proceedings of the National Academy of Sciences*, **111**(21):E2157−E2158.

Legates, D.R., D.F. Levia, J.T. Van Stan, and V.M. Velasco Herrera (2014): Using Wavelet Analysis to Examine Bark Microrelief. *Trees – Structure and Function*, **28**:413−425.

Mahmood, R., R.A. Pielke Sr., K.G. Hubbard, D. Niyogi, P. Dirmeyer, C. McAlpine, A. Carleton, R. Hale, S. Gameda, A. Beltran-Przekurat, B. Baker, R. McNider, D.R. Legates, M. Shepherd, J. Du, P. Blanken, O.N. Frauenfeld, U.S. Nair, and S. Fall (2014): Land cover changes and their biogeophysical effects on climate. *International Journal of Climatology*, **34**:929−953.

Legates, D.R., and G.J. McCabe Jr. (2013): A Refined Index of Model Performance: A Rejoinder. *International Journal of Climatology*, **33**(4):1053−1056.

Legates, D.R., W. Soon, and W.M. Briggs (2013): Learning and Teaching Climate Science: The Perils of Consensus Knowledge Using Agnotology. *Science & Education*, **22**:2007−2017.

Biddle, M.D., and D.R. Legates (2013): Helping At-Risk People Survive Tornadoes. *Natural Hazards Observer*, **37**(4):8–9.

Levia, D.F., B. Michalzik, S. Bischoff, K. Näthe, D.R. Legates, M.-C. Gruselle, and S. Richter (2013): Measurement and Modeling of Diameter Distributions of Particulate Matter in Terrestrial Solutions. *Geophysical Research Letters*, **40**:1317–1321.

Soon, W., and D.R. Legates (2013): Solar Irradiance Modulation of Equator-to-Pole (Arctic) Temperature Gradients: Empirical Evidence for Climate Variation on Multi-Decadal Timescales. *Journal of Atmospheric and Solar-Terrestrial Physics*, **93**(2):45−56.

Legates, D.R., R. Mahmood, D.F. Levia, T.L. DeLiberty, S.M. Quiring, C. Houser, and F.E. Nelson (2011): Soil Moisture: A Central and Unifying Theme in Physical Geography. *Progress in Physical Geography*, **35**(1): 65–86.

Angelini, I.M., M. Garstang, R.E. Davis, B. Hayden, D.R. Fitzjarrald, D.R. Legates, S. Greco, S. Macko, and V. Connors (2011): On the Coupling Between Vegetation and the Atmosphere. *Theoretical and Applied Climatology*, **105**(1-2):243–261.

Cheval, S., M. Baciu, A. Dumitrescu, T. Breza, D.R. Legates, and V. Chendes (2011): Climatologic Adjustments to Monthly Precipitation in Romania. *International Journal of Climatology*, **31**:704–714.

Soon, W., D. Koushik, D.R. Legates, V. Velasco, and W. Zhang (2011): Evidence for Causes for the Variation in Surface Air Temperature of China During the 20th Century. *Journal of Atmospheric and Solar-Terrestrial Physics*, **73**:2331–2344.

Mahmood, R., R.A. Pielke Sr., K.G. Hubbard, D. Niyogi, G. Bonan, P. Lawrence, R. McNider, C. McAlpine, A. Etter, S. Gameda, B. Qian, A. Carleton, A. Beltran-Przekurat, T. Chase, A.I. Quintanar, J.O. Adegoke, S. Vezhapparambu, G. Conner, S. Asefi, E. Sertel, D.R. Legates, Y. Wu, R. Hale, O.W. Frauenfeld, A. Watts, M. Shepherd, C. Mitra, V.G. Anantharaj, S. Fall, R. Lund, A. Treviño, P. Blanken, J. Du, H.-I. Chang, R. Leeper, U.S. Nair, S. Dobler, R. Deo, and J. Syktus (2010): Impacts of Land Use Land Cover Change on Climate and Future Research Priorities. *Bulletin of the American Meteorological Society*, **91**(1): 37–46.

McCabe, G.J. Jr., D.R. Legates, and H.F. Lins (2010): Variability and Trends in Dry Day Frequency and Dry Event Length in the Southwestern United States. *Journal of Geophysical Research*, **115**, D07108.

Legates, D.R., and T.A. Bogart (2009): Estimating the Proportion of Monthly Precipitation that Falls in Solid Form. *Journal of Hydrometeorology*, **10**(5):1299–1306.

Rudrappa, T., Y.S. Choi, D.F. Levia, D.R. Legates, K.H. Lee, and H.P. Bais (2009) *Phragmites australis* Root Secreted Phytotoxin Undergoes Photo-Degradation to Execute Severe Phytotoxicity. *Plant Signaling & Behavior*, **4**(6):506–513.

DeLiberty, T.L., and D.R. Legates (2008): Spatial Variability and Persistence of Soil Moisture in Oklahoma. *Physical Geography*, **29**(2):121–139.

Dyck, M.G., W. Soon, R.K. Baydack, D.R. Legates, S. Baliunas, T.F. Ball, and L.O. Hancock (2008): Reply to Response to Dyck *et al.* (2007) on Polar Bears and Climate Change in Western Hudson Bay by Stirling *et al.* (2008). *Ecological Complexity*, **5**(4):289–302.

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Encyclopedia and Yearbook Entries

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Legates, D.R. (1996). Precipitation. *Encyclopedia of Climate and Weather*, S.H. Schneider, *ed*., Oxford University Press, Volume 2, 608–612.

Legates, D.R. (1996). Raining on the Climate Modeler's Parade. *State of the World's Climate 1996*, 24–28.

Legates, D.R. (1992). Precipitation (Meteorology). *1992 McGraw-Hill Yearbook of Science and Technology*, 361–363.

Published Computer Programs, Datasets, and Documentation

Legates, D.R. (1998). *WIMP II: The Water-Balance Interactive Modeling Program, Version II*. Computational Geosciences, Inc., Norman, Oklahoma.

Nixon, K.R., D.R. Legates, G.E. Quelch, T.D. Stockdale, J. Xiong (1997). *Radar Precipitation Interface for Hydrologic Models: Operators Guide*, Center for Computational Geosciences, University of Oklahoma, pp 64.

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Legates, D.R., and C.J. Willmott (1996). Surface and Ship-Borne Rain Gauge Global Mean Monthly Precipitation Data Set, in *Results of the Third Precipitation Intercomparison Project, PIP-3*, R. Adler, C. Kidd, and M. Goodman, *eds*. (on CD-ROM).

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Willmott, C.J., C.M. Rowe, and D.R. Legates (1987). *WIMP: The Water-Budget Interactive Modeling Program*. Center for Climatic Research, University of Delaware, Newark, DE.

ROBERT JEFFREY LEWIS
CURRICULUM VITAE
August 2017

PERSONAL

[redacted]
(908) 335-1107 (work) [redacted] (cell)
[redacted] (work)
[redacted] (personal)

EDUCATION

1997 **Master of Business Administration**
(Honors-Beta Gamma Sigma)
Rutgers University, Executive MBA Program

1990 **Doctor of Philosophy**
Epidemiology
University of Texas Health Science Center
School of Public Health, Houston, Texas

1987 **Master of Science**
Epidemiology
University of Texas Health Science Center
School of Public Health, Houston, Texas

1985 **Bachelor of Science**
Biology (Systematics and Ecology)
University of Kansas, Lawrence, Kansas

PROFESSIONAL EXPERIENCE

2016-Present **Distinguished Scientific Associate**
2011-2016 **Section Head**
2009-2011 **Senior Scientific Associate**
2006-2009 **Advanced Scientific Associate**
2000-2006 **Scientific Associate**
1995-2000 **Senior Epidemiologist**
1992-1995 **Staff Epidemiologist**
1990-1992 **Epidemiologist**

ExxonMobil Biomedical Sciences, Inc. (EMBSI)
Occupational and Public Health Division,
Annandale, NJ

Major responsibilities include: a) advising the Corporation on epidemiologic research involving ExxonMobil employees, products and operations; b) providing technical leadership to chemical human health risk assessment programs and research; and c) providing technical leadership to benefit-cost analysis related to human health-based regulations. Currently leading scientific programs on naphthalene, 1,3-butadiene, and asphalt human health and regulatory issues.

Representative for ExxonMobil on multiple industry scientific trade association committees (e.g., American Chemistry Council, American Petroleum Institute), and served as Principal Investigator for multiple epidemiological studies (see publication list).

1997-Present **Adjunct Assistant Professor**
Division of Epidemiology, Human Genetics & Environmental Sciences
University of Texas Health Science Center School of Public Health.

1988-1990 **Research Assistant**
Department of Pediatrics, The Rett Center
Baylor College of Medicine, Houston, Texas

Responsibilities included assisting in the design and conduct of a case-control study of Rett Syndrome. Other responsibilities included assisting in the development of a population-based registry for Rett Syndrome, and development of database management and analytical methods for other studies being conducted at the Rett Center.

1987-1988 **Graduate Research Assistant III**
The Southwest Center for Prevention Research
University of Texas Health Science Center School of Public Health, Houston, Texas

Responsibilities included the development of database structures, data management procedures, and analytical methods for a large-scale epidemiologic study of childhood cardiovascular health.

1986-1987 **Graduate Research Assistant I**
Epidemiology Research Unit
University of Texas Health Science Center School of Public Health, Houston, Texas

Responsibilities included various field office activities (data entry and coding, etc.) related to current research being conducted at the Epidemiology Research Unit.

COMMITTEE MEMBERSHIPS

2011-Present **Threshold Limit Value (TLV) Committee,** Member**,** American Conference of Governmental Industrial Hygienists.

2013-2016 **Evidence-based Toxicology Collaboration**, Methods Work Group, Member

2010-2016 **Expert Science Panel Member**, Alliance for Risk Assessment

2011-2016 **Co-Chair,** Science Team, Naphthalene Research Coalition

2009-2016	**Chair,** Environmental Health Committee, International Institute of Synthetic Rubber Producers
2009-2012	**Treasurer,** Society for Risk Analysis
2009-2012	**Member**, Science Team, Naphthalene Research Coalition
2009-2011	**Member,** Environmental Socioeconomic Analysis Task Force, European Center for Ecotoxicology and Toxicology of Chemicals
2009	**Industry Observer,** International Agency for Research on Cancer
2007	**Industry Observer,** International Agency for Research on Cancer
2006-2010	**Member,** Society for Risk Analysis Membership Committee
2004	**Organizational & Editorial / Publication Committee Member**, International Symposium on 1,3-butadiene & Chloroprene Health Effects
2003	**Peer Review Panel**, Acrylonitrile Health Science Review, Toxicology Excellence for Risk Assessment (TERA)
2002-2004	**Peer Consultation Panel, Core Member,** Voluntary Children's Chemical Evaluation Program (VCCEP), Toxicology Excellence for Risk Assessment (TERA)
2001-2006	**Chair,** Children's Health Coordinating Subgroup, Public Health Forum
2000	**Organizational & Editorial / Publication Committee Member**, International Symposium on 1,3-butadiene, Isoprene, & Chloroprene Health Effects
1999-2003 & 2006-Present	**Chair,** Epidemiology Work Group**,** Olefins Panel, American Chemistry Council
1998	**U. S. Environmental Protection Agency, Scientific Advisory Board Consultant,** 1-3 Butadiene risk assessment
1997-2003 & 2006-Present	**Chair,** Epidemiology Steering Committee, International Synthetic Rubber Producers
1991-1993	**Member,** Polypropylene Task Force, European Center for Ecotoxicology and Toxicology of Chemicals

CONSULTING EXPERIENCE

1990-1995	**Peer Reviewer,** Agency for Toxic Substances and Disease Registry (ATSDR)
1990	**Epidemiology Consultant,** Electric Power Research Institute (EPRI)

1989-1990 **Epidemiology / Biostatistics Consultant,** Harris County, Texas Health Department

ACADEMIC HONORS AND AWARDS

1997 **Beta Gamma Sigma, Business School Honor Society**
Rutgers University, Executive MBA Program

1985-1990 **Health Stipend**
University of Texas School of Public Health

PROFESSIONAL MEMBERSHIPS

2000-Present **Society for Risk Analysis**
1989-Present **Society for Epidemiologic Research**
1987-Present **American Association for the Advancement of Science**

PUBLICATIONS - PEER-REVIEWED JOURNAL ARTICLES

Adenuga D, Goyak KO, Lewis RJ. Evaluating the MoA/human relevance framework for F-344 rat liver epithelioid ganulomas with mineral oil hydrocarbons. Crit Rev Toxicol (*in press*).

Beck NB, Becker RA, Erraguntla N, Farland WH, Grant RL, Gray G, Kirman C, LaKind JS, Lewis RJ, Nance P, Pottenger LH, Santo SL, Shirley S, Simon T, Dourson ML. (2016). Approaches for describing and communicating overall uncertainty in toxicity characterizations: U.S. Environmental Protection Agency's Integrated Risk Information System (IRIS) as a case study. Environ Int 89-90:110-128.

Samuel GO, Hoffmann S, Wright RA, Lalu MM, Patlewicz G, Becker RA, DeGeorge GL, Fergusson D, Hartung T, Lewis RJ, Stephens ML. (2016). Guidance on assessing the methodological and reporting quality of toxicologically relevant studies: a scoping review. Environ Int 92-93:630-646.

Lewis RJ, Copley GB. (2015). Chronic low-level hydrogen sulfide exposure and potential human health effects: A review of the epidemiological evidence. Crit Rev Toxicol 45(2):93-123.

Meek ME, Palermo CM, Bachman AN, North CM, Lewis RJ. (2014). Mode of action human relevance (species concordance) framework: Evolution of the Bradford Hill considerations and comparative analysis of weight of evidence. J Appl Toxicol 34: 595-606.

Money CD, Tomenson JA, Penman MG, Boogaard PJ, Lewis RJ. (2013). A systematic approach for evaluating and scoring human data. Regul Toxicol Pharmacol 66:241-247.

Meek ME, Bolger M, Bus JS, Christopher J, Conolly RB, Lewis RJ, Paoli G, Schoeny R, Haber LT, Rosenstein AB, Dourson ML. (2013). A framework for “fit for purpose” dose-response assessment. Regul Toxicol Pharmacol 66:234-240.

Bukowski JA, Nicolich MJ, Lewis RJ. (2013). Extreme sensitivity and the practical implications of risk assessment thresholds. Dose-Response 11:130-53.

Lewis RJ. (2012). Naphthalene animal carcinogenicity and human relevancy: Overview of industries with naphthalene-containing streams. Regul Toxicol Pharmacol 62:131-137.

Piccirillo VJ, Bird MG, Lewis RJ, Bover WJ. (2012). Preliminary evaluation of the human relevance of respiratory tumors observed in rodents exposed to naphthalene. Regul Toxicol Pharmacol 62:433-440.

Schnatter AR, Nicolich MJ, Lewis RJ. (2012). An analysis of lung cancer incidence in Canadian petroleum workers. Occup Environ Med 69:877-882.

Zelenka MP, Barr DB, Nicolich MJ, Lewis RJ, Bird MG, Letinski DJ, Metcalf SW, O'Lone RB. (2011) A weight of evidence approach for selecting exposure biomarkers for biomonitoring. Biomarkers 16:65-73.

Himmelstein MW, Baan RA, Albertini RJ, Bird MG, Lewis RJ. (2007). International symposium on the evaluation of butadiene and chloroprene health risks. Chemo Biol Interact 166:1-9.

Swenberg JA, Boysen G, Georgieva N, Bird MG, Lewis RJ. (2007). Future directions in butadiene risk assessment. Chemo Biol Interact 166:78-83.

Drummond I, Murray N, Armstrong T, Schnatter AR, Lewis RJ. (2006). Exposure assessment methods for a study of mortality and cancer morbidity in relation to specific petroleum industry exposures. J Occup Environ Hygiene 3: 513-520.

Bukowski JA, Lewis RJ. (2004). Practical implications of non-linear effects in risk assessment harmonization. Nonlinear Biol Toxicol Med 2:3-10.

Bukowski JA, Lewis RJ. (2003). Is the hygiene hypothesis an example of hormesis? Nonlinear Biol Toxicol Med 1:155-166.

Lewis RJ, Schnatter AR, Drummond I, Murray N, Thompson FS, Katz AM, Jorgensen G, Nicolich MJ, Dahlman D, Theriault G. (2003). Mortality and cancer morbidity in a cohort of Canadian petroleum workers. Occup Environ Med 60:918-928.

Bukowski JA, Lewis RJ, Gamble JF, Wojcik NC, Laumbach RJ. (2002). Risk factors for childhood asthma development and their potential impact on national asthma prevalence. Human Ecol Risk Assess 8:735-765.

Fogleman M, Lewis RJ. (2002). Factors associated with self-reported musculoskeletal discomfort in video display terminal (VDT) users. Int J Ind Ergonomics 29:311-318.

Lewis RJ, Gamble, JF. (2002). Mortality among three refinery/petrochemical plant cohorts: reply (letter). J Occup Environ Med 44:396-397.

Lewis RJ, Krawiec M, Confer E, Agopsowicz D, Crandall E. (2002). Musculoskeletal disorder worker compensation costs and injuries before and after an office ergonomics program. Int J Ind Ergonomics 29:95-99.

Lewis RJ, Friedlander BR, Bhojani FA, Schorr WP, Salatich PG, Lawhorn EG. (2002). Reliability and validity of an occupational health questionnaire. J. Occup Environ Med 44:39-47.

Bird MG, Lewis DFV, Whitman FT, Lewis RJ, Pryzgoda RT, Witz G. (2001). Application of process chemistry and SAR modeling to the evaluation of health findings of lower olefins. Chem Biol Interact 135-136:571-584.

Lewis RJ, Fogelman M, Deeb J, Crandall E, Agopsowicz D. (2001). Effectiveness of a VDT ergonomics training program. Int J Ind Ergonomics 27:119-131.

Bukowski JA, Lewis RJ. (2000). Hormesis and health: a little of what you fancy may be good for you. South Med J 93:371-374.

Gamble JF, Lewis RJ, Jorgensen G. (2000). Mortality among three refinery/petrochemical plant cohorts. II. Retirees. J Occup Environ Med 42:730-736.

Lewis RJ, Gamble JF, Jorgensen G. (2000). Mortality among three refinery/petrochemical plant cohorts. I. 1970-1982 active/terminated workers. J Occup Environ Med 42:721-729.

Lewis RJ, Schnatter AR, Katz AM, Thompson FS, Murray N, Jorgensen G, Theriault G. (2000). Updated mortality among diverse operating segments of a petroleum company. Occup Environ Med 57:595-604.

Lewis RJ, Yarborough CM, Nicolich MJ, Friedlander BR. (1999). Lymphopoietic cancer and other major causes of death among petrochemical researchers: an update. Occup Med 49:71-77.

Gamble JF, Lewis RJ. (1996). Health and respirable particulate (PM_{10}) air pollution: a causal or statistical association? Environ Health Perspect 104:838-850.

Lewis RJ, Huebner WW, Yarborough CM. (1996). Characteristics of participants and non-participants in worksite health promotion. Am J Health Promot 11:99-106.

Lewis RJ, Lerman SE, Schnatter AR, Hughes JI, Vernon SW. (1994). Colorectal polyp incidence among polypropylene manufacturing workers. J Occup Med 36:174-181.

Lewis RJ, Schnatter AR, Lerman SE. (1994). Colorectal cancer incidence among polypropylene manufacturing workers: An update. J Occup Med 36:652-659.

Lewis RJ, Buffler P. (1991). Central nervous system tumors and occupational exposure to electric and magnetic fields. Am J Epidemiol 134:755.

Lewis RJ, Cooper SP. (1989). Alcohol, other drugs, and fatal work-related injuries. J Occup Med 31:23-28.

PUBLICATIONS - PEER-REVIEWED MANUSCRIPTS SUBMITTED OR IN PREPARATION

Belzer RB, Lewis RJ. The practical significance of measurement error in pulmonary function testing. (*submitted to Risk Analysis).*

Magee B, Forsberg N, Lewis RJ. Retrospective population risk assessment to validate dose-response values for human health risk assessment. Human Ecological Risk Assessment (*manuscript in revision).*

Schnatter AR, DeVilbiss EA, Chen M, Lewis RJ, Gallagher EM. Systematic review and meta-analysis of selected cancers in petroleum refinery workers. (*submitted to Scandinavian Journal of Work Environment & Health)*

SELECTED PRESENTATIONS & POSTERS

Lewis RJ, Belzer RB. Risks and benefits of reducing ozone exposure after re-evaluating a recent chamber study. Society for Benefit-Cost Analysis Annual Meeting, March 17-18, 2017 (presentation).

Lewis RJ. The pursuit of quality and objectivity in risk assessment. Toxicology Forum Summer Meeting, July 25-27, 2016 (presentation)

Belzer RB, Lewis RJ. Are Measured Differences in Pulmonary Function "Different"? Society for Risk Analysis Annual Meeting, December 12-14, 2016 (presentation).

Belzer RB, Lewis RJ, Bachman AM. Implications for benefits estimation of uncontrolled variance in spirometric studies of air pollution. Society for Benefit-Cost Analysis Annual Meeting, March 16-17, 2015 (presentation).

Foreman J, Lewis RJ. Communication of uncertainty in human health risk assessments. Society of Toxicology Annual Meeting, March 22-26, 2015 (poster).

Adenuga D, Goyak KM, Lewis RJ. Evaluating the MoA/Human Relevance Framework for F-344 rat liver epithelioid ganulomas with mineral oil hydrocarbons. Society of Toxicology Annual Meeting, March 22-26, 2014 (poster).

LeHurray A, Sun TJ, Beatty P, Reitman F, Lewis RJ. Naphthalene research program: working hypotheses and research results. Society for Risk Analysis Annual Meeting, December 7-10, 2014 (poster).

Lewis RJ, Beck N. EPA's framework for human health risk assessment to inform decision making: an industry perspective. Society for Risk Analysis Annual Meeting, December 7-10, 2014 (presentation).

Lewis RJ, Grant R, Santos S, Dourson M, Shirley S, Erraguntla N. Unpacking toxicity assessments to understand and improve confidence. Society for Risk Analysis Annual Meeting, December 7-10, 2014 (presentation).

Lewis RJ, Beck N. EPA's framework for human health risk assessment to inform decision making: an industry perspective. Society for Risk Analysis Annual Meeting, December 7-10, 2014 (presentation).

Piccirillo VJ, Bird MG, Lewis RJ, Bover WJ. (2011). Preliminary evaluation of the human relevance of respiratory tumors observed in rodents exposed to naphthalene. The Toxicologist 120 (suppl 2):52.

Lewis RJ. (2011). Overview of existing epidemiology data for industries with naphthalene-containing streams. The Toxicologist 120 (supple 2):418-419.

Lewis RJ. (2010). Overview of existing epidemiology data for industries with naphthalene-containing streams. Navy & Marine Corp Public Health Center's 49th Annual Public Health Conference, March 22-25, 2010 (invited presentation).

Bird MG, Lewis RJ, Piccirillo VJ. (2009). Using the human relevance framework as a guide to naphthalene research. Society for Risk Analysis Annual Meeting, December 7-9, 2009 (poster).

LeHurray AP, Bird MG, Hammon TL, Juba MH, Lewis RJ, Reitman F, Sun T-J, White RD, Wise K. (2009). Naphthalene research: the relevance of tumors in rodents to human risk assessment. Society for Risk Analysis Annual Meeting, December 7-9, 2009 (poster).

LeHurray AP, Bird MG, Hammon TL, Juba MH, Lewis RJ, Reitman F, Sun T-J, White RD, Wise K. (2009). Naphthalene research: the relevance of tumors in rodents to human risk assessment. Toxicology and Risk Assessment Conference, April 27-30, 2009 (poster).

Mannix MK, Bachman AN, Low LK, Lewis RJ, Bird MG. (2008). Rat strain differences in nasal tissue response and metabolism. Society of Toxicology Annual Meeting, March 16-20, 2008 (poster).

Lewis RJ, Bukowski JA. (2007). Hygiene hypothesis: A review of chronic diseases beyond allergies and asthma. Second American Congress of Epidemiology meeting, June 21-24, 2007 (poster).

Zelenka M, Bird M, Nicolich M, Lewis RJ, Minsavage G, Barr D, Doerrer N. (2007). Development of a prototype framework for determining the appropriateness of a biomarker of exposure. Society of Toxicology Annual Meeting, March 25-29, 2007 (poster).

Hammitt JK, Lewis RJ, Bukowski JA. Radon in drinking water: A case-study economic analysis with nonlinear exposure-response. (2006). Society for Risk Analysis Annual Meeting, December 3-6, 2006 (presentation).

Lewis RJ, Nicolich MJ, Thompson KM. Value of information analysis in research priority setting. (2003). 23rd International Symposium on Halogenated Environmental Organic Pollutants and POPs, August 24-29, 2003 (invited presentation).

Armstrong TW, Drummond I, Murray N, Lewis RJ. Use of a semi-quantitative exposure database for a cohort exposure assessment. (1999). International Symposium on Occupational Exposure Databases and Their Application for the Next Millennium, November 1-3, 1999 (presentation).

Drummond I, Murray N, Armstrong T, Lewis R, Schnatter A. (1999). Use of exposure assessment data to develop retrospective exposure estimates for an epidemiology study. American Industrial Hygiene Conference and Exposition, June 5-11, 1999 (presentation).

SELECTED REPORTS & REVIEWS

Gephart L, Lewis RJ, Roberts P, Salter E, White L, Post L. (2006). Analysis of the CAFE cost benefit analysis. Report prepared by the CONCAWE Air Quality Management Group's Special Task Force on cost benefit analysis (STF-66). The Oil Companies' European Association for Environment, Health and Safety in Refining and Distribution (CONCAWE), Report No. 4/06, June 2006.

European Centre for Ecotoxicology and Toxicology of Chemicals (ECETOC) Task Force. (2000). Comments on recommendation from Scientific Committee on Occupational Exposure Limits for 1,3-butadiene. Document no. 40. Brussels; Belgium.

Lewis RJ, Caldwell DJ. (1999). Scientific basis for an air quality standard for nickel. Report no. 99/53. Prepared for the Oil Companies' European Organization for Environment, Health and Safety (CONCAWE). Brussels, Belgium.European Centre for Ecotoxicology and Toxicology of Chemicals (ECETOC) Polypropylene Task Force. (1994). Polypropylene production and colorectal cancer. Technical Report No. 57. Brussels, Belgium.

Kilborn LJ, Canfield MA, Lewis RJ, Pusok G. (1992). Health services area data notebook: Selected demographic and health status measures by health service area and census tract, 1980-1990. Harris County Health Department, Houston, Texas.

Canfield MA, Moffitt KB, Kilborn LJ, Hyslop T, Lewis RJ. (1990). The health status of Harris county residents: Natality, mortality and populations 1980-86. Harris County Health Department, Houston, Texas.

Lewis RJ. (1990). Day-night patterns in workplace accidental deaths: role of alcohol abuse as a contributing factor. In: Hayes DK, Pauly JE, Reiter RJ (Eds). Chronobiology: its role in clinical medicine, general biology, and agriculture, part b. Proceedings of the XIX International Conference of the International Society for Chronobiology, June 20-24, 1989, Bethesda. New York; Wiley-Liss Co., pgs 327-335.

Merlin R. Lindstrom, PhD
Vice President Technology, Phillips 66

Contact Information

Oklahoma Office
E-mail: Merl.R.Lindstrom@p66.com (Business)
[redacted] (Personal)

Address: 260 Research Forum
Phillips 66 Research Center
Bartlesville, OK 74003-6670

Office: (918) 977-4050
Mobile: [redacted]

Key Accomplishments

- Revitalized an aging R&D organization.
  - Infused organization with 40% new employees over 3 years through aggressive performance management, rigorous recruiting process, and highly successful on-boarding and new hire development program.
  - Developed a very successful innovative program to reduce the cycle time of contribution, and increase the effectiveness of foreign born nationals.
  - Over 5 years doubled the Invention Records produced annually and exceeded 200 U.S. patents applications submitted.

- Successfully developed / incubated pre-commercial technologies both internally, and through sponsored and joint research which led to commercialization of petrochemicals, advanced polymers, refining processes, renewable fuels and environmental mitigation processes.

- Established sustainability research program and grew it to $40MM/yr. after 5 years.

- Cultivated close international relationships over 30 years which led to successful commercial projects.

- Developed a strong safety culture which has dramatically improved safety result in all operations managed.

- Led an interdisciplinary team who qualified a novel thermoplastic carbon fiber composite for the Stealth Fighter in under a year.

Responsibilities

- Manage a budget of ~$100MM, a staff of ~400, 40% PhD's

- Direct Phillips 66 research in the following areas:

  Water, Air and Sustainable Technologies
  - Water (including heavy metal removal, nutrient removal, organics removal, recycle)
  - Air (including particulate matter, volatile organic compound (VOC) dispersion, reactions which occur in air during dark hours, and fence line monitoring)
  - Biofuels (including renewable diesel, gasoline from cellulose, and algae)
  - Organic Photovoltaics (polymer based rather than Si based)

- Solid Oxide Fuel Cells (operating on methane directly rather than hydrogen)

Downstream/Refining
- Refining Operation Optimization
- Shale Crude Refining
- Natural Gas Liquids Processing and Conversion to Higher Valued Products
- Bitumen Processing
- Canadian Bitumen (tar sands) conversion to motor fuels
- Nanotechnology (catalysts and sorbents)

Other
- Corporate Analytical Services
- Corporate Pilot Plan Operations
- Computational Fluid Dynamics
- Conceptual Design and Engineering
- HSE responsibility for Phillips 66 Research Center
- Sponsored research at various universities worldwide
- Joint Development research with various companies worldwide

Professional History

Phillips 66 Company

Vice President, Technology	05.01.2012 –	Present

ConocoPhillips Company

Sr. Vice President, Technology	10.15.2010 –	05.01.2012
Vice President, Research and Development	12.01.2007 –	10.15.2010
General Manager, Research and Development and Shared Services	01.16.2007 –	12.01.2007
General Manager, Research and Development Downstream Tech.	09.01.2002 –	01.16.2006

Phillips Petroleum Company

Manager, Technical Services and Facilities, R&D	12.01.2002 –	09.01.2002
Manager, Woods Cross Refinery and Business Unit	08.17.1998 –	12.01.2001
Manager, Petrochemical Division R&D	04.17.1995 –	08.17.1998
Manager, Chemicals Division R&D	02.01.1991 –	04.17.1991
9 positions of increasing responsibility in all areas of R&D, Chemicals, Plastics, Engineering Materials and Corporate Planning and Budgeting	08.28.1978 –	02.01.1991

Board of Directors, Advisory Boards and Other Affiliations

Board of Directors: Pre-Commercial Technologies
- I2E (innovation to entrepreneurs) non-profit organization that oversees distribution of the Oklahoma Center for Science and technology incubator funds
- SWeNT (Southwest Nanotubes) Start-up nanotube company based on technology developed by Oklahoma University based on funding supplied by Phillips 66
- Aquatic Energy Start-Up algae growth and harvesting company

Water and Sustainable Technologies: Sponsored Research and Affiliations
- Archer Daniel Midland joint research in 3rd generation biofuels
- Iowa State University $22.5MM Phillips sponsored research in 3rd generation biofuels
- C2B2 (Colorado renewable fuels consortium) $3MM Phillips 66 sponsored research in algae based biofuels
- Georgia Tech Phillips 66 sponsored research in nanotechnology and CO2 capture
- Phillips 66 executive contact for Freedom Car

Downstream/Refining: Sponsored and Joint Research

- Research Institute of Petrochemical Processing (RIPP – division of Sinopec) joint research in refining catalysis
- Shanghai Research Institute of Petrochemical Technology (SRIPT – division of Sinopec) joint research on solid alkylation catalysts
- Beijing Research Institute of Chemical Industries (BRICI-division of Sinopec) joint research in olefin polymerization catalysts
- Toray Industries joint research on polyphenylene sulfide film
- Saudi Aramco joint research in hydrotreating whole crudes
- Oklahoma University Phillips 66 sponsored research in fuel upgrading catalysts
- Cenovus joint research in Canadian Bitumen (tar sands) upgrading to motor fuels

Academic Advisory Boards and Other Affiliations

- Oklahoma State University advisory board for the Master of Science in Engineering and Technology Management
- Northern Oklahoma College advisory board for Process Technology
- Phillips 66 executive contact for the University of Tulsa
- Phillips 66 executive contact for the Industrial Research Institute (IRI)

Education, Patents and Publications

PhD Chemistry, North Dakota State University	1978
BS Chemistry, North Dakota State University	1973

19 US Patents
4 Foreign Patents

20+ Publications in a variety of technical journals
Chapter on “Sulfolanes and Sulfone” Kirk-Othmer Encyclopedia of Chemical Technology

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I. PERSONAL AND PROFESSIONAL INFORMATION

Education:

2000	Environmental Science	Ph.D.	Lancaster University, U.K.
1996	Chemical Engineering	Master (Diplom)	EHICS, Strasbourg, France.
1993	Biochemistry	Vordiplom	Ruhr-Universität Bochum, Germany

Professional Appointments:

2013 – present Editor, *Environmental Toxicology and Chemistry*

2016 – present Editorial Advisory Board, *Environmental Science and Technology*
2013 – present Editorial Board, *Environmental Science and Technology Letters*
2013 – present Editorial Board, *Environmental Pollution*
2009 – present Editorial Board, *Atmospheric Pollution Research*
2007 – 2016 Editor, *CLEAN – Air, Soil, Water*, Wiley-VCH
2012 – 2013 Editorial Board, *The Scientific World*
2008 – 2010 Editorial Board, *Environmental Toxicology and Chemistry*
2007 – 2012 Editorial Board, *Open Environmental & Biological Monitoring*

2011 *Humboldt Fellow*, University of Tübingen (Germany)
2011 *Visiting Associate Professor*, IIT Madras, Chennai (India)
2010 *Visiting Fellow*, National Institute of Oceanography Goa (India)
2013 – present *Full Professor*, Graduate School of Oceanography.
2009 – 2013 *Associate Professor*, Graduate School of Oceanography.
2004 – 2009 *Assistant Professor*, Graduate School of Oceanography.
2004 *Fellow,* Research Center for Ocean Margins, University of Bremen, Germany
2003 *Research Associate*, Lancaster University, U.K.
2003 *summer Fellow,* Max-Planck Institute of Meteorology, Hamburg, Germany
2000 – 2002 *DAAD Fellow*, Massachusetts Institute of Technology, Cambridge (MA)

Areas of Specialization:

Marine Organic geochemistry; global transport and fate of persistent organic pollutants; bioavailability of sedimentary organic contaminants; fluxes of black carbon in lakes and oceans; passive sampling development; global mass balance of organic compounds.

Awards and Fellowships:

2013 INNOLEC Visiting Lectureship Masyruk University, Brno (Czech Republic)
2011 Excellence in Review Award, Environmental Science &Technology
2011 Humboldt Fellow, University of Tübingen (Germany)

2011	Montgomery Watson Harza/AEESP 1st place Master Thesis Advisor award
2011	Visiting Associate Professor, IIT Madras, Chennai (India)
2010	Visiting Fellow, National Institute of Oceanography Goa (India)
2007	1st Runner-up for Environmental Technology Paper of the year, *Environmental Science &Technology*
2006	Recipient of the Roy F. Weston Environmental Chemistry Award by the Society of Environmental Toxicology and Chemistry (SETAC).
2006	URI Exceptional Salary Increase.
2004	*Fellowship,* Research Center for Ocean Margins, University of Bremen (GER).
2003	*Fellowship,* Max-Planck Institute of Meteorology, Hamburg (GER).
2002	*Best Poster Price*, Gordon Res. Conference 'Environmental Sciences: Water'.
2000-2002	*DAAD Fellow,* Massachusetts Institute of Technology, Cambridge (MA).

II. UNIVERSITY TEACHING AND ADVISING EXPERIENCE

I have instructed every term when present at URI, teaching undergraduate and graduate courses and advising graduate students. In the fall, I teach my own graduate class at GSO (either OCG 523 or OCG 693). Over the last few years, enrollment in these courses has doubled (to around 10 per course) by attracting graduate students from Engineering, Geosciences and Pharmacy in addition to those from Oceanography. In the spring I have co-taught with John King OCG 480/580 (Introduction to Marine Pollution). Last year, I taught the class on my own, enrollment has increased to around 15. In addition, I have supervised and trained at least 3 undergraduate students per year in research projects in my laboratory. I have created a new 600-level graduate class in Marine Organic Chemistry, and introduced group assignments as part of the curriculum. At the beginning of each year, I have participated in the 'Instructional Development Workshop' to further improve my teaching. For my graduate students at GSO, I have introduced a public, 45 min presentation as part of their thesis defense. This defense format has since become the norm at URI-GSO. Most of my graduate students have received awards from URI, national and international organizations for their work and presentations. An ongoing objective of my teaching is to make connections between classroom instruction, advising, and research.

Undergraduate and Graduate Teaching Experience

Semester	Course No.	Course Title	Credit	Contact Hours	No. of Students	Sole Instructor/ Team Taught
Spring 2004	(University of Bremen)	Groundwater Pollution (European Masters Program in Geology)	3	2.5 hrs/wk	12	Team taught with Kay Hamer
Fall 2005	OCG 523	Organic Geochemistry of Natural Waters	3	2.5 hrs/wk	4	Sole
Spring 2006	OCG 480/580	Introduction to Marine Pollution	3	2.5 hrs/wk	4 (480) 5 (580)	Team taught with John King
Fall 2006	OCG 693	Marine Organic Chemistry	3	2.5 hrs/wk	4	Sole

2006	OCG 631	Seminar in Marine and Atmospheric Chemistry, '*New Approaches and Tools in Oceanography*'	1	1 hr/wk	~ 12	Organizer
Spring 2007	OCG 480/580	Introduction to Marine Pollution	3	2.5 hrs/wk	2 (480) 5 (580)	Team taught with John King
2007	OCG 631	Seminar in Marine and Atmospheric Chemistry	-	1 hr/wk	~ 12	Organizer
Fall 2007	*OCG 593**	*Organic Geochemistry of Natural Waters*	*3*	*2.5 hrs/wk*	*2*	*Sole*
Spring 2008	OCG 480/580	Introduction to Marine Pollution	3	2.5 hrs/wk	4 (480) 2 (580)	Team taught with John King
2008	OCG 631	Seminar in Marine and Atmospheric Chemistry	-	1 hr/wk	~ 12	Organizer
Fall 2008	OCG 6XX	Marine Organic Chemistry	3	2.5 hrs/wk	4	Sole
Spring 2009	OCG 480/580	Introduction to Marine Pollution	3	2.5 hrs/wk	5 (580)	Team taught with John King
Spring 2009	OCG 593	Independent study	3	2 hrs/wk	1	Sole
Fall 2009	OCG 523	Organic Geochemistry of Natural Waters	3	2.5 hrs/wk	6	sole
Spring 2010	OCG 480/580	Introduction to Marine Pollution	3	2.5 hrs/wk	3 (580) 10 (480)	Team taught with John King
Spring 2011	Short-term Training Course	Environmental Chemodynamics (IIT Madras)	n/a	5 lectures	20	Team taught with Ravi Krishna
Fall 2011	OCG 693	Marine Organic Chemistry	3	2.5 hrs/wk	10	Sole
Spring 2012	OCG 480/580	Introduction to Marine Pollution	3	2.5 hrs/wk	5 (580) 10 (480)	Sole
Fall 2012	OCG 523	Organic Geochemistry of Natural Waters	3	2.5 hrs/wk	8	Sole
Spring 2013	OCG 480/580	Introduction to Marine Pollution	3	2.5 hrs/wk	4 (580) 13 (480)	Sole
Fall 2013	OCG 693	Marine Organic Chemistry	3	2.5 hrs/wk	4	Sole
Spring 2014	OCG 480/580	Introduction to Marine Pollution	3	2.5 hrs/wk	2 (580) 5 (480)	Sole
Fall 2014	OCG 523	Organic Geochemistry of	3	2.5 hrs/wk	4	Sole

		Natural Waters				
Spring 2015	OCG 480/580	Introduction to Marine Pollution	3	2.5 hrs/wk	3 (580) 18 (480)	Sole
Fall 2015	OCG 519	Marine Organic Chemistry	3	2.5 hrs/wk	5	Sole
Spring 2016	OCG 480/580	Introduction to Marine Pollution	3	2.5 hrs/wk	4 (580) 15 (480)	Sole
Fall 2016	OCG 523	Organic Geochemistry of Natural Waters	3	2.5 hrs/wk	4	Sole
Spring 2017	OCG 480/580	Introduction to Marine Pollution	3	2.5 hrs/wk	5 (580) 21 (480)	Sole

* taught as independent study during paternal leave

Graduate Student Advising Experience (*denotes year student graduated)

Student	Degree Thesis or Non-Thesis Option	Year Graduated/Expected
Eric Morgan	M.Sc., Oceanography, GSO (Thesis)	2005 – 2007*
Pamela Luey	M.Sc., Oceanography, GSO (Thesis)	2007 – 2010*
Matthew Lambert	M.Sc., Oceanography, GSO (Thesis)	2007 – 2010*
Carey Friedman	Ph.D., Oceanography, GSO	2006 – 2010*
Victoria Sacks	M.Sc., Oceanography, GSO (Thesis)	2008 – 2010*
Lin Zhang	Ph.D., Oceanography, GSO	2007 – 2012*
Shifra Yonis	M.Sc., Oceanography, GSO (Thesis)	2009 – 2012*
Zoe Ruge	M.Sc., Oceanography, GSO (Thesis)	2011-2013*
Kari Pohl	Ph.D., Oceanography, GSO	2009 – 2014*
Erin Markham	M.Sc., Oceanography, GSO (Thesis)	2012-2014*
Caoxin Sun	M.Sc., Oceanography, GSO (Thesis)	2013-2015*
Jennifer Cragan	M.Sc., Oceanography, GSO (Thesis)	2012-2016*
Benjamin Chebot	M.O., Oceanography, GSO	2014-2016*
Erik Dixon-Andersen	M.Sc., Oceanography, GSO (Thesis)	2014-2017*
Rachel Miller	M.Sc., Oceanography, GSO (Thesis)	2015-2017*
Carrie McDonough	Ph.D., Oceanography, GSO	2012-2017
Anna Robuck	Ph.D., Oceanography, GSO (Thesis)	2015-2019

Graduate Student Awards

2007 *Eric Morgan* - Kester-Corless Award for best MAC seminar
2008 *Carey Friedman* - Kester-Corless Award for best MAC seminar

2008	*Carey Friedman* – SETAC travel award
2008	*Victoria Dekany* – AGU travel award
2009	*Carey Friedman* - Webb award
2009-2010	*Carey Friedman* – Graduate student fellowship by the Hudson River Foundation ($ 16,000)
2009	*Matt Lambert* – SETAC travel award
2009	*Matt Lambert* – SETAC best poster presenter for MS students ($ 250)
2009	*Lin Zhang* – SETAC travel award
2010	*Alison Brandeis* – Ocean Sciences travel award
2010	*Victoria Sacks* - Kester-Corless Award for best MAC seminar
2010	*Victoria Sacks* – North-Atlantic SETAC – best poster price and travel award ($ 1,000)
2011	*Lin Zhang* –North American SETAC Student Training Exchange Opportunity (STEO) award ($ 1,000)
2011	*Victoria Sacks* – 1st place Montgomery Watson Harza/AEESP Master Thesis award ($ 1,500)
2012	*Kari Pohl* - Kester-Corless Award for best MAC seminar
2013	*Zoe Ruge* - Webb Award for Environmental Studies
2013	*Kari Pohl* – Ada Sawyer Award for Outreach and Communication
2014	*Erin Markham* - Kester-Corless Award for best MAC seminar
2014	*Carrie McDonough* - Webb Award for Environmental Studies
2014	*Jennifer Cragan*– Ada Sawyer Award for Outreach and Communication
2016	*Carrie McDonough* – ACS Graduate Student Award in Environmental Chemistry
2016	*Carrie McDonough* – URI Graduate Student Fellowship ($30 k)
2016	*Carrie McDonough* – SETAC travel award
2016	*Carrie McDonough* – Hudson River Foundation Graduate Student Fellowship ($ 16,000)
2016	*Carrie McDonough* – Ricci Award
2016	*Anna Robuck* – Webb Award for Environmental Studies
2017	*Carrie McDonough* – ACS Graduate Student Paper Award in Environmental Chemistry ($ 1,000)
2017	*Christine Gardiner (senior)* – URI Undergraduate Research Initiative ($ 990)
2017	*Carrie McDonough* – University of Rhode Island Research and Scholarship Excellence Award

III. RESEARCH ACTIVITIES

Brief description of my research specialization: My main research interests combine marine organic geochemistry and environmental chemistry. On the molecular scale, my research focuses on the global transport and fate of recalcitrant organic compounds, such as persistent organic pollutants. At URI-GSO, I have begun exploring the geochemical cycle of black carbon particles, by linking atmospheric emission predictions with their sedimentary fluxes in sediments.
I testified before the U.S. House Energy and Commerce Subcommittee on Environment and the Economy on July 11, 2013 (2322 Rayburn House Office Building) on 'Regulation of New Chemicals, Protection of Confidential Business Information, and Innovation'. I have also been

working closely with staff from Senator Whitehouse to advance meaningful TSCA (Toxic Substances Control Act) reform. I lead a viewpoint article in which I outlined, together with colleagues from Duke and Indiana University, suggestions for TSCA reform, based on our experience in the field. We also wrote a guest editorial in the weekly journal of the American Chemical Society (Chemical and Engineering News) on how science should strengthen TSCA reform.

I have engaged with decision-makers by working with scientists from the U.S. Environmental Protection Agency and Environment Canada to advance the use of novel sampling devices to better characterize fluxes of organic pollutants in water and air (e.g., Lohmann and Muir, 2010). This has lead to the use of passive samplers at various Superfund sites to better characterize bioavailability and risk posed by organic pollutants. The United Nations Environment Program currently considers passive sampling as a means of validating their efforts to curb global emissions. I have teamed up with other leading scientists to propose global initiatives to detect the presence and trends of global marine pollutants. For example, I co-wrote a 10-year assessment of the Stockholm Protocol (Klanova et al., 2011) which was disseminated to national and international regulatory agencies. In April 2012, I will meet with a small group of scientists to assess whether we can define a 'planetary boundary' for chemical pollution (Diamond et al., 2015). I also co-wrote the Florence statement calling for a limited use of antimicrobials for the general public (2016).

This again highlights that I am working as part of an interdisciplinary network of environmental leaders who seek to transfer their findings and results into global action by alerting the public and through the targeted dissemination of reports to key agencies. I was awarded the Roy F. Weston award by SETAC for the advancement of environmental problem solving in 2006.

Over the last few years I have advised international visitors, including a Fulbright scholar (Dr Mohammed Khairy), a post-doc funded by the Brazilian Government (Dr. Rodrigo Meires), several scientists from leading Chinese institutions and a POGO visitor from Pakistan (Sanober Kahkashan). During my sabbatical leave (2011-2012) I was awarded a prestigious Humboldt fellowship from the German Government, and was given an 'Excellence in Reviewing Award' by *Environmental Science and Technology* for my sustained high-quality reviews for this leading ACS journal.

I have > 100 peer-reviewed publications, which have been cited > 3,500 times, and participated in over 10 research cruises. My h-index is 35 (35 publications with at least 35 citations each). Since 2004, I have been awarded > $ 3 Mio in external funding from the U.S. National Science Foundation (NSF), National Ocean and Atmospheric Administration (NOAA), the U.S. Environmental Protection Agency (EPA), private foundations and other Federal and State funding agencies. A number of research projects have been conducted in collaboration with investigators at other institutions, both nationally and internationally. I am leading a collaboration with scientists from Environment Canada to assess the spatial and temporal gradients of legacy and emerging contaminants across the Great Lakes on a 5-year grant from EPA. In a recently funded project by NSF's Office of Polar Programs, I collaborate with PIs from Harvard and MIT to understand the effect of climate change on the transport and fate of legacy and emerging contaminants in the Arctic Ocean.

I have given over 65 invited presentations, including four at Gordon Research Conferences as presenter of discussion leader (Oceans and Human Health in 2012 and 2014, Environmental Sciences: Water in 2008 and 2010). My group has given over 150 presentations of our research results at conferences.

PEER REVIEWED JOURNAL ARTICLES AND BOOK SECTIONS

(google scholar citations > 4800; *h*=38)

1. Thomas, G.O.; Sweetman, A.J.; Lohmann, R.; Jones, K.C. Derivation and field testing of air-milk and feed-milk transfer factors for PCBs. *Environ Sci Technol* **1998**, *32*, 3522 - 3528.

2. Lohmann, R.; Jones, K.C. Dioxins and furans in air and deposition: a review of levels, behaviour and processes. *Sci Total Environ* **1998**, *219*, 53-81.

3. Lee, R.G.M.; Green, N.J.L.; Lohmann, R.; Jones, K.C. Seasonal, anthropogenic, air mass and meteorological influences on the atmospheric concentrations of PCDD/Fs: Evidence for the importance of diffuse combustion sources. *Environ Sci Technol* **1999**, *33*, 2864 - 2871.

4. Lohmann, R.; Green, N.J.L.; Jones, K.C. Atmospheric transport of PCDD/Fs across the UK and Ireland: Evidence of emission and degradation. *Environ Sci Technol* **1999**, *33*, 2872-2878.

5. Lohmann, R.; Green, N.J.L.; Jones, K.C. Detailed studies of the factors controlling atmospheric PCDD/F concentrations. *Environ Sci Technol* **1999**, *33*, 4440-4447.

6. Lohmann, R.; Lee, R.G.M.; Green, N.J.L.; Jones, K.C. Gas-particle partitioning of PCDD/Fs in daily air samples. *Atmos Environ* **2000**, *34*, 2529-2537.

7. Lohmann, R.; Northcott, G.C.N.; Jones, K.C. Assessing the contribution of diffuse domestic burning as a source of PCDD/Fs, PCBs and PAHs to the UK atmosphere. *Environ Sci Technol* **2000**, *34*, 2892-2899.

8. Lohmann, R.; Nelson, E.; Eisenreich, S.J.; Jones, K.C. Evidence for Dynamic Air - Water Exchange of PCDD/Fs: A study in the Raritan Bay / Hudson River Estuary. *Environ Sci Technol* **2000**, *34*, 3086-3093.

9. Lohmann, R.; Harner, T.; Thomas, G.O.; Jones, K.C. A comparative study of the gas-particle partitioning of PCCD/Fs, PCBs and PAHs. *Environ Sci Technol* **2000**, *34*, 4943-4951.

10. Lohmann, R.; Corrigan, B.P.; Howsam, M.; Jones, K.C.; Ockenden, W.A. Further developments in the use of semi-permeable membrane devices (SPMDs) as passive air samplers for persistent organic pollutants: Field application in a spatial survey of PCDD/Fs and PAHs. *Environ Sci Technol* **2001**, *35*, 2576-2582.

11. Ockenden, W.A.; Lohmann, R.; Shears, J.R.; Jones, K.C. The significance of PCBs in the atmosphere of the southern hemisphere. *Environ Sci Pollut Res* **2001**, *8*, 189-194.

12. Lohmann, R.; Ockenden, W.A.; Shears, J.; Jones, K.C. Atmospheric Distribution of Polychlorinated Dibenzo-*p*-dioxins, Dibenzofurans (PCDD/Fs) and non-*ortho* Biphenyls (PCBs) along a North-South Atlantic Transect. *Environ Sci Technol* **2001,** *35*, 4046-4053.

13. Lohmann, R.; Ockenden, W.A.; Shears, J.; Jones, K.C. On the occurrence and distribution of dioxins. Short Review in *Directions in Science*, *TheScientificWorld* **2002**, *1*, 7-9.

14. Dachs, J.; Lohmann, R.; Ockenden, W.A.O.; Méjanelle, L.; Eisenreich, S.J.; Jones, K.C. Oceanic biogeochemical controls on global dynamics of persistent organic pollutants. *Environ Sci Technol* **2002,** *36*, 4229-4237 (*Editor's highlight*).

15. Lohmann, R.; Brunciak, P.L.; Dachs, J. Gigliotti, C.L.; Nelson, E.; Van Ry, D.; Glenn, T.; Eisenreich, S.J.; Jones, J.L.; Jones, K.C. Processes controlling diurnal variations of PCDD/Fs in the New Jersey coastal atmosphere. *Atmos Environ* **2003**, *37*, 959-969.

16. Lohmann, R. The emergence of black carbon as a super-sorbent in Environmental Chemistry: the end of octanol? *Environ Forensics* **2003**, *4*, 161-165.

17. Lohmann, R.; Jaward, F.; Durham, L.; Barber, J.L.; Jones, K.C.; Bruhn, R.; Lakaschus, S.; Dachs, J.; Booij, K. Potential contamination of ship-board air samples with PCBs and other persistent organic pollutants: implications and solutions. *Environ Sci Technol* **2004**, *38*, 3965-3970.

18. Lohmann, R.; Lammel, G. Adsorptive and absorptive contributions to the gas particle partitioning of polycyclic aromatic hydrocarbons: State of knowledge and recommended parameterisation for modelling. Critical review - *Environ Sci Technol* **2004**, *38*, 3793-3803.

19. Jaward, F.; Barber, J.L.; Booij, K.; Dachs, J.; Lohmann, R.; Jones, K.C. Evidence for dynamic air-water coupling of persistent organic pollutants over the open Atlantic Ocean. *Environ Sci Technol* **2004,** *38*, 2617-2625.

20. Jurado, E.; Lohmann, R.; Meijer, S.; Jones, K.C.; Dachs, J. Latitudinal and seasonal capacity of the surface Oceans as a reservoir of polychlorinated biphenyls. *Environ Pollut* **2004**, *128,* 149-162.

21. Burgess, R.M.; Lohmann, R. Role of Black Carbon on the Partitioning and Bioavailability of Organic Pollutants, Letter to the Editor. *Environ Toxicol Chem* **2004**, *23*, 2531-2533.

22. Lohmann, R.; Burgess, R.M.; Cantwell, M.G.; Ryba, S.A.; MacFarlane, J.K.; Gschwend, P.M. Dependency of Polychlorinated Biphenyl and Polycyclic Aromatic Hydrocarbon Bioaccumulation in *Mya arenaria* on Both Water Column and Sediment Bed Chemical Activities. *Environ Toxicol Chem* **2004**, *23*, 2551-2562.

23. Jurado, E.; Jaward, F.M.; Lohmann, R.; Jones, K.C.; Simo, R.; Dachs, J. Atmospheric dry deposition of persistent organic pollutants to the Atlantic and inferences for the global Oceans. *Environ Sci Technol* **2004**, *38*, 5505-5513 (*Editor's highlight*).

24. Lohmann, R.; MacFarlane, J.K.; Gschwend, P.M. On the Importance of Black Carbon to Sorption of PAHs, PCBs and PCDDs in Boston and New York Harbor Sediments. *Environ Sci Technol* **2005**, *39*, 141-148.

25. Lee, R.G.M.; Coleman, P.; Jones, J.L.; Jones, K.C.; Lohmann, R. Emission factors of PCDD/Fs, PCBs, PCNs and PAHs from the domestic burning of coal and wood. *Environ Sci Technol* **2005**, *39*, 1436-1447.

26. Jurado, E.; Jaward, F.M.; Lohmann, R.; Jones, K.C.; Simo, R.; Dachs, J. Wet deposition of persistent organic pollutants to the global Oceans. *Environ Sci Technol* **2005**, *39*, 2426 – 2435.

27. Lohmann, R.; Lee, R.G.M.; Abbott, J.; Coleman, P.; Jones, K.C. Verifying emission factors and national POPs emission inventories for the UK using measurements and modelling at two rural locations. *J Environ Monit* **2006**, *8*, 70-88.

28. Lohmann, R.; Jurado, E.; Pilson, M. E. Q.; Dachs, J.: Oceanic deep water formation as a sink of persistent organic pollutants, *Geophys Res Lett* **2006**, *33*, L12607, doi:10.1029/2006GL025953. (*Editor's highlight*)

29. Lohmann, R.; Jurado, E.; Dachs, J.; Lohmann, U.; Jones, K. C. Quantifying the importance of the atmospheric sink for polychlorinated dioxins and furans relative to other global loss processes, *J Geophys Res* **2006**, 111, D21303, doi:10.1029/2005JD006923.

30. Lammel, G.; Ghim, Y-S.; Grados, A.; Gao, H.; Hühnerfuss, H.; Lohmann, R.: Levels of persistent organic pollutants in air in China and over the Yellow Sea. *Atmos Environ* **2007**, 41, 452-464.

31. Xie, Z; Ebinghaus, R.; Lohmann, R.; Heemken, O.; Caba, A.; Puettman, W. Trace determination of the flame retardant tetrabromobisphenol A in the atmosphere by gas chromatography – mass spectrometry. *Anal Chim Acta* **2007**, 584, 333-342.

32. Adams, R.G.; Lohmann, R.; Fernandez, L.A.; MacFarlane, J.K.; Gschwend, P.M. Polyethylene Devices: Passive Samplers for measuring dissolved hydrophobic organic compounds in aquatic environments. *Environ Sci Technol* **2007**, 41, 1317-1323.
(* 1st Runner-up for Environmental Technology Paper of 2007*)

33. Xie, Z.; Ebinghaus, R.; Temme, C.; Lohmann, R.; Caba, A.; Ruck, W. Occurrence and air-sea exchange of phthalates in the Arctic. *Environ Sci Technol* **2007**, 41, 4555-4560.

34. Lohmann, R., Breivik, K., Dachs, J., Muir, D.G. Global fate of POPs - current and future research directions. *Environ Poll* **2007**, 150, 150-165.

35. Lohmann, R., Gioia, R., Eisenreich S.J., Jones, K.C. Assessing the Importance of Ab- and Adsorption to the Gas-Particle Partitioning of PCDD/Fs. *Atmos Environ* **2007**, 41, 7767-7777.

36. Gioia, R.; Nizetto, L.; Lohmann, R.; Dachs, J.; Temme, C.; Jones, K. C. Polychlorinated Biphenyls (PCBs) in air and seawater of the Atlantic Ocean: Sources, trends and processes. *Environ Sci Technol* **2008**, 42, 1416-1422.

37. Nizzetto, L.; Lohmann, R.; Gioia, R.; Jahnke, A.; Temme, C.; Dachs, J.; Herckes, P.; Di Guardo, A.; Jones, K.C. PAHs in air and seawater along a North-South Atlantic transect: trends, processes and possible sources. *Environ Sci Technol* **2008**, 42, 1580-1585.

38. Gioia, R.; Lohmann, R.; Dachs, J.; Jones, K.C.; Temme, C.; Lakaschus, S.; Schulz-Bull, D.; Hand, I. Polychlorinated biphenyls in air and water of the North Atlantic and the Arctic Ocean. *JGR Atmospheres* **2008**, 113, D19302, doi:10.1029/2007JD009750.

39. Morgan, E.; Lohmann, R. Detecting Air-Water and Surface-Deep Water Gradients of PCBs Using Polyethylene Passive Samplers. *Environ Sci Technol* **2008**, 42, 7248-7253.

40. Lohmann, R.; Bollinger, K.; Cantwell, M.; Feichter, J.; Fischer-Bruns, I.; Zabel, M. Fluxes of soot black carbon to south Atlantic sediments. *Global Biogeochem Cycl* **2009**, 23, GB1015, doi:10.1029/2008GB003253.

41. Friedman, C.; Burgess, R.; Perron, M.; Cantwell, M.; Ho, K.; Lohmann, R.: Comparing Polychaete and Polyethylene Uptake to Assess Sediment Resuspension Effects on PCB Bioavailability. *Environ Sci Technol* **2009**, 43, 2865-2890.

42. Lohmann, R.; Gioia, R.; Jones, K.C.; Nizzetto, L.; Temme, C.; Xie, Z.; Schulz-Bull, D.; Morgan, E.; Jantunen, L.: Organochlorine Pesticides and PAHs in the Surface Water and Atmosphere of the North Atlantic and Arctic Ocean. *Environ Sci Technol* **2009**, 43, 5633-5639.

43. Lohmann, R.; Muir, D. Global Aquatic Passive Sampling (AQUA-GAPS): Using Passive Samplers to Monitor POPs in the Waters of the World **(Feature article).** *Environ Sci Technol* **2010**, 44, 860-864.

44. Zhang, L. and Lohmann, R. Cycling of PCBs and HCB in the Surface Ocean-Lower Atmosphere of the Open Pacific. *Environ Sci Technol* **2010,** *44*, 3832–3838.

45. Gioia, R.; Jones, K. C. ; Lohmann, R.; Nizzetto, L.; Dachs, J.: Field-derived Henry's law constants for polychlorinated biphenyls in oceanic waters. *J Geophys Res* **2010**, 115, C05024, doi:10.1029/2008JC005054.

46. Lohmann, R.; Muir, D. Response to Comments on Global Aquatic Passive Sampling (AQUA-GAPS): Using Passive Samplers to Monitor POPs in the Waters of the World. *Environ Sci Technol* **2010**, 44, 4386.

47. Morgan, E. J. and Lohmann, R. Dietary Uptake of PCBs from Historically Contaminated Sediments as the Source of Bioaccumulation to Demersal Fish and Invertebrates in an Urban Estuary. *Environ Sci Technol* **2010**, 44, 5444-5449.

48. Lohmann, R.; Dachs, J. Deposition of Dissolved and Particulate-Bound Chemicals from the Surface Ocean. Chapter 17 in '*Handbook of Estimation Methods for Chemical Mass Transport in the Environment'*, Eds Mackay and Thibodeaux, CRC Press **2010**, 495-512. (ISBN: 9781420047554).

49. Nizzetto, L.; Lohmann, R.; Gioia, R.; Dachs, J.; Jones, K.C. Atlantic Ocean surface waters buffer declining atmospheric concentrations of persistent organic pollutants (POPs). *Environ Sci Technol* **2010**, 44, 6978-6984.

50. Friedman, C.; Lohmann, R.; Burgess, R.M., Perron, M.; Cantwell, M.G. Resuspension of PCB-contaminated field sediment: Release to the water column and determination of site-specific K_{DOC}. *Environ Toxicol Chem* **2011**, 30, 377-384.

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9. Shifra R. Yonis, M.Sc., 2009-2012 (URI-GSO):'Vertical profiles of PAH concentrations in Narragansett Bay using passive samplers', 87 pp.
10. Zoe Ruge, M.Sc, 2011-2013 (URI-GSO): 'Air-Water Exchange and Trends of Persistent Bioaccumulative Toxics (PBTs) across Lake Superior', 173 pp.
11. Kari A. Pohl, Ph.D., 2009-2014 (URI-GSO): 'Black Carbon Concentrations, Sources, and Fluxes in the Tropical Atlantic Ocean,' 203 pp.
12. Erin Markham, M.Sc. 2012-2014 (URI-GSO) 'Emerging Persistent Organic Pollutants (POPs) in the Western South Atlantic and Antarctic Biota', 96 pp.
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PAPERS PRESENTED AT PROFESSIONAL MEETINGS

1. Xianming Zhang[1], Rainer Lohmann[2], Elsie Sunderland[1]. Poly- and Perfluoroalkyl Substances (PFASs) in Seawater and Plankton from the Northwest Atlantic Margin. Dioxin, Vancouver (CA), Aug 2017.

2. Xianming Zhang[1], Rainer Lohmann[2], Elsie Sunderland[1]. Poly- and Perfluoroalkyl Substances (PFASs) in Seawater and Plankton from the Northwest Atlantic Margin. Canadian Trace Organic Workshop, June 2017.

3. Carrie, talk SETAC Europe annual meeting, Brussels (Belguim), May 2017.

4. McDonough, C.A.; Puggioni, G.;Helm, P.A.; Muir, D.; Lohmann, R. Dissolved phase flame retardants in the Great Lakes, poster. SETAC Europe annual meeting, Brussels (Belguim), May 2017.

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11. Jane Kirk, Derek Muir, Amila De Silva, Rainer Lohmann, C. Spencer, A. Gleason, X. Wang and P. Amarualik Sr. Community based seawater monitoring for organic contaminants and mercury in the Canadian Arctic. NA SETAC annual meeting, Orlando (FL), November 2016.

12. McDonough, C.A.; Muir, D.; Puggioni, G.; Lohmann, R. Distribution and Air-Water Exchange of Organic Flame Retardants in the Lower Great Lakes. NA SETAC annual meeting, Orlando (FL), November 2016.

13. McDonough, C.A; Hahn, M.; Lohmann, R. Passive Polyethylene Samplers and in vitro Bioassays to Investigate Biological Effects of Complex Mixtures of Gaseous Hydrophobic Organic Contaminants NA SETAC annual meeting, Orlando (FL), November 2016.

14. Lohmann, R. The transport of POPs across the Oceans. NA SETAC annual meeting, Orlando (FL), November 2016.

15. Markham, E.; Brault, E.; Khairy, M.; Goebel, M.; Dickhut, R.; Lohmann, R. Presence and fluxes of legacy POPs and PBDEs in the Western Antarctic Peninsula. NA SETAC annual meeting, Orlando (FL), November 2016.

16. Lohmann, R.; Khairy, M.; Adelman, D. A passive multisampling method to measure Dioxins/Furans and other contaminant bioavailability in aquatic sediments. NA SETAC annual meeting, Orlando (FL), November 2016.

17. Marcella Thompson, Barry Volson, Amanda Curtis, Rainer Lohmann,Celia Chen Are These Fish Safe to Eat? The Namaus (All Things Fish) Project. NIEHS SRP meeting 2016

18. Lohmann, R.; Khairy, M.; Adelman, D. A passive multisampling method to measure Dioxins/Furans and other contaminant bioavailability in aquatic sediments. Poster presentation at

SERDP/ESTCP Workshop on R&D Needs for Long-Term Management of Contaminated sediments, Seattle (WA) August 2016.

19. McDonough, C.A.; Khairy, M.; Lohmann, R. Using Passive Polyethylene Samplers to Investigate Spatial Distributions and Diffusive Air-Water Exchange of Persistent Bioaccumulative Contaminants in the Lower Great Lakes. Poster presentation at GRC Environmental Sciences: Water, Holderness (NH) June 2016.

20. Lohmann, R.; Khairy, M.; Adelman, D. A passive multisampling method to measure Dioxins/Furans and other contaminant bioavailability in aquatic sediments. Poster presentation at GRC Environmental Sciences: Water, Holderness (NH) June 2016.

21. Sun, Caoxin, THOMAS SOLTWEDEL, EDUARD BAUERFEIND, DAVE A. ADELMAN, RAINER LOHMANN. Depth Profiles of Persistent Organic Pollutants in the North and Tropical Atlantic Ocean. SETAC Europe annual meeting, Nantes (France), May 2016.

22. Jonkers, M.. et al. Advancing the use of passive sampling in risk assessment and management of contaminated sediments: Results of an international passive sampling ring test. SETAC Europe annual meeting, Nantes (France), May 2016.

23. Liu, Y.; Wang, S.; McDonough, C.; Khairy, M.; Muir, D.C.G.; Helm, P.; Lohmann, R. Estimation of Uncertainty in Air-Water Exchange Flux and Gross Volatilization Loss of PCBs: a Case Study based on Passive Sampling in the Lower Great Lakes. SETAC Europe annual meeting, Nantes (France), May 2016.

24. D. Muir, A. Morris, A. De Silva, C. Spencer, J. Kirk, A. Gleason, X. Wang, R. Lohmann and P. Amarualik Sr. Community based seawater monitoring for organic contaminants and mercury in the Canadian Arctic, National Contaminants Program Annual Meeting, Vancouver (BC, Canada) December 2015.

25. Khairy, M.; Barrett, K.; Weinstein, M.; Lohmann, R. Air-water exchange, spatial and temporal trends of PBDEs along an urban River using passive samplers, Salt Lake City (UT), November 2015.

26. Khairy, M.; Barrett, K.; Lohmann, R. Source apportionment of PCDD/Fs in the Passaic River. SETAC North America annual meeting, Salt Lake City (UT), November 2015.

27. McDonough, C.; Muir, D.; Helm, P,; Lohmann, R. Measuring Gaseous Organic Flame Retardants in Great Lakes Air Using Passive Polyethylene Samplers. SETAC North America annual meeting, Salt Lake City (UT), November 2015.

28. McDonough, C.; Muir, D.; Helm, P,; Lohmann, R. Polyethylene uptake of gaseous and dissolved hydrophobic organic contaminants. SETAC North America annual meeting, Salt Lake City (UT), November 2015.

29. McDonough, C.; Lohmann, R. Detection of truly dissolved and gaseous flame retardants in the lower Great Lakes region using polyethylene passive samplers. SciX Conference Providence (RI), September 2015.

30. Xianming Zhang[1], Andrea Weber[1], Cindy Hu[1], Wenlu Zhao[2], Minggang Cai[2], Pete August[2], Rainer Lohmann[2], Chad Vecitis[1], Elsie Sunderland[1]. Comparison of online and offline solid phase extraction methods for analysis of perfluoroalkyl acids in water using liquid chromatography tandem mass spectrometry. SciX Conference Providence (RI), September 2015.

31. Meire RO, Khairy M, Targino AC, Galvão PMA, Torres JPM, Malm O, Lohmann R. Legacy and recently banned Organochlorine Pesticides over shallow freshwaters in tropical and subtropical mountain regions in Brazil. Dioxin meeting Sao Paulo (Brazil), August 2015.

32. McDonough, C.; Lohmann, R. Polyethylene uptake of gaseous hydrophobic organic contaminants (HOCs). 250th ACS National meeting Boston (MA), August 2015.

33. Sun, C.; Lohmann, R. Estimating sampling rate of polyethylene passive samplers using samplers of different thickness. 250th ACS National meeting Boston (MA), August 2015.

34. Zhao, W.; Cai, M: Adelman, D.; Lohmann, R. Spatial distribution and source identification of dissolved PCBs, OCPs, and PAHs in the surface water of the Narragansett Bay Watershed using passive polyethylene samplers. 250th ACS National meeting Boston (MA), August 2015.

35. Cai, M: Zhao, W.; Adelman, D.; Lohmann, R. HCBz and PAHs trend in the atmosphere and surface seawater along a cruise pathway from the East China Sea to the Arctic Ocean. 250th ACS National meeting Boston (MA), August 2015.

36. Lohmann, R.; Mohammed Khairy, Derek Muir, Camilla Teixeira. Spatial distribution, air-water exchange and source apportionment of polychlorinated biphenyls in the lower Great Lakes Basin. 250th ACS National meeting Boston (MA), August 2015.

37. McDonough, C.; Lohmann, R. Spatial distribution and diffusive air-water exchange of dissolved flame retardants and synthetic musks in the lower Great Lakes. 250th ACS National meeting Boston (MA), August 2015.

38. Helen M. Amos, Yanxu Zhang, Gael Forget, Carey Friedman, Rainer Lohmann, Caoxin Sun, Steph Dutkiewicz, Colin Pike-Thackray, Xianming Zhang, Noelle Selin, Elsie M. Sunderland. Cycling of polychlorinated biphenyls (PCBs) in the remote marine environment. Goldschmidt August 2015 Pag (Czech Republic).

39. Burgess RM, Lohmann R, Schubauer-Berigan JP, Reitsma P, Perron MM, Lefkovitz L, Cantwell MG. 2015. Application of passive sampling for measuring dissolved concentrations of organic contaminants in the water column at three U.S. EPA marine Superfund sites. National Environmental Monitoring Conference, Chicago, IL, USA August 2015.

40. Yeung, L; Sun, C.; Lohmann, R.; Mabury, S. Vertical Profiles of Perfluoroalkyl Acids (PFAAs) in Seawater Samples from the Arctic Region, Fluoros 2015 - An International Symposium on Fluorinated Organics in the Environment, Golden (CO), July 2015.

41. Markham, E.; Karaskova, P.; Becanova, J., Klanova, J.; Lohmann, R. Presence of Per- and Polyfluoroalkyl Substances (PFASs) in Surface and Deep Waters of the Western South Atlantic Ocean, and Implications for Global Budgets. Fluoros 2015 - An International Symposium on Fluorinated Organics in the Environment, Golden (CO), July 2015.

42. Lohmann, R.; Khairy, M.; Weinstein, M. Dynamics of emerging and legacy contaminants in a tidal urban river. SETAC Europe annual meeting, Barcelona (Spain), May 2015.

43. Khairy, M.; Barrett, K.; Lohmann, R. Air-water exchange, spatial and temporal trends of PBDEs along an urban River using passive samplers. SETAC Europe annual meeting, Barcelona (Spain), May 2015.

44. Lohmann, R. Ruge, Z.; Lui, Y.; Helm, P.; Khairy, M.; Muir, D. Air-water exchange, spatial and temporal trends of POPs in air and water of the Great Lakes using polyethlyene samplers. SETAC Europe annual meeting, Barcelona (Spain), May 2015.

45. Burgess RM, Lohmann R, Schubauer-Berigan JP, Reitsma P, Perron MM, Lefkovitz L, Cantwell MG. 2015. Application of passive sampling for measuring dissolved concentrations of organic contaminants in the water column at three U.S. EPA marine Superfund sites. Platform presentation annual meeting of Society of Environmental Toxicology and Chemistry – Europe, Barcelona, Catalonia, Spain, May 2015.

46. Lohmann, R. Khairy, M; Adelman, D. Development of an In Situ Passive Sampler for the Detection and Remediation of Explosive Compounds. SERDP and ESTCP Sediment Project Meeting, Norfolk (VA) Mar 2015.

47. McDonough, C.; Lohmann, R. Dissolved and gaseous emerging contaminants in the lower Great Lakes. SETAC North America annual meeting, Vancouver (BC, Canada), November 2014.

48. Lohmann, R.; Khairy, M.; McDonough, C. Use of Polyethylene passive samplers to detect trace levels of dissolved HOCs in air, water and sediments. SETAC North America annual meeting, Vancouver (BC, Canada), November 2014.

49. Lohmann, R.; Liu, Y. Temporal Trends of Persistent Organic Chemicals in the Environment and Biota SETAC. SETAC North America annual meeting, Vancouver (BC, Canada), November 2014.

50. Markham, E.; Brault, E.; Khairy, M.; Goebel, M.; Dickhut, R.; Lohmann, R. Time trends of polybrominated diphenyl ethers (PBDEs) in Antarctic Fur Seal milk, and their trophic transfer. SETAC North America annual meeting, Vancouver (BC, Canada), November 2014.

51. Markham, E.; Lohmann, R. Perfluorinated Compounds (PFCs) in the Western South Atlantic SETAC North America annual meeting, Vancouver (BC, Canada), November 2014.

52. Khairy, M.; Weinstein, M.; Barrett, K.; Lohmann, R. *Trophodynamic Behavior and Environmental Cycling of Persistent Bioaccumulative Toxic Compounds in the Lower Passaic River*, Passaic River Symposium, Montclair (NJ) October 2014.

53. McDonough, C. A.; Lohmann, R. Dissolved and Gaseous Flame Retardants in Lake Erie and Lake Ontario. *Meeting of the American Chemical Society*, San Francisco (CA), August 2014.

54. Ruge, Z; Lohmann, R.; Khairy, M.; Adelman, D.; Helm, P.; Muir, D. Spatial trends and sources of gaseous and freely dissolved persistent organic pollutants in the Great Lakes basin and modeling the air-water exchange using low density polyethylene passive samplers. American Chemical Society National Meeting San Francisco (CA), August 2014. Platform

55. Lohmann, R. The transport of PBTs across the Oceans. American Chemical Society National Meeting San Francisco (CA), August 2014. Platform

56. McDonough, C.A.; Khairy, M.; Lohmann, R. Dissolved and Gaseous Flame Retardants in the Lower Great Lakes. Poster presentation at GRC Oceans and Human Health, Biddeford (ME) June 2014.

57. Khairy, M.; Weinstein, M.; Noonan, G.; Lohmann, R. Bioaccumulation and biomagnifications of POPs in an aquatic food-chain. Poster presentation at GRC Oceans and Human Health, Biddeford (ME) June 2014.

58. Vansco, M.; McDonough, C.A.; Lohmann, R. Detection of Polycyclic Aromatic Hydrocarbons and Polycyclic Musks in Barnegat Bay, New Jersey. RI Regional meeting of the ACS, Providence (RI) April 2014.

59. Marco Vighi, Serenella Sala, Sara Villa, Lohmann, Rainer Defining planetary boundaries for chemicals: a proposal for Persistent Organic Contaminants (POPs). SETAC Europe annual Meeting. Basel (CH), May 2014.

60. Martynowych, D.; McDonough, C.; Lohmann R. An evaluation of polycyclic aromatic hydrocarbon uptake into polyethylene samplers. AGU Fall meeting, San Francisco (CA), December 2013.

61. Markham, Erin; Jitka Bečanova, Pavlina Karaskova, Luca Nizetto; Rainer Lohmann, Persistent Organic Pollutants in the Western South Atlantic Ocean. SETAC North America annual Meeting. Nashville (TN), November 2013.

62. McDonough, C.; Khairy, M.; Lohmann, R. Spatial Trends of Dissolved PBTs and their Relation to Urban Source Regions: A Passive Sampling Study in the Lower Great Lakes. SETAC North America annual Meeting. Nashville (TN), November 2013.

63. Zoe Ruge, Mohammed Khairy, Dave Adelman, Derek Muir, Paul Helm, Rainer Lohmann, Air-water exchange of legacy PBTs in the Great Lakes. SETAC North America annual Meeting. Nashville (TN), November 2013.

64. Lohmann, R., Jurado, E.; Dijkstra, H.A.; Dachs, J. Vertical eddy diffusion as a key mechanism for removing perfluorooctanoic acid (PFOA) from the global oceans. SETAC North America annual Meeting. Nashville (TN), November 2013.

65. Pohl, K.; Lohmann, R.; Cantwell, M.; Zabel, M. Black Carbon Sources, Concentrations, And Fluxes To Subtropical Atlantic Sediments. GSA fall meeting, Denver (CO), October 2013.

66. C. Tixier, C. Berho, S. Lardy – Fontan, B. Lepot, H. Budzinski, I. Allan, N. Chhim, P.Dymond, C. Gonzalez, A Gravell, R. Gunold, J. Llorca, R. Lohmann, C. Lorgeoux, A. Marrucci, M. Pavonic, E. Peinerud, H. Rumney, F. Smedes, E. Uher, B. Vrana, C. Miège* AQUAREF intercomparison passive sampling exercise: Monitoring of Polycyclic Aromatic Hydrocarbons (PAHs). Internat Passive Sampling workshop Bordeaux (FR), June 2013.

67. McDonough, C.A. and Lohmann, R. Detection of emerging persistent bioaccumulative toxics in the Great Lakes using polyethylene passive samplers. IAGLR International Association for Great Lakes Research Annual Meeting Lafayette (IN) June 2013.

68. Ruge, Z., Lohmann, R., Adelman, D., Helm, P. And Muir, D. Using passive samplers to detect PBDEs in Lake Superior. International Association for Great Lakes Research Annual Meeting Lafayette (IN) June 2013.

69. Lohmann, R. *POPs in the Oceans – spatial, temporal trends and air-water exchange,* SETAC Europe annual Meeting. Glasgow (UK), May 2013.

70. Lohmann, R. *Using passive samplers to assess sources, transport and fate of legacy and emerging organic pollutants in a U.S. North East coast estuary,* SETAC Europe annual Meeting. Glasgow (UK), May 2013.

71. Lohmann, R. Luey, P.; Khairy, M.; Haynes, M. *Polyethlyene as passive samplers of dissolved organic pollutants in air and water,* SETAC Europe annual Meeting. Glasgow (UK), May 2013.

72. Ruge, R.; Lohmann, R.; Helm, P.; Muir, D. Enhancing polycyclic aromatic hydrocarbon (PAH) monitoring of Lake Superior using polyethylene passive samplers, SETAC Europe annual Meeting. Glasgow (UK), May 2013.

73. Ruge, R.; Lohmann, R.; Helm, P.; Muir, D. Air-water exchange and distribution of POPs in Lake Superior, poster corner, SETAC Europe annual Meeting. Glasgow (UK), May 2013.

74. Lohmann, R. The Pollution of the Oceans and Great Lakes by Persistent Organic Pollutants, AGU Fall Meeting, San Francisco (CA), Dec 2012

75. Pohl, K.; Lohmann, R.; Cantwell, M.; Herckes, P. Black carbon concentrations across the tropical Atlantic boundary layer using three methods. Fall Meeting, San Francisco (CA), Dec 2012

76. Burgess RM, R Lohmann, P Luey, M Charpentier, C White. 2012. Evaluation of polyethylene passive samplers to estimate deep water PCB concentrations at the Palos Verdes Shelf Superfund site. Platform presentation at the annual meeting of the Society of Environmental Toxicology and Chemistry - North America. Long Beach, CA, USA.

77. Sacks, V.; Lohmann, R. Community engagement in sampling: benefits and tradeoffs using passive samplers deployed by volunteers to survey organic pollutants across an estuary. USA North American SETAC, Long Beach (CA) November 2012.

78. M. S. Eldin, M. Weinstein, K. Barrett, D. Adelman, R. Lohmann Using Polyethylene Passive Samplers to Investigate the Transport and Bioavailability of Persistent Organic Pollutants in the Lower Passaic River. Passaic River Symposium V, Montclair (NJ), October 2012.

79. L. Zhang, R. Lohmann, R. Dickhut, D. DeMaster , K. Pohl, Organochlorine Pollutants in the Sediments and Benthos at Western Antarctic Peninsula, SCAR (Scientific Committee on Antarctic Research) Open Science Conference, Portland (OR), July 2012

80. Zhang, L., Lohmann, R., Bidleman, T.F., Thibodeaux, L., Perry, M.J. Fate of Organochlorine Pollutants in the North Atlantic Bloom**,** Gordon Research Conference Environmental Sciences: Water Biddeford (ME) June 2012.

81. Khairy, M., Lohmann, R., Adelman, D. And Muir, D. Trends of PBTs in air and water across Lakes Erie and Ontario. Gordon Research Conference Environmental Sciences: Water Biddeford (ME) June 2012.

82. Zhang, L., Lohmann, R., Bidleman, T.F., Thibodeaux, L., Perry, M.J. Fate of Organochlorine Pollutants in the North Atlantic Bloom**,** NAC SETAC Kingston (RI) June 2012

83. Ruge, Z., Lohmann, R. Spatial, temporal trends and air-water exchange of PAHs across Lake Superior. Gordon Research Conference Oceans and Human Health Biddeford (ME) June 2012.

84. T. Gocht, R. Lohmann, M. Wahl. Spatially resolved distribution of chemicals on equilibrium passive samplers for the elucidation of modes of sorption. 22nd annual SETAC Europe Meeting. Berlin, Germany. May 2012.

85. M.L. Diamond, M. Scheringer, S. Molander, R. Lohmann A planetary boundary for chemical pollution. EU-SETAC. 22nd annual SETAC Europe Meeting. Berlin, Germany. May 2012.

86. Ruge, Z., Lohmann, R., Adelman, D., Helm, P. And Muir, D. Spatial, temporal trends and air-water exchange of PAHs across Lake Superior. International Association for Great Lakes Research Annual Meeting Cornwall (ON) May 2012.

87. Khairy, M., Lohmann, R., Adelman, D. And Muir, D. Trends of PBTs in air and water across Lakes Erie and Ontario. International Association for Great Lakes Research Annual Meeting Cornwall (ON) May 2012.

88. Pohl, K., Lohmann, R. A Comparison Of Fluvial And Aeolian Transported Black Carbon To Deep Marine Sediments In The Equatorial Atlantic. Ocean Sciences Meeting Salt Lake City (UT) February 2012.

89. Lohmann, R.; Pohl, K.; Sullivan, J.; Cantwell, M.; Feichter, H.; Kloster, S. Black Carbon In The Surface Mixed Layer Across The North Atlantic Ocean, Ocean Sciences Meeting Salt Lake City (UT) February 2012.

90. Thibodeaux, L.J.; Lohmann, R. A New Turbulent Diffusion Box Model For Studying the Chemodynamic Fate of Substances in Marine Waters: A PFOA Transport Application, Ocean Sciences Meeting Salt Lake City (UT) February 2012.

91. Lambert, M.; Friedman, C.; Luey, P.; Lohmann, R. Use of Passive Sampling to Measure the Sorption of PCDDs, PCDFs, and PAHs to Black Carbon in Passaic River and Newark Bay Sediments North American SETAC, Boston (MA) November 2011.

92. Friedman, C.; Lohmann, R. Contrasting PCDD/F and PBDE Activities in Biota, Sediment, and the Water Column of Newark Bay, New Jersey, USA North American SETAC, Boston (MA) November 2011.

93. Zhang, L.; Dickhut, R.; DeMaster, D.; Lohmann R. Partitioning of Persistent Organic Pollutants Between Sediments and Benthic Deposit Feeders in Western Antarctic Peninsula, North American SETAC, Boston (MA) November 2011.

94. Zhang, L.; Lohmann R. Persistent Organic Pollutants in the North Atlantic Bloom Experiment, North American SETAC, Boston (MA) November 2011.

95. Lohmann, R.; Muir, D. Using Passive Samplers To Detect Emerging PBTs In The Great Lakes. Poster presentation. International Association for Great Lakes Research, Duluth (MN) May 2011.

96. Lohmann, R., Jurado, E.; Dijkstra, H.A.; Dachs, J. Vertical eddy diffusion as a key mechanism for removing perfluorooctanoic acid (PFOA) from the global oceans. Platform Presentation. 21at annual SETAC Europe Meeting. Milan, Italy. May 2011.

97. Lohmann, R., Meredith Dapsis, Eric Morgan, Victoria Dekany and Pamela Luey Determining air-water exchange, spatial and temporal trends of PAHs in an urban estuary using passive polyethylene samplers. Platform Presentation. 21at annual SETAC Europe Meeting. Milan, Italy. May 2011.

98. Lohmann, R,; Muir, D. Global Aquatic Passive Sampling (AQUA-GAPS): Using passive samplers to monitor POPs in the waters of the world. Poster Presentation. 21st annual SETAC Europe Meeting. Milan, Italy. May 2011.

99. Sacks, V.; Lohmann, R. Distribution and fate of Triclosan, alkylphenols, and PBDEs in an urban estuary determined using polyethylene passive samplers. Platform Presentation. 21at annual SETAC Europe Meeting. Milan, Italy. May 2011.

100. Burgess RM, R Lohmann P Luey, M Charpentier, M Noble, KJ Rosenberger, CR Sherwood, C White. 2011. Use of polyethylene passive samplers to estimate water column PCB concentrations at the Palos Verdes Superfund prior to remediation. Platform presentation at the Battelle Sixth International Conference on Remediation of Contaminated Sediments. New Orleans, LA, USA.

101. Sacks, V.; Lohmann, R. Distribution and fate of Triclosan, alkylphenols, and PBDEs in an urban estuary determined using polyethylene passive samplers. Platform presentation. North American SETAC National meeting, Portland (OR) November 2010.

102. Zhang, L.; Lohmann, R.; Bidleman, T.; Jantunen, L.; Wong, F. Enantiomeric signatures of organochlorine pesticides in the remote Pacific. Poster Presentation. North American SETAC National meeting, Portland (OR) November 2010.

103. Zhang, L.; Lohmann, R.; DeMaster, D. PCBs and Organochlorine Pesticides in the Antarctic Sediments and Benthic Macrofauna. Poster Presentation. North American SETAC National meeting, Portland (OR) November 2010.

104. Pohl, K.; Sullivan, J.; Bollinger, K.; Cantwell, M.; Feichter, J.; Fischer-Bruns, I.; Zabel, M.; and Lohmann, R. Fluxes of soot black carbon to South Atlantic sediments. American Chemical Society National Meeting Boston (MA), August 2010.

105. Lambert, M.; Friedman, C.; Sullivan, J.; Lohmann, R. The Role of Black Carbon on the Sorption of Polychlorinated Dioxins. Poster presentation, American Chemical Society National Meeting Boston (MA), August 2010.

106. Sullivan, J.; Lohmann, R.; Bollinger, K.; King, J.; Cantwell, M.; Caprio, T. Black carbon and sorption of PAHs in natural fire-impacted sediments from Oriole Lake (CA). Poster presentation, American Chemical Society National Meeting Boston (MA), August 2010.

107. Sacks, Victoria P., Lohmann, R. Occurrence and transport of PBDE, triclosan, and alkylphenols in a highly urbanized estuary determined using polyethylene passive samplers. Poster Presentation. Gordon Research Conference: Environmental Sciences: Water. June 2010.

108. Zhang, L.; Lohmann, R. Organochlorine Pesticides in Surface Water and Lower Atmosphere of the Remote Pacific. Poster Presentation. Gordon Research Conference: Environmental Sciences: Water. June 2010.

109. Friedman, C; Lohmann, R. Fate and Transport of PCDD/Fss in Newark Bay, New Jersey, USA. Poster Presentation. Gordon Research Conference: Environmental Sciences: Water. June 2010.

110. Yonis, S.; Lohmann, R. Comparing Passive Sampling Matrices for use in Concentrating Non-Polar Pollutants. Poster Presentation. Gordon Research Conference: Environmental Sciences: Water. June 2010.

111. Sacks, Victoria P., Lohmann, R. Occurrence and transport of PBDE, triclosan, and alkylphenols in a highly urbanized estuary determined using PE passive samplers. Poster Presentation. SETAC North Atlantic Regional Chapter 16th Annual Meeting. Narragansett, RI. June 2010

112. Sacks, Victoria P., Lohmann, R. Occurrence and transport of PBDE, triclosan, and alkylphenols in a highly urbanized estuary determined using polyethylene passive samplers. Poster Presentation. 20th annual SETAC Europe Meeting. Seville, Spain. May 2010.

113. Sacks, Victoria P., Lohmann, R. Leaching of technical nonylphenols from polyethylene into the oceans. Platform Presentation. 20th annual SETAC Europe Meeting. Seville, Spain. May 2010.

114. Lohmann, R.; Brandeis, A. Detecting Vertical Gradients of Polycyclic Aromatic Hydrocarbons in Narragansett Bay Using Passive Samplers. Poster Presentation. 20th annual SETAC Europe Meeting. Seville, Spain. May 2010.

115. Lohmann, R,; Muir, D. Global Aquatic Passive Sampling (AQUA-GAPS): Using passive samplers to monitor POPs in the waters of the world. Platform Presentation. 20th annual SETAC Europe Meeting. Seville, Spain. May 2010.

116. Friedman, C; Lohmann, R. Fate and Transport of PCDD/Fss in Newark Bay, New Jersey, USA. Poster Presentation. 20th annual SETAC Europe Meeting. Seville, Spain. May 2010.

117. Friedman, C; Burgess, R.M.; Perron, M.M.; Cantwell, M.; Ho. K.T.; Lohmann, R. Polyethylene Passive Sampling To Estimate Bioavailability: A Laboratory And Field Comparison. Poster Presentation. 20th annual SETAC Europe Meeting. Seville, Spain. May 2010.

118. Burgess, R.M.; Lohmann, R.; Luey, P.M.; Friedman, C.L. Schubauer-Berigan, J.P. Comparing the accumulation of PCBs by passive samplers and mussels from the water column at a contaminated sediment site. Poster Presentation. 20th annual SETAC Europe Meeting. Seville, Spain. May 2010

119. Lohmann, R., Morgan, E., Bollinger, K., Brandeis, A., Adelman, D. Passive sampling of atmospheric POPs using polyethylene samplers, ACS National meeting, San Francisco (CA), March 2010.

120. Sacks, V.P., Brandeis, A. Lohmann, R.: Detecting concentrations and gradients of EDCs in the water column using passive polyethylene samplers, ACS National meeting, San Francisco (CA), March 2010.

121. Lohmann, R., Gioia, R., Jones , K.C., Nizzetto L., Temme, C. Xie, Z., Schulz-Bull, D., Hand, I., Morgan, E.J., Jantunen, L.: POPs in the atmosphere and surface water of the North Atlantic & Arctic Ocean, ACS National meeting, San Francisco (CA), March 2010.

122. Brandeis, A. E. and Lohmann, R.: Detecting Vertical Gradients of Polycyclic Aromatic Hydrocarbons in Narragansett Bay Using Passive Samplers, Ocean Sciences 2010, Portland (OR), February 2010.

123. Lohmann, R.: Use of passive samplers to determine water quality and bioavailability of organic contaminants, Environment & Water Resources Institute (EWRI) meeting of the American Association of Civil Engineers in Chennai, India, Jan. 2010

124. Lohmann, R.; Friedman, C.; Burgess, R.M. Predicting the bioaccumulation of sedimentary hydrophobic organic contaminant to benthic invertebrates using EqP and passive samplers. North American SETAC National meeting, New Orleans (LA) November 2009.

125. Lohmann, R.; Friedman, C.; Lambert, M. The Availability of Sedimentary Dioxins in the upper Newark Bay. North American SETAC National meeting, New Orleans (LA) November 2009.

126. Friedman, C; Lohmann, R. Using Passive Samplers to Examine the Fate and Transport of Dioxins and Furans in Newark Bay. North American SETAC National meeting, New Orleans (LA) November 2009.

127. Friedman, C; Lohmann, R. Resuspension of Contaminated Field Sediments and Effect on PCB Partitioning. North American SETAC National meeting, New Orleans (LA) November 2009.

128. Lambert, M.; Friedman, C.; Lohmann, R. The Role of Black Carbon on the Sorption of Polychlorinated Dibenzo-*p*-dioxins and Polychlorinated Dibenzofurans at the Diamond Alkali Superfund site, Newark Bay, NJ. North American SETAC National meeting, New Orleans (LA) November 2009.

129. Zhang, L.; Lohmann, R. Atmospheric Chemistry and Air-Water Exchange of PCBs and HCB in the Remote Pacific. North American SETAC National meeting, New Orleans (LA) November 2009.

130. Sacks, V.P.; Lohmann, R. Development of polyethylene passive samplers to measure polar contaminants. North American SETAC National meeting, New Orleans (LA) November 2009.

131. Hansina Hill, Rainer Lohmann, and Pierre Herckes: Characterization of Carbonaceous Aerosol over the Atlantic Ocean. American Association for Aerosol Research, Minneapolis (MN) October 2009.

132. Luey, P.; Lohmann, R. Verification of Polyethylene and Solid Phase Micro-extraction Passive Sampling Devices in Hyper-saline, Arctic conditions. EU-SETAC, Gothenborg, May 2009.

133. Luey, P.; Burgess, R.B.; Lohmann, R. Uptake of Polychlorinated Biphenyls utilizing Polyethylene Passive Samplers – Effects of Temperature, Thickness and Duration. EU-SETAC, Gothenborg, May 2009.

134. Lohmann, R.; Gioia, R.; Jones, K.C.; Nizzetto, L.; Temme, C.; Xie, Z.; Morgan, E.; Schulz-Bull, D.; Hand, I.; Jantunen, L. Organochlorine Pesticides and PAHs in the North Atlantic and Arctic Ocean: Atmospheric Long-range transport versus re-cycling. EU-SETAC, Gothenborg, May 2009.

135. Lohmann, R.; Dapsis, M.; Morgan, E. Detecting Sources and Trends of PAHs in an Urban Estuary Using Passive Samplers. EU-SETAC, Gothenborg, May 2009.

136. Sacks, V.P.; Lohmann, R. Using passive polyethylene samplers to detect emerging contaminants. EU-SETAC, Gothenborg, May 2009.

137. Nizzetto, L.; Lohmann, R; Gioia, R.; Jones, K.C. Evidence of a global scale decrease in the background air concentration of dioxins and furans. EU-SETAC, Gothenborg, May 2009.

138. Friedman, C.; Lohmann, R. Using passive samplers to examine the fate and transport of dioxins and furans in Newark Bay, New Jersey. Poster at NAC SETAC 15th annual meeting at the University of New Hampshire, Durham, NH, June 10-12 2009.

139. Dekany, V.; Lohmann, R. A Comparison of Silicone-coated Paper Samplers and Polyethylene in Narragansett Bay. ACS Spring meeting, Salt Lake City (UT), March 2009.

140. Burgess, R.M.; Zhang, Y,; McKee, M. P.; Lohmann, R.; Luey, P.J.; Friedman, C.L.; Schubauer-Berigan, J.P.; Lefkovitz, L. Evaluating PCB Bioavailability using Passive Samplers and Mussels at a Contaminated Sediment Site. Battelle Conference on remediation of contaminated sediments, Jacksonville (FL) February 2009.

141. Sullivan, J.; Lohmann, R.; Bollinger, K.; King, J.; Cantwell, M.; Caprio, T. Black carbon and sorption of PAHs in natural fire-impacted sediments from Oriole Lake (CA). AGU Fall meeting, San Francisco, December 2008.

142. Dekany, V.; Lohmann, R. A Comparison of Silicone-coated Paper Samplers and Polyethylene in Narragansett Bay. AGU Fall meeting, San Francisco, December 2008.

143. Lohmann, R.; Zhang, L.; Nizzetto, L.; Gioia, R.; Jones, K.C.; Dachs, J.; Temme, C. Global transport and fate of POPs – an Oceanic perspective. North American SETAC National meeting, Tampa Bay (FL) November 2008.

144. Lohmann, R.; Morgan, E. Detecting Air-Water and Surface-Deep Water Gradients of PCBs Using Polyethylene Passive Samplers. North American SETAC National meeting, Tampa Bay (FL) November 2008.

145. Burgess, R.M.; Zhang, Y,; McKee, M. P.; Lohmann, R.; Luey, P.J.; Friedman, C.L.; Schubauer-Berigan, J.P.; Lefkovitz, L. Comparison of Passive Sampling Devices for Measuring Dissolved PCBs in the Water Column of a Marine Superfund Site. North American SETAC National meeting, Tampa Bay (FL) November 2008.

146. Lohmann, R.; Bollinger, K.; King, J.; Cantwell, M.; Caprio, T. Black carbon and sorption of PAHs in natural fire-impacted sediments form Oriole Lake (CA). Goldschmidt Conference, Vancouver (Canada), July 2008.

147. Luey, P; Burgess, R.B., Lohmann, R. Uptake of Polychlorinated Biphenyls Utilizing Polyethylene Passive Samplers - Effects of Temperature, Thickness and Duration, Gordon Research Conference – Environmental Sciences: Water, Holderness (NH), June 2008.

148. Zhang, L.; Lohmann, R. Atmospheric Chemistry and Air-Water Exchange of Chlorinated Organic Pollutants in the Remote South Pacific, Gordon Research Conference – Environmental Sciences: Water, Holderness (NH), June 2008.

149. Morgan, E.; Lohmann, R. Detecting Air-Water and Surface-Deep Water Gradients of PCBs Using Polyethylene Samplers, Gordon Research Conference – Environmental Sciences: Water, Holderness (NH), June 2008.

150. Friedman, C.L.; Burgess, R.M.; Perron, M.M.; Ho, K.T.; Cantwell, M.G.; Ryba, S.A.; McKinney, R.A.; Lohmann, R. Comparing Polychaete Bioaccumulation and Passive Sampler Uptake to Assess the Effects of Sediment Resuspension on Contaminant Bioavailability Gordon Research Confernce – Environmental Sciences: Water, Holderness (NH), June 2008.

151. Lammel, G.; Sehili, A.M.; Bond, T.C.; Lohmann, R. Gas-particle Partitioning of Polycyclic Aromatic Hydrocarbons in a Global Modelling Study, Joint International Conference on Intercontinental Transport of Atmospheric Mercury and Persistent Organic Pollutants, Organized by the UNEP Global Partnership of Atmospheric Mercury Transport and Fate Research, Rome (Italy), April 2008.

152. Lohmann, R.; Jones, K.C.; Eisenreich, S.J.; Lammel, G. Assessing the importance of ab- and adsorption to the gas-particle partitioning of different POPs, Goldschmidt conference, Koeln (Germany), August 2007.

153. Morgan, E; Lohmann, R. (2007). Determining the Sources of Polychlorinated Biphenyls to Demersal Fish in Narragansett Bay, R.I., USA. ICES Annual Science Conference, Helsinki (Finland), September 2007.

154. Herckes, P.; Cox, J.; Knight, K.; Upadhyay, N.; Prapaipong, P.; Lohmann, R.; Nizzetto, L. Characterization Of Particulate Matter Along A North –South Transect Of The Atlantic Ocean, American Association of Aerosol Research, September 2007

155. Burgess, R.M.; Friedman, C.L.; Sturgeon, N.B.; Perron, M.M.; Cantwell, M.G.; Ryba, S.A. Ho, K.T.; Rego, S.A.; Lohmann, R. Comparison of Polyethylene and Organism Uptake of Polychlorinated Biphenyls (PCBs) in a Standard Laboratory Bioaccumulation Study with Superfund Site Sediments, North Atlantic Chapter SETAC meeting, June 2007.

156. Lohmann, R. Process-based studies and parameters POPs in oceans: measurement, understanding, cycling. Barcelona, June 2007.

157. Lohmann, R.; Morgan, E. Detecting fluxes of PAHs in an estuary using passive samplers, EU-SETAC, Porto, May 2007.

158. Nizzetto, L.; Lohmann, R. ; Gioia, R.; Jahnke, A.; Temme, C.; Dachs, J.; Di Guardo, A.; Jones, K. C. On the occurrence of dioxin along a N-S Atlantic transect, EU-SETAC, Porto, May 2007.

159. Lohmann, R.; Morgan, E. Bioaccumulation of PCBs by fish and passive samplers, EU-SETAC, Porto, May 2007.

160. Lohmann, R., Global Fate of POPs, AquaTerra, Subproject Meeting BIOGEOCHEM, University of Tuebingen, March 2007.

161. Morgan, E.; Lohmann, R. Passive Sampling of Persistent Organic Pollutants in an Urbanized Estuary: Contributions from Different Reservoirs. Poster Presented at 7th Passive Sampling Workshop and Symposium at USGS in Reston, VA, April 2007

162. Adams, R.G.; Lohmann, R.; Fernandez, L.A.; MacFarlane, J.K.; Gschwend, P.M. Using polyethylene devices for passive in situ measurements of dissolved hydrophobic organic compounds in aquatic environments. Southern California SETAC meeting, April, 2007.

163. Lohmann, R.; Burgess, R.M.; Cantwell, M.G.; Ryba, S.A.; Gschwend, P.M. Temporal gradients in the sediment-water exchange of persistent organic pollutants. Battelle – Remediation of Contaminated Sediments, Savannah (GA), January 2007.

164. Herckes, P.; Cox, J. S.; Lohmann, R.; Nizetto, L. CharacterizationOf Carbonaceous Particles Along A North-South Transect Of The Atlantic Ocean, AGU National meeting, San Francisco, December 2006.

165. Lohmann, R.; Burgess, R.M.; Cantwell, M.G.; Ryba, S.A.; Gschwend, P.M. Temporal gradients in the sediment-water exchange of persistent organic pollutants. Partners in Environmental Technology Technical Symposium & Workshop, Washington (D.C.), November 2006.

166. Lohmann, R.; Jurado, E.; Dachs, J.; Lohmann, U.; Jones, K. C. Quantifying The Importance Of The Atmospheric Sink For PCDD/Fs Relative To Other Global Loss Processes, ACS National meeting, San Francisco (CA), November 2006.

167. Lohmann, R.; Jurado, E.; Pilson, M.E.Q.; Dachs, J. Oceanic deep water formation as a sink of persistent organic pollutants, ACS National meeting, San Francisco (CA), November 2006.

168. Lohmann, R. Use of Passive Samplers for detecting organic compounds North-Atlantic Regional Meeting-SETAC Portland (ME) June 2006.

169. Lohmann, R.; Hand, I.; Schulz-Bull, D.; Nizetto, L.; DiGuardo, A.; Gioia, R.; Jones, K.C.; Xie, Z.; Caba, A; Temme, C. POPs transport and partitioning on a transect from Northern Europe to the high Arctic. SETAC Baltimore, November 2005.

170. Lohmann, R.; Lammel, G. Importance of black carbon adsorption for the gas particle partitioning of polycyclic aromatic hydrocarbons. Abstracts of papers of the American chemical society 230: U1509-U1509 20-ENVR August 2005.

171. Lohmann, R.; Burgess, R.M.; Cantwell, M.G.; Ryba, S.; MacFarlane, J.K.; Gschwend, P.M. Seasonality of water column activities of hydrophobic organic contaminants and implications for their bioaccumulation. Abstracts of papers of the American chemical society 230: U1762-U1763 97-GEOC August 2005.

172. Lohmann, R.; Burgess, R.M.; Cantwell, M.G.; Ryba, S.A.; Gschwend, P.M. Temporal gradients in the sediment-water exchange of persistent organic pollutants. DFG workshop on Biogeochemical gradients, Tuebingen, Germany, June 2005.

173. Lohmann, R.; Burgess, R.M.; Cantwell, M.G.; Ryba, S.A.; Gschwend, P.M. Temporal gradients in the sediment-water exchange of persistent organic pollutants. Collaborative Science for Environmental Solutions, U.S. EPA Science Forum, Washington D.C., May' 05

174. Lohmann, R.; Lammel, G.; Valiyaveethil, S. On the role of black carbon for the long-range transport of PAHs, North-American *SETAC*, November 2004.

175. Jaward, F.; Barber, J.; Durham, L.; Lohmann, R.; Jones, K.C. POPs over the Atlantic, North-American *SETAC*, November 2004.

176. Lohmann, R.; Dachs, J.; Jurado, E.; Jones, K.C. The marine sink of organic pollutants, *SETAC* German Language Branch in Aachen (Germany), October 2004.

177. Lohmann, R.; Dachs, J.; Jurado, E.; Jones, K.C. The marine sink of organic pollutants, Gordon Research Conference Environmental Sciences: Water, New Hampshire, June 2004.

178. Lohmann, R.; Jones, K.C.; Jurado, E.; Dachs, J. The marine sink of organic pollutants, DFG-NSF conference on geosciences, Washington (DC), April 2004**.**

179. Lohmann, R.; Burgess, R.M.; Cantwell, M.G.; Ryba, S.A.; Gschwend, P.M. The bioaccumulation of PAHs and PCBs by the benthic clam *Mya arenaria* as a function of exchange with the water column and sediments, *NA-SETAC,* Austin (USA), November 2003.

180. Lohmann, R. Does adsorption to black carbon dominate the partitioning of persistent organic pollutants?, *NA-SETAC,* Austin (USA), November 2003.

181. Lohmann, R.; Burgess, R.M.; Cantwell, M.G.; Ryba, S.A.; Gschwend, P.M. Erfassung der Bioverfügbarkeit sedimentgebundener organischer Schadstoffe, *GDCh,* Munich (Germany), October 2003.

182. Lohmann, R.; Jurado, E.; Dachs, J.; Jones, K.C. Oceans and atmosphere as global sinks of PCDD/Fs, *Dioxin 2003*, Boston (USA), August 2003.

183. Lohmann, R.; Gioia, L.; Eisenreich, S.J.; Jones, K.C. Adsorption to black carbon dominates gas-particle partitioning of PCDD/Fs in the New Jersey coastal atmosphere, *European SETAC,* Hamburg (Germany), April 2003.

184. Lohmann, R.; Burgess, R.M.; Cantwell, M.G.; Ryba, S.A.; Gschwend, P.M. Bioaccumulation of pyrogenic and non-pyrogenic hydrophobic organic contaminants by *Mya arenaria* and *Nereis spp*., *NA-SETAC,* Salt Lake City (USA), November 2002.

185. Lohmann, R.; MacFarlane, J.K.; Gschwend, P.M On the Importance of Black Carbon to Sediment-Water Equilibria of PAHs, PCBs and PCDDs, American Chemical Society national meeting, Boston (USA), August 2002.

186. Lohmann, R.; MacFarlane, J.K.; Gschwend, P.M On the Importance of Black Carbon to Sediment-Water Equilibria of PAHs, PCBs and PCDDs, best poster award and talk; Gordon Research Conference – Environmental Sciences: Water, New Hampshire (USA), June 2002.

187. Lohmann, R.; Adams, R.G.; Ewald, G.; MacFarlane, J.K.; Gschwend, P.M. Understanding the bioaccumulation of dioxins by *Mya arenaria*, interactive poster session, *NA-SETAC,* Baltimore (USA), November 2001.

188. Lohmann, R.: Understanding the availability of sediment-bound contaminants, *Late Summer Workshop der Deut. Wasserchem. Ges.*, Maurach (Germany), October 2001.

189. Lohmann, R.; Eisenreich, S.J.; Jones, K.C. Spatial and temporal variability of PCDD/Fs in the New Jersey atmosphere, *NA-SETAC,* Nashville (USA), November 2000.

190. Lohmann, R.; Ockenden, W.A.; Shears, J.; Jones, K.C. Global distribution of dioxins and furans in ambient air, *NA-SETAC,* Nashville (USA), November 2000.

191. Lohmann, R.; Ockenden, W.A.; Shears, J.; Jones, K.C. Atmospheric Transport of PCDD/Fs along a Global North-South Transect, *Dioxin 2000*, Monterey (USA), August 2000.

192. Lohmann, R.; Brunciak, P.L.; Gigliotti, C.L.; Nelson, E.; Van Ry, D.; Glenn, T.; Eisenreich, S.J.; Jones, J.L.; Jones, K.C. PCDD/Fs in the New Jersey coastal atmosphere: Evidence for secondary sources and OH-radical initiated depletion reactions, *Dioxin 2000*, Monterey (USA), August 2000.

193. Lohmann, R.; Harner, T.; Thomas, G.O.; Jones, K.C. A comparative study of the gas-particle partitioning of PCDD/Fs, PCBs and PAHs, *Dioxin 2000*, Monterey (USA), August 2000.

194. Lohmann, R.; Jones, K.C.; Nelson, E.; Eisenreich, S.J. Air-water exchange of PCDD/Fs in the Hudson River Estuary/ Raritan Bay, *North-American Society of Environmental Toxicology and Chemistry" (NA-SETAC),* Philadelphia (USA), November 1999.

195. Lohmann, R.; Green, N.J.L.; Jones, K.C. A detailed study of factors influencing atmospheric PCDD/F concentrations in northern England, *NA-SETAC,* Philadelphia (USA), November 1999.

196. Lohmann, R.; Green, N.J.L.; Jones, K.C. Air concentrations and atmospheric transport of PCDD/Fs across the UK and Ireland, *Dioxin 1998*, Stockholm (Sweden), August 1998.

INVITED PRESENTATIONS

1. IPSW – Toronto (Canada) June 2017 **KEYNOTE**

2. Lohmann, R. *People, plastics and pollutants: Passive sampling of POPs in the Great Lakes*. Invited KEYNOTE in session 'Have Great Lakes Restoration Programs Been Successful?'**,** American Chemical Society national meeting, SF (CA), April 2017.

1. Lohmann, R. *Passive sampling of hydrophobic organic contaminants in the Great Lakes and beyond,* Science-Policy Confluence Conference on **Securing Safe Drinking Water: Emerging Contaminants**; Panelist; U Wisconsin-Madison, March 2017

2. Lohmann, R. *Passive sampling of hydrophobic organic contaminants in the Great Lakes and beyond,* Toxicology Department Series, Oregon State University, Corvallis (OR), March 2017.

3. Lohmann, R. *From Humboldt to around the World – Measuring Pollutants in the Waters of the World"* AvH Research Colloquium ,March 2017

4. Lohmann, R. *Passive sampling of hydrophobic organic contaminants in the Great Lakes and around the world,* Webinar, San Francisco Estuary Institute, January 2017.

5. Lohmann, R. *People, plastics and pollutants: Passive sampling of POPs in the Great Lakes*. **KEYNOTE,** NSFC Symposium 2016 on Environmental Processes and Risks of Chemical contaminants, Xiamen (China), Nov 2016.

6. Lohmann, Rainer; Muir, Derek; Zeng, Eddy; Bao, Lian-Jun; Allan, Ian; Arinaitwe, Kenneth; Booij, Kees; Helm, Paul; Kaserzon, Sarit; Mueller, Jochen; Shibata, Yasuyuki; Smedes,

Foppe; Tsapakis, Manolis; Wong, Charles; You, Jing. "Aquatic Global Passive Sampling (AQUA-GAPS) Revisited – First Steps towards a Network of Networks for Organic Contaminants in the Aquatic Environment". 2nd workshop on Global Aquatic Passive Sampling. Guangzhou (China), Nov 2016.

7. Lohmann, R. *People, plastics and pollutants: Passive sampling of POPs in the Great Lakes.* **KEYNOTE,** Conference on Environmental Chemistry of Guangdong Province (China), November 2016

8. Lohmann, R. *Organic pollutants – sorption to plastics – transport and fate*. **KEYNOTE,** German Water Chemistry Society 7th Late Summer Workshop on Microplastics in the aquatic environment (Germany) Sept 2016.

9. Lohmann, R. *Micropollutants in the deep, big ocean*. Lancaster University, Lancaster (UK) May 2016.

10. Lohmann, R. *People, plastics and pollutants: Passive sampling of POPs in the Great Lakes (and beyond),* Webinar, EPA Great Lakes Office, May 2016.

11. Lohmann, R. *Micropollutants in the deep, big ocean*. Maine Maritime Academy, Castine (ME), April 2016.

12. Lohmann, Rainer; Muir, Derek; Carrie McDonough, Zoe Ruge, Mohammed Khairy "Aquatic Global Passive Sampling (AQUA-GAPS). 1st workshop on Global Aquatic Passive Sampling. Guangzhou (China), Jan 2016.

13. Lohmann, R. *People, plastics and pollutants: Passive sampling of POPs in the Great Lakes (and beyond),* Seminar, U Indiana Bloomington, December 2015.

14. Lohmann, R. *Micropollutants in the deep, big ocean*. **KEYNOTE** International PTS workshop, Riverside (CA), November 2015.

15. Lohmann, R.; Z. Ruge, M. Khairy; D. Adelman; Y. Liu, P. Helm, D. Muir. *Dynamics of Organic Contaminants in Great Waters* Orebro University (Orebro, Sweden), September 2015.

16. Lohmann, R. *Sources, Distribution, and Fate of PFASs across the Atmosphere and Oceans*. Fluoros 2015 **KEYNOTE** - An International Symposium on Fluorinated Organics in the Environment, Golden (CO), July 2015.

17. Lohmann, R.; Z. Ruge, M. Khairy; D. Adelman; Y. Liu, P. Helm, D. Muir. *Dynamics of Organic Contaminants in Great Waters* **KEYNOTE**, EcoChange conference (Umea, Sweden), March 2015.

18. Lohmann, R.; Z. Ruge, M. Khairy; D. Adelman; Y. Liu, P. Helm, D. Muir. *Dynamics of Organic Contaminants in Great Waters* Umea University (Umea, Sweden), March 2015.

19. Lohmann, R.; Z. Ruge, M. Khairy; D. Adelman; Y. Liu, P. Helm, D. Muir *Using Passive Samplers to Detect the Cycling of Organic Contaminants in Great Waters* Rhode Island Section – American Chemical Society Providence (RI), Feb 2015.

20. Lohmann, R.; Z. Ruge, M. Khairy; D. Adelman; Y. Liu, P. Helm, D. Muir Air-Water *Exchange of Legacy and Emerging Organic Pollutants across the Great Lakes*, **KEYNOTE** AGU meeting SF (CA), Dec 2014.

21. *Cycling of PAHs and other organic pollutants in the Passaic River*, New York University, Tuxedo (NY), June 2014.

22. *Transfer of POPs in the Passaic River and its food-chain*, Hudson River Foundation, New York City, May 2014.

23. *Marine Pollution and Implications, with a focus on organic pollutants*, University of the West Indies, Port of Spain (Trinidad and Tobago), April 2014

24. *The fluxes and food-chain dynamics of organic pollutants in coastal /estuarine systems*, Institute of Marine Affairs, Chaguaramas (Trinidad and Tobago), April 2014

25. *Transport, Transformation and fluxes of organic compounds in the ocean*, ICBM Oldenburg (Germany), February 2014.

26. *Using Passive Samplers to determine the Environmental Cycling of Organic Pollutants*, ***KEYNOTE*** 5th Workshop on Organic Micropollutants, Rio de Janeiro (Brazil), October 2013.

27. *Using Passive Samplers to determine the Environmental Cycling of Organic Pollutants*, University of New Hampshire, Durham (NH), August 2013.

28. INNOLEC presentations: *1. Marine pollution and a lack of oxygen,* Masaryk University, *Brno (Czech Republic*), May 2013.

29. INNOLEC presentations: *2. The fate of organic pollutants in the oceans over space and time*, Masaryk University, Brno (Czech Republic), May 2013.

30. INNOLEC presentations: *3. Ocean circulation as a vector for emerging and submerging pollutants*, Masaryk University, *Brno (Czech Republic*), May 2013.

31. Lohmann, R. *Fate of POPs in the Oceans*, Lancaster University (UK), May 2013.

32. Lohmann, R. *Spatial, temporal trends and air-water exchange of PAHs across Lake Superior*, GLAD webinar, July 2012.

33. *Emerging and Submerging Organic Pollutants in the Ocean* Gordon Research Conference

Oceans and Human Health, Biddeford (ME) June 2012.

34. *Environmental transport, fate and bioavailability of POP mixtures*, Northeast Superfund Research Program integrative research translation activity (RTA), "Complex Mixtures and Exposures: Analyzing, Modeling and Predicting Fate and Effects at Multiple Levels of Environmental and Biological Systems" Marine Biological Laboratory in Woods Hole, (MA) April 2012

35. *In Search of Planetary Boundaries for Chemical Pollution*, 1st IPCP Scientific Workshop, Chalmers University of Technology, Gothenburg (Sweden) April, 2012.

36. *Transport and fate of aqueous organic pollutants: from the local to global scale* Brown University (RI), February 2012.

37. *Transport and fate of aqueous organic pollutants* IfM Geomar Kiel (Germany), February 2012.

38. *Global Aquatic Passive Sampling (AQUA-GAPS): Using Passive Samplers To Monitor POPs In The Waters Of The World.* Symposium on the Future of Operational Oceanography Hamburg (Germany) October 2011.

39. *Transport and fate of aqueous organic pollutants* Yale University, September 2011.

40. *Use of passive samplers to determine the transport and fate of aqueous organic pollutants* Norwegian Insitute for Water Research, NIVA, Oslo (Norway), August 2011.

41. *Use of passive samplers to determine the transport and fate of aqueous organic pollutants* Helmholtz-Zentrum München (Germany), August 2011.

42. *Using passive samplers to detect concentrations, gradients and trends of legacy and emerging POPs in the water,* RECETOX WORKSHOP - Identifying the research needs in the global assessment of toxic compounds ten years after the signature of the Stockholm Convention. Brno, Czech Republic, May 2011

43. *Use of passive samplers to determine the transport and fate of aqueous organic pollutants* University of Tübingen (Germany), April 2011.

44. *Use of passive samplers to measure organic contaminants*, Indian Institute of Technology Madras (Chennai, Tamil Nadu), India, February 2011.

45. *Origin and fluxes of black carbon in sediments,* National Institute of Oceanography, Kochi (Kerala), India, January 2011.

46. *Using passive samplers to determine the transport and bioaccumulation of trace organic compounds in the Sea,* National Institute of Oceanography, Mumbai (Maharashtra), India, December 2010.

47. *Using passive samplers to determine the transport and bioaccumulation of trace organic compounds in the Sea,* National Institute of Oceanography, Dona Paula (Goa), India, November 2010.

48. *Origin and fluxes of black carbon in sediments,* National Institute of Oceanography, Vishakhapatnam (Andra Pradesh), India, October 2010.

49. *Origin and fluxes of black carbon in sediments*, National Institute of Oceanography, Dona Paula (Goa), India, September 2010.

50. *World Ozone Day – Global/ Climate Change*, Eco-teachers workshop, National Green Corps Goa, Verna (Goa), India, September 2010.

51. *World Ozone Day – Global/ Climate Change,* Eco-teachers workshop, National Green Corps Goa, Panjim (Goa), India, September 2010.

52. *Role of microplastics on transport and fate of POPs,* International Maritime Organization (IMO) - GESAMP workshop on microplastics, June 2010, Paris (France).

53. *Marine fate of organic pollutants: Air-water exchange and in-water gradients*, Environment Canada, Burlington (ON), February 2010.

54. *Research excellence in water quality and supply*, National Risk Management Research Laboratory, Cincinnati (OH), November 2009.

55. *Black carbon in sediments – origin, fluxes and effects,* MARUM Research Center, University of Bremen (Germany), November 2009.

56. *Dioxins in the Passaic River – Buried and Gone, or Recycling?* Hudson River Foundation, New York City, May 2009.

57. *Global Fate of POPs*, Institute of biogeochemistry and pollutant dynamics (IBP), Swiss Institute of Technology, Zürich (Switzerland), November 2008.

58. *Global air-water transfers of organic pollutants.* URI Dept of Chemistry, November 2008.

59. *Global fate of POPs – A marine perspective.* South Florida University, Environmental Research Interdisciplinary Colloquium, November 2008.

60. *Transport and fate of POPs - an Oceanic perspective.* MIT/WHOI biogeochemistry seminar series, at EAPS (MIT), October 2008.

61. *Global transport and fate of POPs – an Oceanic perspective.* NOAA Workshop on the fate of microplastics in the Ocean, Seattle, September 2008.

62. *Use of passive samplers to determine dissolved concentrations of PAHs in Narragansett Bay*, RI DEM – Bay Assessment and Response Team (BART) Annual meeting, URI, July 2008.

63. *Global transport and fate of POPs: Water*, Gordon Research Conference – Environmental Sciences: Water, Holderness (NH), June 2008.

64. *Biogeochemical cycling of persistent organics*, Distinguished Speaker Series, Chesapeake Biological Laboratory, February 2008.

65. *Using passive samplers to measure dissolved components from oil spills*, CRRC-SINTEF, Trondheim, January 2008.

66. *Process-based studies and parameters of POPs in oceans:* Measurement, understanding, cycling; IIQAB, Barcelona, June 2007.

67. *Recent studies on POPs in oceans & estimating the global dioxin budget*, Lancaster University Research Partners Workshop, Lancaster (UK), October 2006.

68. *Marine chemistry of POPs along the Atlantic Ocean*, Distinguished Speaker Series, Chesapeake Biological Laboratory, October 2006.

69. *Tracing surface and deep waters using GC-MS,* MAC seminar, URI-GSO, October 2006.

70. *The marine sink of organic pollutants*, Lancaster University, July 2006.

71. *An Atlantic transect of organic pollutants in air and water.* ARMADA workshop talk, URI-GSO, June 2006.

72. *Use of Passive Samplers for detecting organic compounds*, Short course on new sampling approaches at the North-Atlantic Regional Meeting-SETAC Portland (ME) June 2006.

73. *The marine sink of organic pollutants*, University of Connecticut – Avery Point, Marine Science seminar, May 2006.

74. *Black Carbon as a supersorbent? The availability of organic pollutants.* Binghamton University, October 2005.

75. *Global Fate of POPs – revisited* Connecticut College, October 2005.

76. *Global fate of POPs*, SURFO hot topic seminar, GSO, July 2005.

77. *Sampling of POPs over the Atlantic – dealing with contamination*, GKSS Research Center, Geesthacht (Germany), February 2005.

78. *Black carbon as a supersorbent? The availability of organic pollutants*, Graduate School of Oceanography, University of Rhode Island, Narragansett (USA), March 2004.

79. *The marine sink of organic pollutants*, Graduate School of Oceanography, University of Rhode Island, Narragansett (USA), March 2004.

80. *Marine sink of organic pollutants*, Institut for Baltic Sea Research (IOW), Rostock-Warnemünde (Germany), February 2004.

81. *The air-water sinking flux of organic pollutants: competition between phytoplankton and black carbon*, Symposium on Ocean Margins, Bremen (Germany), August 2003.

82. *Atmospheric sources, chemistry and fate of persistent organic pollutants*, Ocean University of China, Qingdao (China), June 2003.

83. *Does black carbon dominate the partitioning of organic pollutants?*, Department of Environmental Chemistry (IIQAB-CSIC), Barcelona (Spain), March 2003.

84. *The (bio)availability of sediment-bound organic pollutants*, Institute of Applied Environmental Research (ITM), Stockholm (Sweden), September 2002.

85. *The (bio)availability of sediment-bound organic pollutants*, Institute for Baltic Sea Research (IOW), Rostock-Warnemünde (Germany), September 2002.

86. *The (bio)availability of sediment-bound organic pollutants*, EAWAG, Swiss Institute of Technology, Zürich (Switzerland), May 2002.

87. *The real partitioning and behaviour of dioxins and other organic pollutants in the environment*, Institute for Waterchemistry, Technical University München (Germany), June 2001.

88. *Atmospheric partitioning and behaviour of organic pollutants*, Max-Planck-Institute for Chemistry, Mainz (Germany), Juni 2001.

Research Funding Record

Year	Title of Project	Funding Agency	Total Award	URI Award	% Effort
2005	*Characterization and Properties of Environmentally Relevant Black Carbon Particulates* – Travel Grant for speakers at ACS Symposium,	American Chemical Society – Petroleum Research Fund SE Grant	$ 3,600	$ 3,600	100%

2005/6	*An East-West Atlantic Transect of Black Carbon and POPs*	Rhode Island Endeavor Program	$ 20,000	$ 20,000	100%
2005	*Pyrogenic Black Carbon and PAHs in South Atlantic Sediments*	URI Council for Research	$ 9,885	$ 9,885	100%
2005	*Developing a seasonal passive sampler for persistent organics*	URI-Partnership for Ocean Instrumentation	$ 23,000	$ 23,000	100%
2006	*Use of carbon isotopes to determine whether there are natural sources of dioxins*	URI Council for Research	$ 10,000	$ 10,000	100%
2006/7	*Use of passive samplers to determine dissolved concentrations of PAHs at different locations in Narragansett Bay*	Rhode Island Department of Environmental Management /BART	$ 21,140	$ 21,140	100%
2006	*Acquisition of a high-resolution GC-Mass spectrometer*	Vetlesen and Monel Foundation	$ 300,000	$ 300,000	100%
2006/7	*Field Monitoring to Assess Effects of Remedial Dredging on Resuspension and Release of PCBs at the New Bedford Harbor Superfund Site*	Subcontract to EPA Contract 68-C-03-041 WA#3-46 NBH Dredging Research	$ 80,000	$ 32,000	40%
2007/8	*Evaluation of Passive Sampling Devices for Measuring Dissolved and Bioavailable PCBs in the Water Column*	Subcontract to EPA Contract 68-C-03-041 WA#4-46 NBH Dredging Research	$ 194,000	$ 43,200	22%
2006-8	*Atmospheric Chemistry and air-water exchange of halogenated organic compounds in the remote South Pacific*	SGER – NSF Atmospheric Chemistry	$ 56,183	$ 56,183	100%
2007-9	*Are Natural Chars important for the sorption of PAHs? A field study with lake sediments and soils in Oriole Lake*	ACS – Petroleum Research Fund	$ 40,000	$ 40,000	100%
2007-10	*The Role of Black Carbon in Attenuating the Availability of Sedimentary Dioxins in the Lower Hudson River Estuary and Implications for their Bioaccumulation*	Hudson River Foundation	$ 172,960	$ 172,960	100%
2008-09	*Detecting dissolved PAHs from oil spills using passive samplers in cold water and ice cores*	UNH-CRRC (NOAA)	$ 533,879	$ 144,034	27%

2008-10	Collaborative Research: *Constraining the marine nitrogen cycle using a new approach to measuring nitrogen isotopes of porphyrins (co-PI) with R. Robinson (URI-GSO) and Harvard University*	NSF Chemical Oceanography	$ 321,096	$ 42,627	13%
2008-11	*Using passive samplers to detect emerging contaminants and predict their bioavailability to benthic organisms*	UNH-CICEET (NOAA)	$298,938	$298,938	100%
2009	*Use of PE samplers to detect PCBs in Palos Verdes*	U.S. EPA	$ 2,641	$ 2,641	100%
2009-10	*Reconstructing natural fire events, their strength and causes: A case study in Oriole Lake*	Joint Fire Science Project	$ 80,174	$ 75,174	95%
2009	*An Atlantic Transect of the Americas of Black Carbon and POPs*	Rhode Island Endeavor Program	$ 20,000	$ 20,000	100%
2009-10	*A South-Atlantic Transect of Black Carbon and POPs*	Rhode Island Endeavor Program	$ 25,000	$ 25,000	100%
2009-13	*Collaborative research: persistent organic pollutants in the Antarctic marine food Web: Impact of climate change and insights into the feeding ecology of apex Predators (with R. Dickhut, VIMS)*	NSF – Office of Polar Programs	$ 499,636	$ 101,822	20%
2009-13	*The Black Carbon Cycle: Budget and Fluxes of Black Carbon in South Atlantic Sediments*	NSF – Chemical Oceanography	$ 392,494	$ 392,494	100%
2009-10	*Using Passive Samplers to Predict Bioaccumulation of Sedimentary Organic Contaminants (for Carey Friedman)*	Graduate Fellowship by the Hudson River Foundation	$ 16,000	$ 16,000	100%
2010-11	*Canadian travel grant (for Lin Zhang)*	Government of Canada	$ 4,000	$ 4,000	100%
2010-2015	*Enhancing IADN with Passive Sampling to Assess the Spatial Variability and Air-Water Exchange of Persistent Bioaccumulative Toxics*	EPA – Great Lakes Program	$ 869,401	$ 869,401	100%
2010-12	*Using passive samplers to detect legacy and emerging organic PBTs in Lake Superior, and their air-water exchange*	Great Lakes Air Deposition (GLAD) Program	$ 130,798	$ 130,798	100%

2011-15	*The Availability and Bioaccumulation of Sedimentary 2,3,7,8-TCDD and other Persistent Organic Pollutants in the Lower Passaic River*	Hudson River Foundation	$ 206,042	$ 206,042	88%
2012-15	*Collaborative research: Evaluating the competing impacts of global emission reductions and climate change on the distribution and retention of selected POPs in the Arctic Ocean (with E. Sunderland, Harvard and N. Eckley Selin, MIT)*	NSF – Office of Polar Programs ARC 1203486	$ 837,501	$ 313,083	37%
2013-2014	*RAPID: ORIGIN OF PERSISTENT ORGANIC POLLUTANTS IN THE ANTARCTIC ATMOSPHERE, SNOW AND MARINE FOOD WEB*	NSF – Office of Polar Programs ANT 1332492	$ 111,468	$ 111,468	100%
2013-14	*Analysis of fur seal milk samples for persistent organic pollutants*	National Marine Sanctuary Foundation	$ 21,840	$ 21,840	100%
2013-14	"Immunotoxicity Risks Associated with Exposures to Perfluoroalkyl Substances (PFASs) in Marine Seafood." (PI: E. Sunderland; co-PI Lohmann)	Gift to Harvard Office of Sponsored Research.	$ 100,000	$ 35,000	35%
2014-2016	*Community based seawater monitoring for organic contaminants and mercury in the Canadian Arctic (PI Muir)*	Northern Contaminants Program (Canada)	$ 182,900	$23,500	11%
2014	*The role of estuaries in delivering terrestrial and fossil carbon compounds into the Atlantic Ocean along the Eastern Seaboard (PI)*	RIEP	$ 153,000	$ 153,000	100%
2015-2016	*Development Of A Passive Multisampling Method To Measure Dioxins/Furans And Other Contaminant Bioavailability In Aquatic Sediments (PI)*	SERDP-SEED	$ 150,000	$ 150,000	100%
2014-2015	*Pollutants and Lobster Shell disease*	RI SeaGrant	$ 10,000	$ 10,000	100%
2014-15	*Hurricane Sandy mobilization of contaminants into the foodchain*	NJ DEP	$ 83,342	$ 65,000	78%

2015	*PCB monitoring after sediment capping*	ENVIRON	$ 41,924	$ 41,924	100%
2016-17	Currently and recently-used persistent bioaccumulative toxic contaminants in sediment, water and biota from the Passaic River *(for Carrie McDonough)*	Graduate Fellowship by the Hudson River Foundation	$ 16,000	$ 16,000	100%
2016-19	*Contaminant Assessment and Reduction Project II*	Hudson River Foundation	$ 265,851	$ 265,851	100%
2017	The role of the Gulf Stream and Caribbean Current in delivering terrestrial and fossil carbon compounds into the Atlantic	RIEP	$160,000	$160,000	100%
2017-2019	*Community based seawater monitoring for organic contaminants and mercury in the Canadian Arctic (PI Muir)*	Northern Contaminants Program (Canada)	$ 182,900	$6,500	5%
2017-2022	*SRP Center: Sources Transport Exposure and Effects of PFASs (STEEP), PI, suggested for funding*	NIEHS	$ 10,907,675	$ 6,980,912	64%
2017-2018	Development and field validation of a novel passive sampler for fluorinated contaminants	STAC	$ 90,000	$ 87,250	96%
2018-2020	*Field Testing A Passive Multisampler to Measure Dioxins/Furans and Other Contaminant Bioavailability in Aquatic Sediments, pending*	SERDP	$ 529,747	$ 516,050	97%
2018-21	*Evaluating the Importance of Precursor Transport and Transformation for Groundwater Contamination with Poly- and Perfluoroalkyl Substances (PI Sunderland, Harvard), pending*	SERDP	$ 304,020	$ 1,120,000	28%
2018-21	*Improve the use and understanding of passive sampler deployments in contaminated sediment to predict higher trophic level HOC accumulation, pending*	SERDP	$ 522,591	$448,818	86%
2018-2019	*PARADIGM: PARticle And hydrocarbon Dynamics In the Gulf of Mexico (PI Maitri, LSU), pending*	GoMRI	$ 286,504	$ 6Mio	5%

Total Funding: $6,022,824 (Total Awards)
$3,985,754 (Lohmann effort; average = $362 K/year, since 2004 at URI)

Scientific Collaborators:

L. Ahrens[6]; P Appleby[21];C Balducci[26]; K Barrett[9]; J.P. Benskin[10]; T Bidleman[12]; K Blaha[27]; L Blaha[24]; I. Belkin[14]; K Bollinger[14]; K Booij[2]; H Bouwman[28]; K Breivik[17]; R Burgess[3]; M Cantwell[3]; A Caprio[20]; X. Castro-Jiminez[4]; J Dachs[4]; D DeMaster[23]; A. DeSilva[12]; M Diamond[25]; R Dickhut[15]; H Dijkstra[11]; S Eckhardt[29]; H Fiedler[30];P Garriques[31]; R Gioia[4]; T Gouin[17]; P Grathwohl[8]; T Harner[12]; P Helm[22]; P Herckes[13]; R.A. Hites[16]; I Holoubek[24]; GA Hodges[17]; H Hung[12];KC Jones [1]; E Jurado[7]; J King[14]; J Klanova[24]; P. Kuckucka[24]; H. Kylin[43]; G Lammel[7]; M MacLeod[33]; K Magulova[30]; J.W. Martin[38]; A. Morris[12]; S Mosca[26]; L Nizzetto[18]; D Muir[12]; M Perron[3]; J.M. Perry[44]; N Pirrone[26]; A Pistocchi[34]; N Roche[17]; B Rosenberg[45]; M Scheringer[19]; BF Scott[12]; ; N Selin[42];; S Simonich[35]; F Smedes[36];C Spencer[12]; H Stapleton[46]; E Stephanou[37]; E Sunderland[43]; A Sweetman[1]; K Sebkova[27]; S Tamiyasu[47]; C. Teixera[12]; G Tomy[45]; M Vernier[16]; M Vighi[39]; B Vrana[24]; F Wania[25]; R Weber[40]; M Weinstein[5]; P Weiss[41]; N Yamashita [47]

[1]Lancaster Univ. (UK); [2]NIOZ (NL); [3]US-EPA RI; [4]CSIC (Spain); [5]Montclair State [6]ITM (SWE); [7]MPI Meteorol. (GER); [8] U of Tuebingen (GER); [9]Manhattan College; [10]AXYS (US); [11]Utrecht Uni (NE); [12]Environment Canada (CA); [13]Arizona State University; [14]URI-GSO; [15]VIMS; [16]Indiana Univ; [17]Unilever; [18]University of Insubria (IT); [19]ETH (CH); [20]NPS (CA); [21]U of Liverpool (UK); [22]Ontario MOE (CA); [23]North Carolina State; [24]Recetox (CZ); [25]U of Toronto (CA); [26]CNR Rome (IT); [27]Czech MoE (CZ); [28]NW University (SA); [29]NILU (NO); [30]UNEP (CH); [31]U of Bordeaux (FR); [32]CNR Rome (IT); [33]Stockholm University (SW); [34]GECO Cesena (IT); [35]OSU Corvallis; [36]Deltares (NL); [37]U of Crete (GR); [38]Indiana University; [39]U of Milano (IT); [40]POPs Env Consult. (GER); [41]FEA Vienna (AU); [42]MIT; [42]Harvard SPH; [43]Linkoping U (SWE); [44]Bigelow Lab; [45]Dept of Fisheries and Oceans Canada; [46]Duke Uni; [47]National Institute of Advanced Industrial Science and Technology, Tsukuba (JA)

Graduate Students, Postdoctoral Fellows, and Technical Personnel:

<u>Graduate Students (current position indicated in brackets):</u>

1. Monika Truemper, M.Sc. (University of Bremen) 2005 Co-advisor (PhD-student, NILU, Norway)
2. Eric Morgan, M.Sc. 2007. Major Professor (PhD-student, MPI for Biogeochemistry Jena, Germany)
3. Pamela Luey, M.Sc. 2010. Major Professor (Environmental Chemist, Narragansett Bay Commission).
4. Matthew Lambert, M.Sc. 2010. Major Professor (EPA Office of Research and Development)
5. Carey Friedman, Ph.D. 2010. Major Professor (Assistant Prof of Marine Science at Maine Maritime Academy)
6. Victoria Sacks, M.Sc. 2010. Major Professor (Environmental Chemist, Environ)
7. Sanober Kahkashan, NIO Pakistan, POGO Training Fellow. 2009 Sept-Dec 2009
8. Lin Zhang, Ph.D. 2012. Major Professor (Assistant Professor, Texas A&M Corpus Christi)
9. Shifra Yonis, M.Sc. 2012. Major Professor (Environmental Chemist, E2 ManageTech, Inc.)
10. Zoe Ruge, M.Sc. 2013. Major Professor (EPA Office of Water.)

11. Kari Pohl, Ph.D. 2014. Major Professor (Research coordinator, Delaware NERR)
12. Erin Markham, M.Sc. 2014. Major Professor (Leidos, Newport)
13. Caoxin Sun, M.Sc. 2015. Major Professor
14. Ben Chebot, M.O. 2016. Major Professor
15. Jennifer Cragan, M.Sc. 2016. Major Professor
16. Carrie McDonough, Ph.D. 2017. Major Professor
17. Erik Dixon-Anderson, M.Sc. candidate. Major Professor
18. Rachel Miller, Ph.D. candidate. Major Professor
19. Anna Robuck, Ph.D. candidate. Major Professor

Visiting Scholars/Post-doctoral Fellows:

1. Dr. Mohammed Khairy (Alexandria University, Egypt), Fulbright fellow. May 2011 – January 2012.
2. Dr. Mohammed Khairy, Postdoc. February 2012 – February 2016.
3. Dr. Rodrigo O. Meiras (Rio De Janeiro Federal University, Brazil), Postdoc. May – October 2012.
4. Dr. Ying Liu (Tonji University), visiting Scholar, Nov 2013 – Oct 2014.
5. Dr. Minggang Cai (Xiamen University), visiting Scholar, March 2014 – February 2015.
6. Wenlu Zhao (Xiamen University), graduate student, March 2014 – February 2015.
7. Dr. Xiaoping Wang (Tibetan High Plateau Research Institute), visiting Scholar, September 2015 – August 2016.
8. Renato Miani Goncalves (Universidade Est. Paulista Julio de Mesquita Filho/Araraquara), graduate student, September - December 2015.
9. Xiangyi Gong (Wuhan University of Science and Technology), visiting Scholar, January - December 2016).
10. Yuxin Ma (Shanghai Ocean University), visiting Scholar, August 2016 – July 2017.
11. Nabigha Amen (COMSATS Institute of Information Technology, Islamabad, Pakistan) visiting graduate student, March 2017-August 2017.

Technical Personnel:

1. Eddy Roggenstein, Marine Research Specialist, 2005 (part-time)
2. Kevyn Bollinger, undergraduate student (Ocean Engineering), 2005-6 (part-time)
3. Meredith Dapsis, undergraduate student, 2006-2007 (part-time)
4. Bridget Reanay, undergraduate student (Chemistry/ Chem. Oceanogr.), 2006 (part-time)
5. Craig Mallen, Marine Research Specialist, 2006 (part-time)
6. Daniel MacDonald, undergraduate student (Chemistry/ Chem. Ocean.), 2007 (part-time)
7. Kevin Borsay, undergraduate student (Ocean Engineering), 2007 (part-time)
8. Deanna Silva, undergraduate student (Chemistry/ Chem. Ocean.), 2007 (part-time)
9. Eric Morgan, M.Sc. 2007. Partial support, 2007 (Instructor, Simmons College)
10. Dave Adelman, Marine Research Specialist, 2008-current, since 2010 with benefits.
11. Kevyn Bollinger, undergraduate student (Ocean Engineering), 2007-8 (part-time)
12. Julia Sullivan, undergraduate student (Biology), 2008-9 (part-time)

13. Kari Pohl, graduate student (Roger Williams), 2009 (part-time)
14. Kevyn Bollinger, graduate student (URI Ocean Engineering), 2009, part-time
15. Steven Cahill, undergraduate student (URI Chemistry) 2010 – 2012, part-time
16. Taylor Perkins, undergraduate student (URI Chemistry) 2010 – 2011, part-time

Research Cruise Participation:

Key: **A.** Sampling conducted by myself and/or my research group.
B. Sampling conducted by others on behalf of my research group.
C. Chief Scientist.

1. 2017 *R/V Endeavor*, EN-592 Morehead City - Port Everglades, April 31-May 5 **A, C**
2. 2014 *R/V Endeavor*, EN-545 Narragansett - Narragansett, August (6 days) **A, C**
3. 2013 *R/V Knorr*, Montevideo to Bermudas, March 15 – May 1, 2013 **A**
4. 2011 *R/V Endeavor*, EN-500 Narragansett - Narragansett , October (6 days) **A**
5. 2010 *R/V Endeavor*, EN-479 St Petersburg – Barbados, July (14 days) **A, C**
6. 2010 *R/V Endeavor*, EN-480 Barbados – Barbados, July-August (14 days) **A, C**
7. 2010 *R/V Endeavor*, EN-481 Barbados – Dakar, August (25 days) **A, C**
8. 2010 *R/V Endeavor*, EN-482 Dakar - Narragansett , August-September (14 days) **A, C**
9. 2009 *R/V Endeavor*, EN-464 Walvis Bay (Namibia) – Rhode Island, July (21 days) **A**
10. 2009 *R/V Endeavor*, EN-462 Ft Lauderdale (FL) – Fortaleza (Brazil) May (14 days) **A**
11. 2008 *R/V Knorr*, NABE , Reykjavik to Reykjavík, May 1 – May 22, 2008 **A**
12. 2008 *R/V Knorr*, ICEALOT ,Woods Hole to Tromso, March 17 – April 11, 2008 **A**
13. 2007 Sediment coring of Oriole Lake in Sequoia and Kings Canyon National Park **A**
14. 2006 *R/V Roger Revelle*, San Diego - Samoa – Sample collection for NSF atmospheric chemistry grant (15 days) **A**
15. 2006/7 *R/V Roger Revelle*, Pacific – Sample collection for NSF atmospheric chemistry grant (33 days) **B**
16. 2006 *R/V Endeavor*, EN-415 Narragansett – Nice (France) March (22 days) PI Lohmann **A, C**
17. 2006 *R/V Endeavor*, EN-421 Heraklion, Crete (Greece) – Narragansett June (22 days) PI Morgan **A, C**
18. 2005 *FS Polarstern*, ANT-XXII/1: Bremerhaven – Cape Town, Air-Water Exchange of POPs and Black Carbon, Chief scientist: Dr. van der Loeff, AWI (32 days) **A**

19. 2004 *FS Polarstern*, ARK-XX/1 Bremerhaven – Longyearbyen, Atmospheric delivery and water column dynamics of POPs in the Arctic, Chief scientist: Prof. Peter Lemke, AWI (35 days) **B**

20. 2004 *FS Polarstern*, ARK-XX/2 Longyearbyen – Tromsø, Atmospheric delivery and water column dynamics of POPs in the Arctic, Chief scientist: Prof. Peter Lemke, AWI (45 days) **A**

21. 2001 *MV Samantha Miller*, Hudson River – Sediment resuspension - release of POPs, Chief scientist: Dr Rockwell Geyer, WHOI (2 days) **A**

22. 1998/9 *RRS Bransfield* Grimsby (England) – Halley (Antarctic) – Montevideo (Uruguay), Global transport and distribution of persistent Organic Pollutants, Chief scientist: Dr. John hears, British Antarctic Survey (12 weeks) **A**

23. 1998 *RV Walford*, Hudson River estuary – Atmospheric PCDD/Fs; Air-water exchange, Chief Scientist: Prof. Steve Eisenreich, Rutgers University (4 days) **A**

IV. SERVICE: CONTRIBUTIONS TO THE UNIVERSITY AND EXTRAMURAL COMMUNITY

I was elected to become editor of '*Environmental Toxicology and Chemistry*' in 2013, the flagship journal of the *Society of Environmental Toxicology and Chemistry*. From 2008 to 2010 I had served on its editorial Board. I also serve as Editor for the newly launched journal '*CLEAN – Air, Soil and Water*', led by Dr. Mufit Bahadir (Braunschweig, Germany) since 2007. CLEAN aims to represent the environmental science of the 21st century from an international perspective, presenting answers to the question 'Based on all we have learned over the last 50 years, what happens next'?
I was asked to join the Editorial Board of the new ACS journal 'EST Letters', starting in 2013. Lastly, I agreed to serve on the Editorial Board of '*Environmental Pollution*' and the new online journal '*Atmospheric Pollution Research*', but stepped down from the Editorial Boards of the '*Scientific World'*.
I was appointed to the 'UCAR Governance Task Group' Jan 2016 onwards.
I testified before the U.S. House Energy and Commerce Subcommittee on Environment and the Economy on July 11, 2013 (2322 Rayburn House Office Building) on 'Regulation of New Chemicals, Protection of Confidential Business Information, and Innovation'. I have also been working closely with staff from Senator Whitehouse to advance meaningful TSCA reform. As part of my push to overhaul TSCA, I lead a Viewpoint article in ES&T on its reform, and wrote a guest editorial in ACS's weekly newsmagazine *Chemical and Engineering News*. Together with the Environmental Working Group, I co-wrote an open letter to congress, urging scientists so support meaningful TSCA reform.

I am a member of the steering committee of "Microplastics in the Ocean' NOAA working group.
I served on several science panels:

- Hudson River Fund – Science member panel'09
- National Science Foundation – PIRE program in GeoClimate May'09
- US EPA STAR Graduate Fellowship Program 2012, 2015

In 2013 I was appointed to the UN EP's Pool of Experts for the upcoming World Ocean Assessment. I will contribute to Chapter 21and I will serve as a reviewer/commentator for Chapter 25 (Marine Debris).
Previously, I served in numerous meetings to define organizations research directions, such as

- Steering committee for establishment of passive sampling of POPs May 2011.
- International Maritime Organization – Microplastics Workshop June'10
- Narragansett Bay Estuarine Program's Biological Conditions Gradient workshop on defining goals for a better management of the Bay (October'09)
- NOAA's Marine Debris Program to define the state-of knowledge and threat of microplastics in the Oceans (September'08)
- The Department of Defense's (DoD) Strategic Environmental Research and Development Program (SERDP) and the Environmental Security Technology Certification Program (ESTCP)'s Research and Development Needs for Understanding and Assessing the Bioavailability of Contaminants in Soils and Sediments (August'08).
- SERDP/ESTCP Workshop on R&D Needs for Long-Term Management of Contaminated sediments, Seattle (WA) August 2016.
- NSF's Office of Polar Program collaboration with the Swedish Research Council to define research on the R/V ODEN (March'08)
- The Hudson River Foundation's 'Toxic Substances in the Hudson River: State of knowledge, research needs and future directions' meeting (July'05).

Within Rhode Island, I was appointed to the RI Aquatic Science Collaborative (formerly the River, Bays and Watershed Council).
I also serve as a member of the 'Bay Assessment and Response Team' (BART). BART is set-up to aid the State of Rhode Island in case of an emergency with scientific and expert advice. I am also a Senior fellow of URI's Coastal Institute, which aims to Advance Knowledge and Develop Solutions to Environmental Problems in Coastal Ecosystems. In November 2016, I briefed staff of the RI's Department of Health and Department of Environmental Protection on our work and perspectives on the dangers posed by poly- and perfluorinated compounds.

In terms of outreach, I have served as a

- PHD-MS Mentor at AGU Annual fall meeting San Francisco, Dec 2008 for Kelli Bray
- PHD-MS mentor at Ocean Sciences, Salt Lake City, February 2012 for Camille Gaynus
- PHD-MS mentor at AGU Annual fall meeting San Francisco, Dec 2012 for John Brito
- PHD-MS mentor at AGU Annual fall meeting San Francisco, Dec 2015 for Solianna Herrera
- ARMADA teacher mentor on an R/V Endeavor cruise in 2005
- Supervisor to SURFO, Coastal Fellow and Honors student research projects at URI-GSO
- For my CICEET funded work on validating passive samplers, I have involved citizen-scientists from around RI to deploy passive samplers in Narragansett Bay.
- Work and presentation to RI Watershed Watch Volunteers May 2014
- Collaboration with METCALF institute on journalist training in 'theory and practice of emerging contaminants', June 2012; June 2015; June 2016
- Outreach to general public at America's Cup with hands-on display and talk on 'Trash Talk: marine Pollution' June 2012
- Webinar as part of Atmospheric Toxics GLAD seminar, July 2012
- Taking part in 'Sharpening your message' (NSF EPSCoR) 2-day workshop July 2012

- Presentation to GSO's Dean's Advisory Council May 2013
- Public presentation to Community Center at Temple Emmanu-El, Providence (RI), June 2013.
- Presentation 'Organic Pollutants in Narragansett Bay' on Marine Trades and Defense Day, URI-GSO, November 2013.
- Work with the SMILE Program at URI in 2013-2014
- Presentation to Cuban Delegation to URI-GSO February 2017

Service to the University Community:

1. GSO Vision committee (06/2006 -2008)
2. GSO Faculty Search Committee EPSCoR (04-10/2007)
3. GSO EPC committee (2007-2009)
4. GSO Faculty Search Committee Chemical Oceanographer (2007-2008)
5. GSO Marine committee (2008-2010)
6. GSO MERL renovation grant committee (06/2009 -09/2009)
7. GSO Ocean Class Operator proposal committee (04/2009 - 2011)
8. URI-wide DIVERSITY task force (08/2009 - 08/2011)
9. GSO Student Admission and Review Committee (2009 until present)
10. Mentor for new faculty hire – Brice Loose (Dec 2011 until present)
11. URI-wide Global Steering Committee (04/2012 - 08/2013)
12. Search committee for cluster hire – 3 positions 'Water' across URI (2012-2014)
13. URI Graduate Council (2012 – 2015)
14. URI's member representative to UCAR (University Corporation for Atmospheric research) (2012 until present)
15. Mentor for new faculty hire – Ali Akanda, Water Cluster Hire in CEE (Fall 2013 until present)
16. Provost's representative on the Administrator Evaluation Committee for Dean Nasser Zawia (Dec 2013 – March 2014).
17. GSO Ad-hoc committee – Graduate student funding opportunities for GSO
18. GSO Ad-hoc committee – Graduate Program Assessment Outcome planning
19. GSO Promotion and tenure Committee (2014-2015)
20. RCR talk GSO February 2015
21. GSO Faculty Search Committee Biogeochemistry of vents and seeps (2015-2016)
22. GSO Dean's Advisory Committee (2016-)
23. GSO Educational Policy Committee (2016-)

Service to the Extramural Community (invited):

1. Co-chair 2nd workshop in Global Aquatic Passive sampling (AQUA-GAPS), Guangzhou (China) Nov. 2016.
2. Chair, EU-SETAC with Dr Timo Harmers (Vrije Univeristy Amsterdam) and Ron van der Oost (Waternet): Passive sampling for organic micropollutants and toxicity assessment: opportunities, challenges and innovations, Nantes (France), May 2016.
3. Chair SciX meeting with Carrie McDonough (URI): GC-MS based detection of emerging flame retardants in the environment; Providence (RI), September 2016
4. Chair SciX meeting: LC-MS based detection of perfluorinated contaminants in the environment; Providence (RI), September 2016
5. Chair ACS Fall meeting with Carrie McDonough (URI): Using Passive Sampling Techniques to Detect Organic Contaminants; Boston (MA), August 2016

6. Co-chair 1st workshop in Global Aquatic Passive sampling (AQUA-GAPS), Guangzhou (China) Jan. 2016.
7. Chair North American SETAC with Dr Xianming Zhang (Harvard): Monitoring and Modeling Hydrophilic Organic Contaminants in Aquatic Systems: Occurrence, Trends, Physicochemical Processes and Environmental Impact Vancouver (CA) November 2014.
8. Chair North American SETAC with Dr Jordi Dachs (IDEA Barcelona): Marine and plastics, Nashville (TN) November 2013.
9. Chair Ocean Sciences Meeting with Dr Carrie Masiello (Rice University): Sources, transformation and sinks of black carbon in the Ocean, Salt Lake City (UT) February 2012.
10. Chair North American SETAC with Dr Cripin Halsall (Lancaster University) and Dr. Perihan Kurt-Karakus (Environment Canada): Climate Change Impacts on Contaminant Behavior in the Polar Regions, Boston (MA) November 2012.
11. Chair North American SETAC with Dr Jordi Dachs (CSIC Barcelona, Spain): AQUAFATE—The Fate of Organic Pollutants in Aquatic Environments, Boston (MA) November 2012.
12. Chair North American SETAC: Black Carbon and its Role on the (Bio)Availability of Organic Contaminant, Boston (MA) November 2012.
13. Chair, EU-SETAC with Dr. Jordi Dachs (CSIC Barcelona, Spain) and Dr. Zhiyong Xie (GKSS, Germany): Environmental fate and bioaccumulation of organic pollutants in aquatic systems Milan (Italy), May 2011.
14. Discussion Leader 'Ocean and Coastal Water Quality', Gordon Research Conference Environmental Science: Water, June, 2010.
15. Chair, EU-SETAC with Dr. Jordi Dachs (CSIC Barcelona, Spain) and Dr. Mathijs Smit (StatOilHydro, Norway): 'Fate of Organic Pollutants in the marine Environment – From Estuaries to the Open Ocean and Arctic', Seville (Spain), May 2010.
16. Chair, EU-SETAC with Dr. Mathijs Smit (StatOilHydro, Norway): 'Polar marine ecotoxicology, risk assessment and monitoring', Gothemburg (Sweden), May 2009.
17. NOAA – International Research Workshop on Microplastic Marine Debris, Seattle (WA) September 2008, *presenter and member of steering committee.*
18. DoD - Workshop on bioavailability of contaminants in sediments and soils, Annapolis (MD), August 2008, *participant*.
19. US NSF- Sweden Workshop on scientific priorities on the ODEN, Stockholm (Sweden), February 2008, *participant*.
20. NOAA- Coastal Response Research Center – Workshop on fate of oil in ice, Tromso (Norway), January 2008, *presenter.*
21. Chair, Goldschmidt Conference with Dr. Kevin Jones (Lancaster University): 'Atmospheric Organic Pollutants: the role of and interplay with geochemistry' Koeln, Aug, 2007.
22. Collaboration with the College of the Bahamas (COB) – Teaching 14-day course 'Introduction to Marine Pollution' for COB faculty and students, May 2007.
23. ARMADA mentor: Gioya DeSouza-Fennelly - IS143- Roosevelt Middle School (New York, NY) *An East-West Atlantic Transect of Black Carbon and POPs*, June 2006.
24. Chair, North-American Society of Environmental chemistry and Toxicology (NA-SETAC) with Dr. Jordi Dachs (CSIC, Barcelona, Spain): 'Marine Environmental Chemistry of Organic pollutants' Baltimore (MD) Nov., 2005.
25. Chair, American Chemical Society's 230th Annual meeting with Prof. Bill Ball and Prof Howard Fairbrother (JHU): 'Characterization and Properties of Environmentally Relevant Black Carbon Particulates' in Washington (DC), Aug., 2005.
26. Hudson River Foundation Workshop – Research agenda for toxics in the Hudson River, July 2005, *participant.*
27. DFG Workshop on Biogeochemical gradients, sponsored by DFG, Tuebingen, Germany, May 2005, *participant.*
28. Chair, NA-SETAC with Dr. Matt MacLeod (ETH Zurich, Switzerland): 'Atmospheric transport and fate', 4th SETAC World, Portland (OR) 2004.

29. Chair, SETAC – German Language Branch with Dr. Remi Laame (NIOZ, The Netherlands): 'Contamination of the marine environment and air-sea exchange of trace substances'. Aachen (GER), 2004.
30. DFG-NSF co-sponsored meeting on Earth, Fire Water / Geosciences, Washington, D.C., March 2004, *participant.*
31. Chair, NA-SETAC with Dr. Jordi Dachs (CSIC, Barcelona, Spain) 'Global fate of persistent organic pollutants' Austin (TX) 2003.
32. Chair, NA-SETAC with Dr. Robert Burgess (U.S. EPA): 'The role of soot in the partitioning and bioavailability of organic pollutants' Salt Lake City (UT) 2002.

Expert reviewers
33. Selected as independent expert for review of the US-EPA – National Air Monitoring Dioxin Network (NAMDN), 2002.
34. Selected as independent expert for review of the US-EPA – Dioxin produced from burning oil at Sea, 2010.
35. Reviewer of UNEP Year Book 2011 section on 'Plastic Debris in the Ocean', 2010.
36. Selected as independent expert for review of the NOAA – Fate of dredged material placed in Confined Aquatic Disposal, 2011.
37. Tenure and promotion recommendation letter for Dr Jaward (South Florida University), Aug 2012
38. Tenure and promotion recommendation letter for Dr Vlahos (Connecticut University), Sept 2012
39. Promotion recommendation letter for Dr Mark Cantwell (U.S. EAP ORD), Aug 2015.
40. External committee member for promotion of Dr Beizhan Yan (Lamont Doherty Earth Observatory), Sept 2016.
41. Promotion recommendation letter for Dr Jans (City College of New York), Feb 2017.
42. Promotion recommendation letter for Dr Venier (Indiana University), May 2017.

Editorial, Journal, and Proposal Review Service:

1. Editorial Service:

Convener with R. Burgess (U.S. EPA) of special symposium issue in *Environ. Toxicol. Chem.* 'Role of Black Carbon in the Partitioning and Bioavailability of Organic Pollutants.' 2004
Convener with G. Lammel (MPI Chemistry Mainz, Germany) of special symposium issue in *Environ. Sci. Poll. Res.* 'Identifying the research needs in the global assessment of toxic compounds 10 years after the signature of the Stockholm Convention' 2012

Editor, *CLEAN – Air, Soil, Water*, Wiley-VCH	2007 – 2016
Editor, *Environmental Toxicology and Chemistry (SETAC,Wiley)*	2013 – present
Editorial board member, *EST Letters (ACS)*	2013 – present
Editorial board member, *Environmental Pollution (Elsevier)*	2013 – present
Editorial board member, *Environmental Toxicology and Chemistry*	2008 - 2010
Editorial board member, *Open Environmental & Biological Monitoring*	2007 - 2012
Editorial board member, *Atmospheric Pollution Research*	2009 - present
Editorial board member, *TheScientific World*	2011 - 2014

2. Journal Reviewer:
Environmental Science and Technology

Atmospheric Environment
Geophysical Research Letters
Journal of Geophysical Research - Atmospheres
Atmospheric Chemistry and Physics
Environmental Toxicology and Chemistry
Analytical Chemistry
Geology
Fuel
Chemosphere
Environmental Pollution
Journal of Atmospheric Chemistry
Limnology and Oceanography
Marine Pollution Bulletin
Deep-Sea Research
Science of the Total Environment
CLEAN – Soil, Air, Water
Internat. Journal of Earth Science – Geologische Rundschau
Marine Chemistry
Estuaries and Coasts
Global Biogeochemical Cycles
Critical Reviews in Environmental Science and Technology
Environmental Engineering Science
Limnology & Oceanography – Methods
Journal of Environmental Monitoring
Canadian Journal of Fisheries Sciences
Journal of Hazardous Materials
Terra Nova
International Journal of Environmental Analytical Chemistry
Biogeosciences
Oceanography
Environmental Science and Technology Letters
Water Research
Proceedings of the National Academy of Sciences
Environmental Science:

3. Grant Proposal Reviewer:

NSF Major Research Instrumentation
NSF Environmental Engineering
NSF Geobiology and Low Temperature Geochemistry
NSF Chemical Oceanography
NSF PIRES
CICEET
Hudson River Foundation
UK Natural Environmental Research Council
Norwegian Research Council

Swiss National Science Foundation
Canada's Northern Contaminants Program
Canadian Foundation for Climate and Atmospheric Sciences.
CUNY proposal review
Washington SeaGrant
Czech Science Foundation
Chilean Science Foundation
Portuguese Foundation for Science and Technology
Kuwait Foundation for the Advancement of Sciences
National Center for Science and Technology Evaluation Kazakhstan
Danish Council for Scientific Research
Chilean Antarctic Institute, INACH
Polish National Science Centre

Professional Memberships

- Society of Environmental Toxicology and Chemistry (SETAC)
- American Chemical Society (ACS)
- American Geophysical Union (AGU)
- Association of Environmental Engineering & Science Professors (AAESP)

Anthony R. Lupo

[redacted]

VITA

EDUCATION

Ph.D. - Atmospheric Science, Purdue University - West Lafayette, IN, 1995
M.S. - Atmospheric Science, Purdue University - West Lafayette, IN, 1991
B.S. - Meteorology, State University of New York at Oswego - Oswego, NY, 1988
A.S. - Mathematics/Science, Cayuga County Community College - Auburn, NY, 1986

PROFESSIONAL EXPERIENCE

2014 – 2015	Visiting Scholar Belgorod State University, Belgorod RU 308015.
2009 - present:	Professor, Department of Soil, Environmental, and Atmospheric Science, University of Missouri - Columbia, Columbia, Missouri 65211.
2008 – 2014	Chairman, Department of Soil, Environmental, and Atmospheric Sciences.
2003 - 2009:	Associate Professor, Department of Soil, Environmental and Atmospheric Sciences, University of Missouri – Columbia, Columbia, Missouri 65211.
2002 – 2008	Director of Graduate Studies, Atmospheric Science, Soil, Environmental, and Atmospheric Science.
2002 – 2005	Program Leader. Atmospheric Science.
1997 - 2003:	Assistant Professor, Department of Soil and Atmospheric Sciences, University of Missouri - Columbia, Columbia, Missouri 65211.
1995 - 1997:	Postdoctoral Research Associate, Department of Earth and Atmospheric Sciences, The University at Albany / State University of New York, Albany, New York 12222.

1989 - 1995 :	Research Assistant, Department of Earth and Atmospheric Sciences, Purdue University, West Lafayette, Indiana 47907.
1990 - 1991 :	Teaching Assistant, Atmospheric Dynamics II, Atmospheric Dynamics II Lab, and Forecasting Laboratory, Purdue University, West Lafayette, Indiana 47907.
1992 - 1993 :	Teaching Assistant, Survey of Meteorology, Survey of Meteorology Laboratory, Purdue University, West Lafayette, Indiana 47907.

HONORS AND MEMBERSHIPS (In academic, professional, and scholarly societies)

- Fulbright Specialist Roster 4/2016 – present. Fulbright Specialist Proposal Funded (3/2017)
- Fulbright Teaching / Research Scholar Belgorod University, Belgorod, Russia) 2014 – 2015.
- Won the College of Science (Dept of Earth, Atmospheric, and Planetary Sci) Outstanding Alumni Award Purdue University 10/11/2013
- Nominated to serve on the Board of Natural Resources (BNR) Science Roadmap for Natural Resources – Committee (national).
- Chosen to be part of the US-Russian Presidents Climate Subgroup of the Science and Technology Working Group (Fall 2011-2014 – group disbanded).
- MU Professor of the Year Award (May, 18 2010) (Winners go on to national competition sponsored by Carnegie foundation)
- Won the Missouri Academy of Science Most Distinguished Scientist Award, April 2009
- Won a Kemper Teaching Award, April 2008. This is the highest award a college-level teacher can win in Missouri (Honorarium $10,000.00)
- Inducted into the CAFNR teaching academy, April 2008 (duties: mentor two younger faculty on teaching).
- Won the College of Agriculture food and Natural Resources (CAFNR) Outstanding undergraduate Advisor award, ($1,000.00 honorarium) April 2008

- Selected for the LEAD21 program (class of 2008 – 2009). This is a program with national reach for leadership training for future leaders and adminstrators in academics.

- Acknowledged as part of the IPCC which shared the Nobel Peace Prize with Mr. Albert Gore, Jr., October 2007

- Won the CAFNR Senior level teaching award, ($1,000.00 honorarium) April 2006

- Won the MU Chapter of Gamma Sigma Delta - Teaching Award of Merit; April 2005

- Selected for the 3rd CAFNR Teaching Scholars Program 2003 – 2006.

- Fulbright Research Scholar (2003 – 2004 – to Russian Academy of Sci. / summer 2004)

  - American Meteorology Society

    - Associate Editor, Monthly Weather Review (2000 – 2003, 2007 – 2009)
    - Certified Consulting Meteorologist #660
      - Serving on the Board of CCM (February 2014 – present)
      - Vice Chair 2016, Chair 2017.
    - Nominated for Fellow (May 2008, May 2014)
    - University Representative, Weather Coalition
    - Member, Network of Networks, Ad Hoc Committee – Metadata (2009-2010)
    - Member, Ad Hoc Committee on Uncertainty in Forecasts (ACUF 2003-2009)
    - Member, THORPEX working group six (blocking 2003-2014).
    - Member, Ad Hoc Committee on Climate Certification (2016-present)
    - Member, Space Weather Certification Committee (2017-present)

  - National Council of Industrial Meteorologists
    - Board of Directors 3/17 - present

- Sigma Xi Honor Society

  - President, MU Chapter 2002 – 2004, 2008-2009
  - Vice President, MU Chapter 2001 – 2002, 2004-2005, 2007-2008
  -Secretary 2005-2007, 2009
  -Treasurer, 2009-present
  -Elected as Associate Director of Research and Doctoral Constituency, SX National Dec 2016 – June 2018

- Phi Kappa Phi Honor Society

- Fellow, Royal Meteorological Society

- Missouri Academy of the Sciences

    - Chair, Atmospheric Sciences Section (2000 - 2002).
    - Editor, Transactions of the Missouri Academy (2002 – 2006)
    - Elected Vice President for 2008 – 2009.
    - President Elect for 2009 – 2010
    - President for 2010-2011
    - Past President for 2011-2012
    - Fellow, 2013

- American Geophysical Union

- European Geophysical Union

- MU Administrative Representative to UCAR – NCAR (2003 – present)

- MU representative on the Board on Oceans and Atmospheres of the National Association of State Universities and Land-Grant Colleges.

- UCAR/UNIDATA Contract Contact point for the University of Missouri (1998 – 2003)

- Member, National Weather Association

    - Committee member: Weather Analysis and Forecasting Committee (2002 – 2009)
    - Committee member: Education Committee (2006 – present)
    - Committee member: Publication Committee (2007 – present)
    - Associate Editor (2002 – 2009)
    - Editor, 2009 – 2013
    - Editor Emeritus 2013-2015
    - Wrote the Climate Section for the NWA seal exam (2016).

- Appointed to the University of Missouri Doctoral Faculty January 2000, reappointed 2005, 2010, 2015

- Member, Gamma Delta, Sigma, Honor Society of Agriculture

    - Historian, MU Chapter 2004 - 2005
    - President, MU Chapter 2003 - 2004
    - President Elect, MU Chapter 2002 – 2003
    - Secretary, MU Chapter 2001 - 2002

    - Editorial Board – Advances in Meteorology (2015 – present)
        - Atmosphere (2015 – present) Associate Editor-in-Chief (3/17 –present)
        - Pure and Applied Mathematics (2015-present)
        - Asian Journal of Environment and Ecology, Editorial Board

PUBLICATIONS

Peer Refereed Publications and Invited Book Chapters

Co-authors that are underlined were graduate students under my advisement.

Statistics as of 1 August 2017:
Scopus: 894 Citations in 573 articles, h = 15, top cited work: 142.
Web of Science: 948 Citations in 602 articles, h =15, top cited work: 142
ResearchGate Score: 32.99 Citations 1358 Pub Reads: 3534, h = 19 (166.22 Impact) (T:164)
Google Scholar: 2003 Citations, h = 23, i10 = 39, top cited work = 223

Refereed Publications and Book Chapters / Editor (107 total) (only those since 2007 shown)

Jensen, A.D., A.R. Lupo, I.I. Mokhov, and MG Akperov, 2017: Integrated Regional Enstropy And Block Intensity as a Measure of Kolmogorov Entropy, *submitted to Atmosphere, July 2017*

Rabinowitz, J.L., A.R. Lupo, P.S. Market, P.E. Guinan, 2017: The relationship between Atmospheric Rivers, HYSPLIT backward trajectories, upper-air soundings and heavy rainfall events in the North-Central Mississippi River Valley. *Submitted, Advances in Meteorology April 2017.*

Kutta, E, J.A. Hubbart, B.M. Svoma, T. Eichler, and A.R. Lupo, 2017: Symmetric and asymmetric components of anomalous tropospheric-Mean horizontal fluxes of latent and sensible heat associated with ENSO events of variable magnitude. *Under Revision, Atmospheric Research June 2017.*

Kutta, E, J.A. Hubbart, B.M. Svoma, T. Eichler, and A.R. Lupo, 2017: The influence of La Nina Nina events on tropospheric fluxes of sensible and latent heat using the ERA-Interim Reanalysis Project. *Submitted, Dynamics of Atmospheres and Oceans, March 2017*

Kutta, E, J.A. Hubbart, B.M. Svoma, T. Eichler, and A.R. Lupo, 2017: The influence of El Nino events on tropospheric fluxes of sensible and latent heat using the ERA-Interim Reanalysis Project. *Submitted, Weather and Climate Extremes, March 2017.*

Kastman, J.S., P.S. Market, N.I. Fox, A.L Foscato, and A.R. Lupo, 2017: Lightning and Rainfall Characteristics in Elevated versus Surface Based Convection in the Midwest that Produce Heavy Rainfall. *Atmosphere, Vol. 8 (2).*

Lupo, A.R., 2016: Chief Editor: *Recent Developments in Tropical Cyclone Dynamics, Prediction, and Detection*. ISBN 978-953-51-2702-4, Intech Publishers, Vienna. 248 pp. (*not counted in the total above*)

Sitnov, S., I.I. Mokhov, and A.R. Lupo, 2017: Ozone and water vapor anomalies during

atmospheric blocking events over European Russia in Spring and Summer 2010. *Atmospheric Environment, 164, 180-194.*.

Lupo, A.R., Y.C. Li, N.I. Fox, J.L. Rabinowitz, and M.A. Simpson, 2016: Sensitive Versus Rough Dependence in Initial Conditions in Atmospheric Flow Regimes. *Atmosphere,* **7,** 157; doi:10.3390/atmos7120157.

Kastman, J.S., P.S. Market, S.M. Rochette, A.R. Lupo, 2017: Assessing upper tropospheric jet streak proximity using the Rossby Radius of Deformation. *Atmosphere, 8(1), 2;* doi:10.3390/atmos8010002

Nunes, M.J., A.R. Lupo, M.G. Lebedeva, Y.G. Chendev, and A.B. Solovyov, 2016: The occurrence of extreme monthly temperatures and precipitation in two global regions. *Papers in Applied Geography, DOI: 10.1080/23754931.2017.1286253.*

Lebedeva, M.G., A.B. Solovyov, Y.G. Chendev, and A.R. Lupo, 2016: Bioclimatic potential of the Belgorod Region under modern conditions. *Submitted to Journal of Applied Geography August, 2016.*

Renken, J.D., J. J. Herman, T.R. Bradshaw, P.S. Market, and A.R. Lupo, 2016: The Utility of the Bering Sea and Typhoon Rules in Long Range Forecasting. *Under Revision, Journal of Operational Meteorology*

Chendev, Y.G., E.A. Terekhin, A.R. Lupo, J.A. Hubbart, T.J. Sauer, C.L. Burras, 2016: Recent afforestation in the Iowa River and Vorskla River basins: A comparative analysis of trends. *Forests, 7, doi:10.3390/f7110278.*

Jensen, A.D., A.R. Lupo, I. I. Mokhov, and M.G. Akperov, 2016: Future Atmospheric Blocking as Described by an Enstrophy Diagnostic in a Climate Model. *Under review International journal of Climatology, March 2017*

Henson, C.B., A.R. Lupo, P.S. Market, and P.E. Guinan, 2016: The Impact of ENSO and PDO-Related Climate Variability on Regional Missouri Crop Yields. *International Journal of Biometeorology. DOI 10.1007/s00484-016-1263-3*

Wang, Y, and A.R. Lupo, 2016: What does the APO mean? *Tellus A: Dynamic Meteorology and Oceanography, 68:1, 31779. http://dx.doi.org/10.3402/tellusa.v68.31779*

Newberry, R.G., A.R. Lupo, A.D. Jensen, and R.A. Rodriges-Zalipynis 2016: An Analysis of the Spring-to-Summer Transition in the West Central Plains for Application to Long Range Forecasting. *Atmospheric and Climate Science,* **6,** 375-393.

Matveyev, S.M., Chendev Yu.G., Lupo A.R., Hubbart J.A., Timashuk D.A., 2016: Climatic changes in the East-European forest-steppe and their effects on Scotch pine annual rings increment. *Pure and Applied Geophysics, DOI 10.1007/s00024-016-1420-y*

Chendev, Y.G., Lupo, A.R. Lebedeva, M.G., Borbukova, D.A, 2015; Regional Specificity of the Climate Evolution of Soils in the Southern Part of Eastern Europe in the Second Half of the Holocene. *Genesis and Geography of Soils, Eurasian Soil Science*, **48**, 1279-1291.

Lebedeva, M.G,, O.V. Krymckaya, A.R. Lupo, Y.G. Chendev, A.N. Petin, A. Solovyov, 2015: Trends in Summer Season Climate for Eastern Europe and Southern Russia in the Early 21st Century. *Advances in Meteorology, Special Issue: Large Scale Atmospheric Science, 2015 Volume 2015 (2015).*

Crandall, K.L, P.S. Market, A.R. Lupo, L.P. McCoy, R.J. Tillot, and J.J. Abraham, 2015: The application of diabatic heating in Q-vectors for the study of a midwest cyclone event. *Advances in Meteorology, Special Issue: LDAT15*.

Lupo, A.R., S.J. Colucci, I.I. Mokhov, and Y. Wang, 2015: Large-scale dynamics, anomalous flows, and teleconnections: 2015 Edition (Editorial / Review). *Advances in Meteorology, Special Issue: Large Scale Atmospheric Science, 2015 Volume 2015 (2015), Article ID 3. Chief Guest Editor, the others were my associates.*

Chendev, Y.G., Lupo, A.R. Lebedeva, M.G., Borbukova, D.A., 2015: Региональные Особенности Климатческой Эволюции Почв Южной Части Восточной Европы Во Второй Половине Голоцена, представлен на рассмотрение журнал почвоведение, (in English) Regional features in soil due to climate in the southern part of Eastern Europe during the second part of the Holocene, Journal of Soil Pedology, 2015.

Mokhov, I.I., A. V. Timazhev, and A.R.Lupo, 2014: Changes in atmospheric blocking characteristics within Euro-Atlantic region and Northern Hemisphere as a whole in the 21st century from model simulations using RCP anthropogenic scenarios. *Global and Planetary Change,* **122,**265-270.

Petin, A.N., Lebedeva, M.G., Krymskaya, O.V., Chendev, Y.G., Kornilov, A.G., and A.R. Lupo, 2014: Regional Manifestations of Changes in Atmospheric Circulation in the Central Black Earth Region (By the Example of Belgorod Region). *Advances in Environmental Biology, 8(10),* **2014,** 544-547.

Jensen, A.D., and A.R. Lupo, 2014: The Role of Deformation and Other Quantities in an Equation for Enstrophy as Applied to Atmospheric Blocking. *Dynamics of Atmospheres and Ocean,* **2014,** *http://dx.doi.org/10.1016/j.dynatmoce.2014.03.004*

Hubbart, J.A., E. Kellner, L. Hooper, E. Aldrich, N. I. Fox, P.E. Guinan, A.R. Lupo, P. S. Market, K. Stephan, and B. M. Svoma, 2014: Localized climate and surface energy flux alterations across an urban gradient in the Central U.S. Energies, *March, 2014.*

Lupo, A.R., I.I. Mokhov, Y.G. Chendev, M.G. Lebedeva, M. Akperov, and J.A. Hubbart, 2014: Studying summer season drought in western Russia. *Advances in Meteorology, Special Issue: Large Scale Atmospheric Science, 9 pp. Article ID 942027.*

Lupo, A.R., S.J. Colucci, I.I. Mokhov, and Y. Wang, 2014: Large-scale dynamics, anomalous flows, and teleconnections (Editorial / Review). *Advances in Meteorology, Special Issue: Large Scale Atmospheric Science, 2014 Volume 2014 (2014), Article ID 207413. Chief Guest Editor, the others were my associates.*

Sitnov, S.A., I.I. Mokhov, and A.R. Lupo, 2014: Evolution of the water vapor plume over Eastern Europe during Summer 2010 Atmospheric Blocking. *Advances in Meteorology, Special Issue: Large scale dynamics, anomalous flows, and teleconnections, 11pp Article ID 253953.*

Wang, Y, A.R. Lupo, J. Qin 2013: A Response in the ENSO Cycle to an Extratropical Forcing Mechanism During the El Nino to La Nina Transition. *Tellus A 2013, 65, 22431, http://dx.doi.org/10.3402/tellusa.v65i0.22431.*

Jensen, A.D. and A.R. Lupo, 2013: Using Enstrophy Based Diagnostics in an Ensemble for Two Blocking Events. *Advances in Meteorology, Special Issue: Large scale dynamics, anomalous flows, and teleconnections Atmospheric Science, 2013, 7pp, Article ID 693859.*

Jensen, A.D., and A.R. Lupo, 2013: Using Enstrophy Advection as a Diagnostic to Identify Blocking Regime Transition. *Quarterly Journal of the Royal Meteorological Society,* **139**, 2- 7. DOI: 10.1002/qj.2248

Lupo, A.R. (Author Ch 1), 2013: *Heartland Institute, 2013: Climate Change Reconsidered: 2013 The Interim Report of the Nongovernmental International Panel on Climate Change (NIPCC),* edited by Craig Idso, Ph.D., Robert M. Carter, Ph.D, and S. Fred Singer, Ph.D. (released 17 September 2013, 138 pp) – 10% (overall) 75% (Chapter).

Chendev, Y.G., A. R. Lupo, A. Petin, and M.G. Lebedeva, 2013: Influence of long and short term climatic changes to chernozem soils central chernozem region of Russia. *Papers in Applied Geography,* **36,** 156 – 164.

Market, P.S., S. Rochette, and A.R. Lupo, 2013: A Comparison of Modern and Historical Methods for Calculating Montgomery Steamfunction. *Atmospheric Science Letters,* **14,** 41-44.

Mokhov, I.I., M.G. Akperov, M.A. Prokofyeva, A.V. Timazhev, A.R. Lupo, H. Le Treut, 2012: Blockings in the Northern Hemisphere and Euro-Atlantic region: Estimates of changes from reanalyses data and model simulations. (In Russian: Блокинги в Северном полушарии и Евро-Атлантическом регионе: оценки изменений по данным реанализа и модельным расчетам). *Doklady,* **449,** 430-433.

Schnetzler, A.E., J.M. Glisan, A. Hussain, P.S. Market, and A.R. Lupo, 2012: A comparative study to quantify the Sensitive dependence in numerical models for a developing low in the Southern Plains. *Transactions of the Missouri Academy of Science,* **44**, 20 - 28.

Dawson, N.W., P.E. Guinan, and A.R. Lupo, 2012: A Long-Term Study of Tropical Systems Impacting Missouri. *Transactions of the Missouri Academy of Science,* **44,** 29 - 41.

Lupo, A.R., I.I. Mokhov, M.G. Akperov, A.V. Chernokulsky, and A. Hussain, 2012: A dynamic analysis of the role of the planetary and synoptic scale in the summer of 2010 blocking episodes over the European part of Russia. *Advances in Meteteorology, Vol. 2012 (2012), Article ID 584257, 11 pages*

Mokhov, I.I., A.R. Lupo, and M.A. Prokofyeva, 2012: Blockings Activity in the Northern Hemisphere: Tendencies of Change for Last Decades. Research Activity in Atmospheric and Oceanic Modeling World Meteorological Organization / Technical Document - No. 1064: 2.20 - 2.21

Lupo, A.R., R.S. Hayward, and G.W. Whitledge, 2012: Synchronization of fishes' temporal feeding patterns with weather in mid-Missouri. *Journal of Freshwater Ecology,* **27:3,** 419-428.

Lupo, A.R., N.B. Smith, P.E. Guinan, and M.D. Chesser, 2012: The Climatology of Missouri Region Dew Points and the Relationship to ENSO. *National Weather Digest,* **36,** 81-91. *(70%).*

Chendev, Y.G., A.N. Petin, and A.R. Lupo, 2012: Soils as indicators of climate change. *Geography, Environment, Sustainability (A publication of the Russian Academy – Moscow State University)* **1**, 4-17.

Lupo, A.R. (Co-Author Ch 1), 2011: *Heartland Institute, 2011: Climate Change Reconsidered: 2011 The Interim Report of the Nongovernmental International Panel on Climate Change (NIPCC),* edited by Craig Idso, Ph.D., Robert M. Carter, Ph.D, and S. Fred Singer, Ph.D. (released 29 August 2011) – 10% (overall) 50% (Chapter).

Ellrod, G., S. Harned, K. Lavin, A.R. Lupo, P. Roohr, 2011: National Weather Digest: More than three decades of service to the meteorological community. *National Weather Digest,* **35:2,** 163-168.

Wang, Y., X. Xu, A.R. Lupo, P. Li, and Z. Lin, 2011: The Remote Effect of the Tibetan Plateau on Downstream Flow in Early Summer. *Journal of Geophysical Research Atmospheres, 116, D19108, doi:10.1029/2011JD015979.*

Stambaugh, M.C., R. P. Guyette, E. R. McMurry, E.R. Cook, D.M. Meko, and A.R. Lupo, 2011: Drought duration and frequency in the U.S. Corn Belt during the last millennium (AD 992 - 2004). *Agricultural and Forest Meteorology,* **151,** 154-162.

Lupo, A.R., 2011: *Interannual and Interdecadal variability in hurricane activity*. *Hurricane Research*, ISBN 978-953-307-238-8, Intech Publishers, Vienna. (Book Chapter) Lupo, A.R. Book editor, Recent Hurricane Research: Climate, Dynamics, and Societal Impacts,

616 pp. (100%) (1 June 2017) Book is #1 in downloads, #1 is Web of Science citations in Atmospheric Science and Oceanography.

Hussain, A., and A.R. Lupo, 2010: Scale and stability analysis of blocking events from 2002-2004: A case study of an unusually persistent blocking event leading to a heat wave in the Gulf of Alaska during August 2004. *Advances in Meteorology,* Volume 2010, Article ID 610263, 15 pages doi:10.1155/2010/610263.

Birk, K., A.R. Lupo, P.E. Guinan, and C.E. Barbieri, 2010: The interannual variability of Midwestern temperatures and precipitation as related to the ENSO and PDO. *Accepted pending revision Atmofera,* **23**, 95 - 128.

Moon, J.T., P.E. Guinan, D. J. Snider, and A.R. Lupo, 2009: CoCoRaHs in Missouri: Four years later, the importance of observations. *Transactions of the Missouri Academy of Science,* **43,** 7-18.

Grathwohl, K.T., A.R. Lupo, and P. S. Market, 2009: A Possible Heat Island Effect from a Small Rural Community. *Transactions of the Missouri Academy of Science,* **43,** *33* - 38

Lupo, A.R. (Contributing Author Ch 6 only), 2009: *Heartland Institute, 2009: Climate Change Reconsidered: The Report of the Nongovernmental International Panel on Climate Change (NIPCC),* edited by Craig Idso, Ph.D., and S. Fred Singer, Ph.D. (released 2 June 2009)

Wang, Y., and A.R. Lupo, 2009: An extra-tropical Air-Sea Interaction over the North Pacific in Association with a preceding El Nino Episode in Early Summer. *Monthly Weather Review,* **137,** 3771 - 3785.

Market, P.S., G. Dolif Neto, A.E. Becker, B.P. Pettegrew, C.J. Melick, C.J. Schultz, P. I. Buckley, J.V. Clark, A.R. Lupo, R. Holle, N. Demetriades, and C. Barbieri 2008: A Comparison of Two Cases of Low-Latitude Thundersnow. *Atmosfera,* **22,** 331- 356.

Buckley, P. I., P.S. Market, A.R. Lupo, and N.I. Fox, 2008: COHIX: Further studies of the heat island associated with a small Midwestern city. *Atms. Sci. Lett.,* **194**, 226 - 230. DOI: 10.1002/asl.194

Lupo, A.R., T. Hagen, J. Glisan, E. Aldrich, P.E. Guinan, and P.S. Market, 2008: The presentation of precipitation information in television broadcasts: What is normal? *Nat. Wea. Dig.,* **32:2**

Tilly, D.E., A.R. Lupo, and C.J. Melick, P.S. Market 2008: Calculated height tendencies in a Southern Hemisphere blocking and cyclone event: The contribution of diabatic heating to block intensification. *Monthly Weather Review,* **136,** 3568–3578.

Lupo, A.R., 2008: Reply to: "In Defense of a Theory of Anthropogenic Global warming**".** *Journal of Missouri Medicine,* **105:3**, 186.

Lupo, A.R., 2008: Anthropogenic Global Warming: A Skeptical point of view. (An invited review article for): *Journal of Missouri Medicine,* **105:2**, 22-26.

Melick, C.J., L.L. Smith, B.P. Pettegrew, A.E. Becker, P.S. Market, and A.R. Lupo, 2008: Investigation of Stability Characteristics of cold-season convective precipitation events by utilizing the growth rate parameter. *JGR Atmospheres,* **113,** D08108, doi:10.1029/2007JD009063, 2008.

Zuki, Md. Z., and A.R. Lupo, 2008: The interannual variability of tropical cyclone activity in the southern South China Sea. *J. Geophys. Res.,* **113,** D06106, doi:10.1029/2007JD009218 – 14 pp.

Lupo, A.R., E. P. Kelsey, D.K. Weitlich, N.A. Davis, and P.S. Market, 2008: Using the monthly classification of global SSTs and 500 hPa height anomalies to predict temperature and precipitation regimes one to two seasons in advance for the mid-Mississippi region. *National Weather Digest,* **32:1**, 11-33.

Lupo, A.R., T.K. Latham, T. Magill, J.V. Clark, C.J. Melick, and P.S. Market, 2007: The Interannual Variability of Hurricane Activity in the Atlantic and East Pacific Regions. *National Weather Digest,* **32:2**, 119-135.

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Lupo, A.R., Kelsey, E.P., D.K. Weitlich, I.I. Mokhov, F.A. Akyuz, Guinan, P.E., J.E. Woolard, 2007: Interannual and interdecadal variability in the predominant Pacific Region SST anomaly patterns and their impact on a local climate. *Atmosfera,* **20,** 171- 196.

Luo, D., and A.R. Lupo, 2007: Dynamics of eddy-driven low-frequency dipole modes. Part II: Free mode characteristics of NAO and diagnostic study. *Journal of the Atmospheric Sciences,* **64,** 3 - 28.

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Non-Refereed Publications (1)

Lupo, A.R., 2014: Theory of the General Circulation: The El Nino. *Selected Lectures from the Faculty at Belgorod State University, Belgorod Russia 2014. (English and in Russian).*

Refereed Abstracts, conference papers, comments, letters to the editor (4)

Renken, J.S., J. Herman, D. Parker, T. Bradshaw, and A.R. Lupo, 2016: Using the Bering Sea and Typhoon Rules to Generate Long Range Forecasts II. Case Studies. *Climate Prediction, Science and Technology Conference Digest*, **40,** 51-55. http://weather.missouri.edu/gcc/40cdpwdigest.pdf

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Non-refereed publications: Conference Preprints (247)

I am the author or co-author on 247 conference preprint papers or conference presentations and only the most recent (since 2007) will be listed here. A complete list can be provided upon request.

Bahtiyar, EFE, A.R Lupo, I Sezen, and A. Deniz, 2017: Investigation of the Effects of Blocking on Temperature in Turkey between 1987 – 2016. *2nd Electronic Conference on Atmospheric Science, MDPI, 16-31 July 2017.*

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Lupo, A.R., A.D. Jensen, I.I Mokhov, and A.V. Timazhev, 2017: Changes in blocking characteristics during the first part of the 21st Century. *2nd Electronic Conference on Atmospheric Science, MDPI, 16-31 July 2017.*

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Hemisphere blocking using a ensemble mean forecast system. *2nd Electronic Conference on Atmospheric Science, MDPI, 16-31 July 2017.*

Rabinowitz, J.L., and A.R. Lupo, 2017: An Investigation of Intensity Change Mechanisms Associated with Intense Atlantic and Eastern Pacific Hurricanes. *Conference on Weather Analysis and Forecasting. Seattle, WA, 21-27 January, 2017.*

White, L.D., B.M. Svoma, P.E. Guinan, A.R. Lupo, and J.D. Wood, 2017: Small-scale Variations of Heat Index and dewpoint from Mobile Transects. *Conference on Weather Analysis and Forecasting. Seattle, WA, 21-27 January, 2017.*

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Deichman, C.L., R.J. Kremer, and A.R. Lupo, 2016: Over 1000 Gal of Liquid Biofuels per Acre from 4 Different Corn Hybrids on a Gilford Fine Sandy Loam. Resilience Emerging from Scarcity and Abundance, *Meeting of the American Society of Agronomy, 6-9 November, 2016, Phoenix, AZ.*

Lebedeva, M., Y.G. Chendev, A.B. Solovyov and A.R. Lupo, 2016: Bioclimatic Potential of the Belgorod Region Under Modern Conditions. *39th Applied Geography Conference. 26-28 October, 2016,* Louisville, KY

Rabinowitz, J.L., and A.R. Lupo, 2016: Assessing the Influences of Atmospheric Dynamics on Heavy Rainfall Potential Across the North-Central Mississippi River Valley. *39th Applied Geography Conference. 26-28 October, 2016,* Louisville, KY

Nunes, M.A., A.R. Lupo, Y.G. Chendev, and M. Lebedeva, 2016: The Occurrence of Extreme Monthly Temperatures and Precipitation in Two Global Regions. *39th Applied Geography Conference. 26-28 October, 2016,* Louisville, KY

Lupo, A.R., Y.C. Li, J.L. Rabinowitz, M.J. Simpson, N.I. Fox, 2016: Sensitive Versus Rough Dependence on Initial Conditions in Atmospheric Flows: A Case Study Using RADAR Images. *39th Applied Geography Conference. 26-28 October, 2016,* Louisville, KY

Rabinowitz, J.L., and A.R. Lupo, 2016: A dynamical investigation of intensificiation change mechanisms associated with intense Atlantic and Eastern Pacific hurricanes. *Transactions of the Missouri Academy of Science,* **50**

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Lupo, A.R., and Y. Li, 2016: Sensitive versus rough dependence on initial conditions in atmospheric flows. *Transactions of the Missouri Academy of Science*, **50**

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Nunes, M.J., A.R. Lupo, M.G. Lebedeva, and Y.G. Chendev, 2015: The occurrence of extreme monthly temperatures in two global regions. Problems in Nature management and the Ecological Situation of European Russia and Adjacent Countries. Belgorod, Russia 12 – 16 October.

Quang, P., A. Thompson, C. Costello, C. Baffaut, J. Sadler, and A.R. Lupo, 2015: Evaluation of climate and land use changes on hydrologic processes in the Salt River Basin, Missouri, United States. International SWAT Conference & Workshops Purdue University, USA, 12-16 October, 2015.

Akperov, M.G., V.V. Semenov, I.I. Mokhov, and A.R. Lupo, 2015: The impact of the Arctic Sea Ice retreat on Extratropical cyclones and anticyclones over Northern Eurasia: atmospheric model simulations. Annual Meeting of the European Geophysical Union, Vienna, Austria, 12- 17 April, 2015.

Rabinowitz, J., Sadler, J, and A.R. Lupo, 2015: Rainfall return periods from a set of rain gauges in North-Central Missoui. Geo-ecology and Rational Use of Subsoil: From Science to Practice, International Conference for Young Scientists, April 6 – 10, Belgorod, RU

Jensen, A.D., A.R. Lupo, I.I. Mokhov, M.G. Akperov, 2015: The utility of enstrophy based diagnostic tools in examining atmospheric blocking. *Meeting of the International Union of Geodesy and Geophysics, International Association of Meteorology and Atmospheric Science. Prague*, Czech Republic, 22 June – 2 July.

Sitnov, S.A., Mokhov, I.I., Lupo, A.R., and A. V Timazhev, 2014: Blocking anticyclone over European Russia in the summer of 2010: interplay between atmospheric dynamics and composition. 2nd Gregory Leptoukh Giovanni Online Workshop 10 – 14 November, 2014 NASA Goddard Earth Sciences Data and Information Services Center.

Renken, J.D., J. Herman, D. Parker, T. Bradshaw, and A.R. Lupo, 2014: Using the Bering Sea and Typhoon Rules to Generate Long-Range Forecasts. *The 39th Annual Meeting of the Climate Diagnostics Prediction Workshop (CDPW),* 18-20 October, 2014, St. Louis, MO.

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Newberry, R.G. and A.R. Lupo, 2014: An analysis of the spring-to-summer transition in the West Central Missouri Plains. *The 39th Annual Meeting of the National Weather Association, 18-23 October, 2014, Salt Lake City, UT.*

Nunes, M., J. Bell, and A.R. Lupo, 2014: The occurrence of extreme weather in the Midwest USA. *Transactions of the Missouri Academy of Science, 48.*

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Lupo, A.R., and A.D. Jensen, 2013: Using enstrophy transport as a diagnostic to identify flow regime transformation. The 13th Davos Atmosphere and Cryosphere Assembly, International Union of Geodesy and Geophysics, 8-12 July, 2013, Davos Switzerland

Chendev, Y.G., A.R. Lupo, A.N. Petin, and M.G. Lebedeva, 2013: The Influence of long- and short-term climatic changes to chernozem soils: Central Chernozem Region of Russia. The 36th Conference on Applied Geology and Geography, Annapolis MD 30 October – 1 November, 2013.

Lebedeva, M.G., A.R. Lupo, Y.G. Chendev, O.V. Crymskaya, A.B. Solovyov, 2013: Blocking anticyclones as a factor of dangerous hydrometeorological phenomena in the centre of Eastern Europe (regional manifestations).

Ebner, N.W., and A.R. Lupo, 2014: A survey of Emergency Management practices during severe weather. *The 41st AMS Conference on Broadcast Meteorology, 2nd Conference on Weather Warnings and Communications, 26-28 June, Nashville, TN*

Ebner, D.M., and A.R. Lupo, 2014: A study of the connection between TV meteorologists and their viewers during severe weather broadcasts. *The 41st AMS Conference on Broadcast Meteorology, 2nd Conference on Weather Warnings and Communications, 26-28 June, Nashville, TN*

Bell, J.R., and A.R. Lupo, 2013: The Unusual Warmth of March 2012: Some Possible Causes. *25th Conference on Climate and Climate Variability, 93rd Meeting of the AMS, Austin, TX, January 6-10, 2013*.

Jensen, A.D., A.R. Lupo, and I.I. Mokhov, 2013: Using Enstrophy Transport as a Diagnostic to Identify Flow Regime Transformation. *25th Conference on Climate and Climate Variability, 93rd Meeting of the AMS, Austin, TX, January 6-10, 2013*.

Soelle, C.B., E.M. Blizzard, A.R. Lupo, 2012: The Effect of Topography on Precipitation Amounts in Missouri. *The 37th Annual Meeting of the National Weather Association, Madison, WI, 6- 10 October, 2012*

Bell, J.R., and A.R. Lupo, 2012: The unusual warmth of March 2012: A historical perspective. *The 37th Annual Meeting of the National Weather Association, Madison, WI, 6- 10 October, 2012*

Lupo, A.R., I.I. Mokhov, Y.G. Chendev, M.G. Lebedova, J.A. Hubbart, 2012: Forecasting summer season drought in Western Russia. Conference on Climate Change in Missouri: Gaining the Advantage. June 6-8, Columbia, MO

Soelle, C.B., E.M. Blizzard, A.R. Lupo, 2012: The Effect of Topography on Precipitation Amounts in Missouri. *Transactions of the Missouri Academy of Science, 46*

Lupo, A. R., I.I. Mokhov, Y.G. Chendev, M.G. Lebedova, and J.A. Hubbart, 2012:. Forecasting summer season drought in Western Russia *Transactions of the Missouri Academy of Science, 46*

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Market, PS, R.A. Wolf, J. Haase, A. R. Lupo, J. Gagan, and C. C. Crowe. Studies of dry airstreams in mature extratropical cyclones with and without comma heads. *AMS 25th Conference on Weather Analysis and Forecasting (WAF) and the 21st Conference on Numerical Weather Prediction (NW) Jointly with the 46th Canadian Meteorological and Oceanographical Society (CMOS) Congress 2012, 29 May–1 June 2012, Montreal, Quebec, Canada*

Lupo, A.R., and P. Macy, 2011: 150th Anniversary of the American Civil War: Weather during the summer of 1861. Bulletin of the Missouri Academy of Science, 40:1, 1-4.

Mokhov, I.I, M.G. Akperov, A.R. Lupo, A.V. Chernokulsky, and A.V. Timazhev, 2011: Regional climate extremes in Northern Eurasia associated with atmospheric blockings: Interannual variations and tendencies of change. *Annual meeting for the American Geophysical Union 1 – 4 December, 2011.*

Kozlowski, D.M., and A.R. Lupo, 2011: Measuring forecast performance during blocking and non-blocking periods in Missouri during the 2010-2011 cold season. *The 36th Annual Meeting of the National Weather Association, Birmingham, AL, 15- 20 October, 2011.*

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Anip, M.H., and A.R. Lupo, 2011: A climatological study of the Borneo Vortex during Northern Hemisphere Winter Monsoon. *The 36th Annual Meeting of the National Weather Association, Birmingham, AL, 15- 20 October, 2011.*

Bogowith, M., E. Aldrich, and A.R. Lupo, 2011: The verification of weather forecasts as compared to numerical modeling and climatology: Seasonal and ENSO variations. *The 36th Annual Meeting of the National Weather Association, Birmingham, AL, 15- 20 October, 2011.*

Anip, M.H., and A.R. Lupo, 2011: A climatological study of the Borneo Vortex during Northern Hemisphere Winter Monsoon. WCRP Open Science Conference, 24-28 October 2011, Denver, CO.

Lupo, A.R., J.J. Abraham, Mokhov, I.I., A.A. Vetrova, and M.G. Akperov, 2011: Summer season drought in Eastern Europe and Western Russia. *The 19th Conference on Applied Climatology / 36th Annual meeting of the American Association of State Climatologists, 18 – 21 July, 2011, Asheville, NC (75%)*

Mokhov, I.I., A.R. Lupo, A.A. Vetrova, and M.G. Akperov, 2011: Atmospheric blockings and associated climate extremes in the Northern Hemisphere detection of change and attribution of causes. *The 19th Conference on Applied Climatology / 36th Annual meeting of the American Association of State Climatologists, 18 – 21 July, 2011, Asheville, NC. (33%)*

Bogowith, M., and A.R. Lupo, 2011: The verification of weather forecasts, numerical models, climatology, and variations in ENSO cycles in forecast accuracy. *Transactions of the Missouri Academy of Science*, **45** (100%)

Aldrich, E.,and A.R. Lupo, 2011: The verification of weather forecasts compared to numerical modeling, climatology, human forecasts and seasonal variations. *Transactions of the Missouri Academy of Science*, **45** (100%)

Mohd. Anip,M. H., and A.R. Lupo, 2011: A climatological study of the Borneo Vortex during the Northern Hemisphere Winter Monsoon. *Transactions of the Missouri Academy of Science*, **45** (100%)

Lupo, A. R., J.J. Abraham, and I.I. Mokhov, 2011: Summer season drought in Eastern Europe and Western Russia. *Transactions of the Missouri Academy of Science*, **45** (80%)

Kozlowski, D.M., and A.R. Lupo, 2011: Measuring forecast performance during blocking and non-blocking periods in Missouri during the 2010-2011 cold season. *Transactions of the Missouri Academy of Science*, **45** (100%)

Ellrod, G.P., A.R. Lupo, S. Harned, P. Roohr, and K. Lavin, 2011: The National Weather Digest: More than three decades of service to the NWA. *The 36th Annual Northeast Storms Conference, 11 – 13 March, 2011, Taunton, MA* (35%)

Mokhov, I.I., M.G. Akperov, A.R. Lupo, and A.A. Vetrova, 2011: Atmospheric blockings and associated climate extremes in the Northern Hemisphere: Detection of change and attribution of causes. IUGG Assembly, Melbourne, Australia, June 28 – 7 July, 2011. (30%)

Ellrod, G.P., A.R. Lupo, S. Harned, P. Roohr, and K. Lavin, 2010: The National Weather Digest: More than three decades of service to the NWA. *The 35th Conference of the National Weather Association, 2 – 7 October, 2010, Tucson, AZ* (20%)

Lupo, A.R., R.S. Hayward, and G.W. Whitledge, 2010: Sychronization of fishes' temporal feeding patterns with weather in Mid-Missouri. *The 35th Conference of the National Weather Association, 2 – 7 October, 2010, Tucson, AZ* (50%)

Madden, J.M., J.T. Moon, and A.R. Lupo, 2010: The Early Civil War Battles in Southwest Missouri 1861: How Weather May Have Influenced the Outcome. *The 35th Conference of the National Weather Association, 2 – 7 October, 2010, Tucson, AZ*

Abraham, J.J., K.L. Crandall, L.P. McCoy, R.J. Tillott, P.S. Market, and A.R. Lupo, 2010: The application of diabatic heating in Q-vectors for the study of a midwest cyclone event. *The 35th Conference of the National Weather Association, 2 – 7 October, 2010, Tucson, AZ* (80%).

Madden, J.M., J.T. Moon, and A.R. Lupo, 2010: The Early Civil War Battles in Southwest Missouri 1861: How Weather May Have Influenced the Outcome. *Transactions of the Missouri Academy of Science*, **44** (100%)

Weber, E.E., and A.R. Lupo, 2010: The climatological character of air pollution events in the central plains states. *Transactions of the Missouri Academy of Science*, **44** (100%)

Lupo, A.R., R.S. Hayward, and G.W. Whitledge, 2010: Sychronization of fishes' temporal feeding patterns with weather in Mid-Missouri. *Transactions of the Missouri Academy of Science*, **44** (50%)

Weber, E.E., and A.R. Lupo, 2010: The climatological character of air pollution events in the central plains states. *The 18th Conference on Applied Climatology, 90th Annual meeting of the American Meteorological Society, 17 – 21 January, 2010, Atlanta, GA*

Smith, N.B., Guinan, P.E., and A.R. Lupo, 2010: A study of the impact of the ENSO cycle on Missouri dew points. *The 22nd Conference on Climate Variability, 90th Annual meeting of the American Meteorological Society, 17 – 21 January, 2010, Atlanta, GA***.**

Smith, N.B., Guinan, P.E., and A.R. Lupo, 2010: A study of the impact of the ENSO cycle on Missouri dew points. *The 1st Symposium for Agroforestry, 6 January, 2010, Columbia, MO.*

Guyette, R., Stambaugh, M, and A.R. Lupo, 2009: A 14,000-year record of tree growth and 13C in a mid-continental agricultural landscape coupled with oceanic climate proxies. Past Global Changes (PAGES) Open Science Meeting, Corvallis, OR. July 8-11, 2009.

Hendin, A., A.R. Lupo, and P.S. Market, 2009: The verification of short to long-range forecasts using simple methods. *The 34th Conference of the National Weather Association, 17 – 22 October, 2009, Norfolk, VA*

Moon, III, J.T., P.E. Guinan, D. Snider, and A.R. Lupo, 2009: CoCoRaHS in Missouri: Three years later, the importance of observations. *The 34th Conference of the National Weather Association, 17 – 22 October, 2009, Norfolk, VA***.**

Smith, N.B., Guinan, P.E., and A.R. Lupo, 2009: A study of the impact of the ENSO cycle on

Missouri dew points. *The 34th Conference of the National Weather Association, 17 – 22 October, 2009, Norfolk, VA***.**

Fritz, C.L., Market, P.S., Fox, N.I., Skibinski, S., and A.R. Lupo, 2009: A Radiosonde System for the University of Missouri: An Informal Study of a Decaying Thunderstorm near Columbia, Missouri. *The 34th Conference of the National Weather Association, 17 – 22 October, 2009, Norfolk, VA***.**

Market, P.S., K.L. Crandall, M.H.M. Anip, S.P. Riley Z. Paul, and A.R. Lupo, 2009: Analysis of a Cold Occluded Cyclone. The 23rd Conference Weather Analysis and Forecasting, AMS, 1 – 5 June, 2009, Omaha, NE**.**

Fritz, C.L., Market, P.S., Fox, N.I., Skibinski, S., and A.R. Lupo, 2009: A Radiosonde System for the University of Missouri: An Informal Study of a Decaying Thunderstorm near Columbia, Missouri. The 23rd Conference Weather Analysis and Forecasting, AMS, 1 – 5 June, 2009, Omaha, NE**.**

Market, P.S., K.L. Crandall, M.H.M. Anip, S.P. Riley Z. Paul, and A.R. Lupo, 2009: Analysis of a Cold Occluded Cyclone. The 45th Annual Meeting of the Missouri Academy of Science, 24 – 25 April, 2009, Maryville, MO *Transactions of the Missouri Academy of Science*, **43.**

Fritz, C.L., N.I. Fox, A.R. Lupo, 2009: Formulating a correction factor for the effect of sheltering on wind speed observations. The 45th Annual Meeting of the Missouri Academy of Science, 24 – 25 April, 2009, Maryville, MO *Transactions of the Missouri Academy of Science*, **43.**

Madden, J.M., Moon, J.T, and A.R. Lupo, 2009: The battle of Wilson's Creek 1861: How weather may have influenced the outcome. The 45th Annual Meeting of the Missouri Academy of Science, 24 – 25 April, 2009, Maryville, MO *Transactions of the Missouri Academy of Science*, **43.**

Smith, N.B., Guinan, P.E., and A.R. Lupo, 2009: A study of the effects of ENSO cycles on Missouri dew points. The 45th Annual Meeting of the Missouri Academy of Science, 24 – 25 April, 2009, Maryville, MO *Transactions of the Missouri Academy of Science*, **43.**

Schaumann, J.S., J. Kastman, and A.R. Lupo, 2009: Quantitative approach to forecasting severe hail supporting the one inch severe hail initiative. The 45th Annual Meeting of the Missouri Academy of Science, 24 – 25 April, 2009, Maryville, MO *Transactions of the Missouri Academy of Science*, **43.**

Hawkins, C.L, and A.R. Lupo, 2009: A Potential Vorticity diagnosis of a Southern Hemisphere blocking event. The 45th Annual Meeting of the Missouri Academy of Science, 24 – 25 April, 2009, Maryville, MO *Transactions of the Missouri Academy of Science*, **43.**

Dawson, N.W., Guinan, P.E., and A.R. Lupo, 2009: A long-term study of tropical systems

impacting Missouri. The 45th Annual Meeting of the Missouri Academy of Science, 24 – 25 April, 2009, Maryville, MO *Transactions of the Missouri Academy of Science*, **43.**

Fritz, C.L., Market, P.S., Fox, N.I., Skibinski, S., and A.R. Lupo, 2009: A Radiosonde System for the University of Missouri: An Informal Study of a Decaying Thunderstorm near Columbia, Missouri. The 45th Annual Meeting of the Missouri Academy of Science, 24 – 25 April, 2009, Maryville, MO *Transactions of the Missouri Academy of Science*, **43.**

Moon, III, J.T., P.E. Guinan, and A.R. Lupo, 2009: CoCoRaHS in Missouri: Three years later, the importance of observations. The 45th Annual Meeting of the Missouri Academy of Science, 24 – 25 April, 2009, Maryville, MO *Transactions of the Missouri Academy of Science*, **43.**

Calvert, K. T., C. Gravelle, J. Gagan, D. Gaede, A. Foster, D. Albert, and A.R. Lupo, 2009: Interannual variability of snowfall events in southwest Missouri and snowfall to liquid water equivalents at the Springfield WFO: A follow-up study. The 45th Annual Meeting of the Missouri Academy of Science, 24 – 25 April, 2009, Maryville, MO *Transactions of the Missouri Academy of Science*, **43.**

Hussain, A., and A.R. Lupo, 2009: Scale and Stability Analysis of Selected Atmospheric Blocking Events. *The 21st Conference on Global Climate Change. 89th Annual Meeting of the American Meteorological Society. 14 – 19 January, 2009, Phoenix, AZ (75%*)

Hussain, A., and A.R. Lupo, 2009: Scale and Stability Analysis of an Unusually Prolonged and a Moderately Extreme Blocking Event Leading to Heat Wave in Gulf of Alaska During August 2004. *The 21st Conference on Global Climate Change. 89th Annual Meeting of the American Meteorological Society. 14 – 19 January, 2009, Phoenix, AZ (75%*)

Perrin, B.L, K.B. Hughes, and A.R. Lupo, 2009: Can large scale climate controls help predict seasonal tornado activity? *The 21st Conference on Global Climate Change. 89th Annual Meeting of the American Meteorological Society. 14 – 19 January, 2009, Phoenix, AZ (70%*)

Limpert, G.L., B.L. Perrin, and A.R. Lupo, 2009: Simulating the effects of climate change on parameters for tropical cyclone development in the Atlantic basin. *The 21st Conference on Global Climate Change. 89th Annual Meeting of the American Meteorological Society. 14 – 19 January, 2009, Phoenix, AZ (80%*)

Perrin, B.L, G. L. Limpert, and A.R. Lupo, 2009: Modeling the ability of the atmosphere to regain an equilibrium state following carbon dioxide-induced forcing. *The 21st Conference on Global Climate Change. 89th Annual Meeting of the American Meteorological Society. 14 – 19 January, 2009, Phoenix, AZ (80%*)

Lupo, A.R., Guinan, P.E, Weitlich, D.K., Kelsey, E.P., Market, P.S., and N.A. Davis, 2008: Using the Monthly Classification of Global SSTs and 500 hPa Height Anomalies to Predict Temperature and Precipitation Regimes One to Two Seasons in Advance for the

Mid-Mississippi region. *Preprints of the 15th Conference on Applied Climatology. 11 – 15 August, 2008, Vancouver, BC, Canada. (80%)*

Puricelli, K.M., A.M. Hendin, B.L. Perrin, A.S. Kelly, A.R. Lupo, and P.E.Guinan, 2008: The Global Increase in Blocking Occurrences. University of Missouri Life Sciences week Poster Session – April 14 – 19, 2008

Lupo, A.R., Clark, J.V., A.M. Hendin, A.S. Kelly, B.L. Perrin, and K.M. Puricelli, 2008: The global increases in blocking occurrences. The 44th Annual Meeting of the Missouri Academy of Science, 18 – 19 April, 2008, Joplin, MO *Transactions of the Missouri Academy of Science*, **42.**

Hughes, K.B., and A.R. Lupo, 2008: Interannual variability of tornado production in the central plains. The 44th Annual Meeting of the Missouri Academy of Science, 18 – 19 April, 2008, Joplin, MO *Transactions of the Missouri Academy of Science*, **42.**

Zuki, Z.M., G.L. Limpert, and A.R. Lupo, 2008: The interannual variability of tropical cyclone activity in the Southern South China Sea. *28th Conference on Hurricanes and Tropical Meteorology. 24 – 28 May 2008, Orlando, FL (100%)*

Limpert, G.L., B.L. Perrin, and A.R. Lupo, 2008: An EdGCM modeling study of the effects of atmospheric trace gas concentration change on Atlantic tropical cyclone development parameters. *28th Conference on Hurricanes and Tropical Meteorology. 24 – 28 May 2008, Orlando, FL (100%)*

Chesser, M. D., A.R. Lupo, D. Albert, and C. Buonanno, 2008: The interannual variability of wildfires and related weather in the Missouri – Arkansas region. *88th Annual Meeting of the American Meteorological Society. 13 – 18 January, 2008, New Orleans, LA (80%*)

Glisan, J., and A.R. Lupo, 2008: Two cases of extreme blocking events over Europe and North America. *88th Annual Meeting of the American Meteorological Society. 13 – 18 January, 2008, New Orleans, LA (100%*)

Hussain, A., A.R. Lupo, and S. Dostoglou, 2008: Lyapunov exponents for barotropic circulation regimes. *The 20th Conference on Global Climate Change. 88th Annual Meeting of the American Meteorological Society. 13 – 18 January, 2008, New Orleans, LA (90%*)

Lupo, A.R., Clark, J.V, Puricelli, K., Kelley, A., 2008: The global increase in blocking occurrences. *The 20th Conference on Global Climate Change. 88th Annual Meeting of the American Meteorological Society. 13 – 18 January, 2008, New Orleans, LA (100%*)

Melick, C.J., B.P. Pettegrew, L.L Smith, A.E. Becker, P.S. Market, and A.R. Lupo, 2007: Comparing snowstorms with and without lightning via the growth rate parameter. *22nd Weather Analysis and Forecasting Conference/18th Numerical Weather Prediction, Salt Lake City, UT, 25 – 29 June.*

Melick, C.J., B.P. Pettegrew, L.L. Smith, A.E. Becker, P.S. Market, and A.R. Lupo, 2007: Stability Characteristics of Thundersnow Events: The Impact of Accounting for Ageostrophic Effects in the Growth Rate Parameter. *The 32nd Annual Meeting of the National Weather Association, 13 – 18 October, 2007, Reno, NV (10%*)

Glisan, J., G. Limpert, A. Koleiny, M. Reagan, J. Moker, A.R. Lupo, 2007: The 28 March, 2007 dry line case and the impact of topography. *The 32nd Annual Meeting of the National Weather Association, 13 – 18 October, 2007, Reno, NV (90%*)

Athar, H. , J. Glisan, A.R Lupo, P. Market, P. Pettegrew, M.Reagan, R. Redburn, A. Schnetzler, 2007: A Comparative Study to Quantify the Chaotic Behavior in Numerical Models. *The 32nd Annual Meeting of the National Weather Association, 13 – 18 October, 2007, Reno, NV (90%*)

Clark, J.V, Mihalka, K., Lupo, A.R., Puricelli, K., Perrin, B., Kelly, A., 2007: The increase in Southern Hemisphere blocking. Is it real? *The 32nd Annual Meeting of the National Weather Association, 13 – 18 October, 2007, Reno, NV (100%*)

Melick, C.J., B.P. Pettegrew, L.L. Smith, A.E. Becker, P.S. Market, and A.R. Lupo, 2007: Stability Characteristics of Snowstorms Utilizing the Growth Rate Parameter: A Comparison of Lightning vs. Non-Lightning Events. The 43rd Annual Meeting of the Missouri Academy of Science, 20 – 21 April, 2007, St. Joseph, MO. *Transactions of the Missouri Academy of Science*, **41.**

Hussain, A., A.R. Lupo, and S. Dostoglou, 2007: A calculation of Lyapunov exponents for atmospheric blocking. *The 16th Conference on Atmospheric and Oceanic Fluid Dynamics, June 25-29, 2007 Santa Fe, NM.*

Market, P. S., P. E. Guinan, B.P. Pettegrew, C. J. Melick, A. E. Becker, C. C. Crowe, T. Snyder, A. R. Lupo, and N. I. Fox, 2007: Overview of the 01 December 2006 heavy snow event across Missouri. The 43rd Annual Meeting of the Missouri Academy of Science, 20 – 21 April, 2007, St. Joseph, MO. *Transactions of the Missouri Academy of Science*, **41.**

Schnetzler, A.E., C.F. Dierking, A.R. Lupo, 2007: Seasonal temperature and precipitation dependencies in southeast Alaska. The 43rd Annual Meeting of the Missouri Academy of Science, 20 – 21 April, 2007, St. Joseph, MO. *Transactions of the Missouri Academy of Science*, **41.**

Schnetzler, A.E., G. Amenta, H. Athar, J. Glisan, P. Market, B. Pettegrew, R. Redburn, M. Reagan, M. Wood, and A.R. Lupo, 2007: A comparative study to quantify the chaotic behavior in numerical models. The 43rd Annual Meeting of the Missouri Academy of Science, 20 – 21 April, 2007, St. Joseph, MO. *Transactions of the Missouri Academy of Science*, **41.**

Hussain, A., A. R. Lupo, and S. Dostoglou, 2007: A calculation of Lyapunov exponents for

Atmospheric blocking. The 43rd Annual Meeting of the Missouri Academy of Science, 20 – 21 April, 2007, St. Joseph, MO. *Transactions of the Missouri Academy of Science*, **41.**

Melick, C.J., B.P. Pettegrew, L.L. Smith, A.E. Becker, P.S. Market, and A.R. Lupo, 2007: Stability Characteristics of Snowstorms Utilizing the Growth Rate Parameter: A Comparison of Lightning vs. Non-Lightning Events. *11th Annual NWA Severe Storms and Doppler Radar Conference, 22-24 March, 2007, DesMoines, IA. (10%)*

Hussain, A., A.R. Lupo, C. Strong, S. Dostoglou, 2007: A diagnostic study of atmospheric blocking using Lyapunov exponents over a 50 – year period. *The 87th Annual Meeting of the American Meteorological Society, 19th Conference on Climate Variability and Change, 14 – 18 January, 2007, San Antonio, TX*. (70%)

Latham, T.K., T.H. Magill, C.J. Melick, A.R. Lupo, J.V. Clark, and P.S. Market, 2007: The interannual and
interdecadal Variability in Hurricane Activity in the Atlantic and Eastern Pacific Ocean. *The 87th Annual Meeting of the American Meteorological Society, 19th Conference on Climate Variability and Change, 14 – 18 January, 2007, San Antonio, TX*. (80%)

Clark, J.V., K.M. Mihalka, and A.R. Lupo, 2007: Blocking in the Northern and Southern Hemisphere: An update to include 2000 - 2006. *The 87th Annual Meeting of the American Meteorological Society, 19th Conference on Climate Variability and Change, 14 – 18 January, 2007, San Antonio, TX*. (100%)

- Additionally, I have 68 Non-refereed Extension Publications, Amici Curiae (Supreme Court and others), or other publications. These can be provided upon request.

Research grants and awards received

Research grants and awards and fellowships received (27)

** *Successful internal proposal is on file with the Office of research as a model proposal.*

Dr. Lupo has received research support from internal and federal agencies (including fellowships) amounting to a total of $307,567.00 sole author grants. Another $4,753,074.00 was successfully funded as part of collaborative efforts with Dr. Patrick Market, Dr. Neil Fox, Dr. Rich Guyette, Dr. Peter Motavalli, Dr. Frieda Eivazi, and Dr. Adnan Akyuz, among others. Additionally, in August 2011, a grant was funded by the Russian Federation in which I was a partner on the project ($3 M R, ~$100 K US) Funded Projects in order of date granted are:

(Note: COMET/CAR grants are collaborative efforts with local National Weather Service Forecast Offices. The review process for COMET/UCAR grants consists of a review at the weather service office regional headquarters. Regional selects their best proposals to be submitted to UCAR in Boulder, CO where the final selection takes place.).

Only grants awarded since 2007 shown here.

Title:	Multi millennia climate and growth variability from ancient oak wood in the Midwest agricultural ecosystem.
Collaborators:	R. Guyette (PI), M. Stambaugh (Forestry) (Co-PI) (my contribution 10%)
Agency:	NSF
Period Covering:	1 January 2006 – 31 December 2008
Amount:	$297,000

Title:	The climatology of Dew Points and Fire Weather Related Parameters in the Missouri – Arkansas Region
Collaborators:	Dr. Patrick Guinan (MCC), David Gaede (NWS - SGF), and Chris Buonanno (NWS – LZK)
Agency:	COMET/UNIDATA (NSF)
Period Covering:	9/1/06 – 12/31/07
Amount:	$10,731

Title:	Center for Agricultural / Environmental Experiential Learning.
Collaborators:	Dr. Frieda Eivazi (Lincoln U.), A.R. Lupo and P. P. Motavalli
Agency:	USDA / CREES 1890 Institution Grant
Period Covering:	9/1/06 – 8/31/09
Amount:	$299,639 total (sub-award: $53,622.00 – Lupo, Motavalli)

Title:	Increasing use of the Integrated Data Viewer (IDV) in the Atmospheric Science Curriculum at the University of Missouri – Columbia.
Collaborators:	P.S. Market and N.I. Fox
Agency:	NSF/ UCAR/UNIDATA
Period Covering:	1 Jan 2008 – 31 Dec 2008
Amount Funded:	$ 11,661.00

Title:	Analysis of blocking characteristics and associated climate anomalies based on observational data and model simulation for the 20th and 21st centuries
Collaborators:	Pat Market (Co-PI), Dr. Igor Mokhov (Russian Federation)
Agency:	CGP-RFBR
Period Covering	1 June 2009 – 31 May 2011
Amount:	$72,800

Title:	The analysis of blocking and the tendencies for change in the 21st century
Collaborators:	Dr. Igor Mokhov (PI-Russian Federation), Alexander Chernokulsky, Merseid Akperov
Agency:	Russian Federation for Basic Research
Period Covering	1 January 2012 – 31 December 2014
Amount:	$3,000,000 R (about $233,000 US)

Title: Adaptation to climate change: Gaining the Advantage
Collaborators: Dr. Verne Kaupp, Vlad Likholetev, Robert Reed, and Thomas Johnson.
Agency: MU Advantage
Period covering: 1 July – 30 June 2012
Amount: $25,000.00

Title: TEAM Science (Technology and Educators Advancing Missouri Science)
Collaborators: Dr. Mary Haskins (PI) and Dr. Tiger Gordon (co-I)
Agency: Missouri Dept of Education
Amount: $1.5M
Role: Co-I
Period Covering: 1 January 2014 to 31 December 2016.

Title: Increasing Access to AWIPS-II in the Unidata Community at the University of Missouri.
Collaborators: P.S. Market, B. M. Svoma, N.I. Fox, and A.R. Lupo (25%)
Agency: NSF/ UCAR/UNIDATA
Period Covering: 1 January – 31 December 2015
Amount Fund: $12,421.00

Title: Rainfall rates in North Central Missouri's LTAR operated by the USDA
Collaborators: Dr. John Sadler
Submitted: August 6. 2014
Agency: USDA
Amount: $31,472.00
Period Covering: Sept 1, 2014 – Aug 31, 2015

Title: Rainfall rates in North Central Missouri's LTAR operated by the USDA
Collaborators: Dr. John Sadler
Submitted: August 2015
Agency: USDA
Amount: $35,000.00
Period Covering: Sept 1, 2015 – Dec 31, 2016

Title: The Missouri Transect: Climate, Plants, and Community
Collaborators: Many
Agency: NSF/EPA/EPSCoR
Amount Fund: $20,000,000.00 / $4,000,000.00 to our unit
Period Covering: Jan 1, 2014 – 31 December, 2019

Title: MU International Travel Grant – First Blocking Workshop – Reading, UK
Collaborators: none
Agency: MU Research Board
Amount Fund: $1,500.00

Period Covering: 1 January, 2016 – 31 December, 2016

Title: Sensitive versus Rough Dependence on Initial Conditions in Atmospheric Phenomena
Collaborators: Prof. Y.C. Li (Mathematics)
Agency: MU Research Board
Amount Fund: $1,500.00
Period Covering: 1 January, 2016 – 31 December, 2016

Invited Papers, Seminars, and Workshops - 113 (Only those since 2007 listed)

I have been invited to speak at universities (Kansas, Montreal – Quebec), the Russian Academy of Science, Moscow State University, and the National Press Club –Edward Murrow Room in Washington, DC.

Lupo, A.R., Climate Variability to Large Scale Dynamics. National Weather Service Southeast Regional Science and Operations Officer Workshop, Saint Louis, MO 19 July, 2017

Lupo, A.R., Interannual and Interdecadal variability in the Tropical South American Region of the Pacific, Teleconnections and their Impact on the Local Climate. Faculty of Chemistry and Faculty of Agronomy, Universidad Mayor San Andres, La Paz, Bolivia, 22 June, 2017

Lupo, A.R., The General Circulation and the Jet Stream. Faculty of Physics and Mathematics, Universidad Mayor San Andres, La Paz, Bolivia, 22 June, 2017.

Lupo, A.R., Climate, Climate Change and Climate Variability in Missouri, and What it means for you? Missouri Farm Bureau Annual Meeting. Columbia, MO 8 August, 2016.

Lupo, A.R., Climate, Climate Change and Climate Variability in Missouri, and What it means for you? Midwest Cooperative LAMPAC, Kansas City, MO 2 June, 2016.

Lupo, A.R., Seasonal Forecasting in the Central Part of the USA. Presentation to the faculty and students of the College of Natural Resources and Mining, Belgorod State University, 29 March, 2016.

Lupo, A.R., Blocking Anticyclones and their Characteristics. Presentation to the faculty and students of the College of Natural Resources and Mining, Belgorod State University, 25 March, 2016.

Lupo, A.R., Climate Change and Climate Variability, Trends in the change of phase of ENSO. Crop Management Conference 2015. 16 December, 2015

Lupo, A.R., Climate Change and Climate Variability in Missouri, and What it means for you? Annual meeting of Sigma Xi, 10 December, 2015

Lupo, A.R., Climate Change and Climate Variability in Missouri, and What it means for you? Annual meeting of the Missouri Pork Producers, 10 November, 2015

Lupo, A.R., Climate Change and Climate Variability in Missouri, and What it means for you? Biannual meeting of the City of Columbia Chamber of Commerce. 8 October, 2015

Lupo A.R., Blocking Anticyclones and Their Characteristics. Meeting for SATEP, Young Science meeting Tuapse, Russia 25 – 29 May, 2015.

Lupo, A.R., The Experience of the University of Missouri (USA) in Facing the Challenges of the Modern University and the Implementation of Innovations. A presentation to the Administration of Belgorod State University. May 20th, 2015

Lupo, A.R., The climatological and dynamic characteristics of blocking. 12 March, 2015. A presentation given at the State University of New York at Oswego, Synoptic Meteorology.

Lupo, A.R.,: Soils and Climate in the Belgorod Region. A presentation given to the Russian Academy of Science, Institute of Soil and Geography. 5 March, 2015, Moscow Russia

Lupo, A.R., Large-scale flow regime change and Blocking, A presentation given to a workshop held at the Russian Academy of Science, Institute of Atmospheric Physics, 3 March, 2015 Moscow Russia.

Lupo, A.R.: Soils and Climate in the Belgorod Region. Now and Then. Fulbright Russia Meeting 27 January, 2015. Moscow, Russia

Lupo, A.R., and P.G. Guinan: Climate, Climate Variability and Change: The Science and the Climate of Missouri. 31 May, 2014, Kansas City, MO Missouri Department of Conservation, Master Naturalist.

Lupo, A.R., Global Warming: Attribution, who is to blame? 15 April, 2014, Kansas City, MO Associated Electric Power Cooperatives NW MO.

Lupo, A.R., Global Warming: Attribution, who is to blame? 30 January, 2014, Moberly, MO

Lupo, A.R., *The weatherman's saga: Weather predictability and greenhouse gasses*. 11 December, 2013. MU Extension Talk. Extension Office in Higginsville, MO

Lupo, A.R., *Weather and Weather Safety*. Marshall, MO Public Schools. 5 August 2013.

Lupo, A.R., Using enstrophy transport as a diagnostic to identify flow regime transformation."

The 13th Davos Atmosphere and Cryosphere Assembly, International Union of Geodesy and Geophysics, 8-12 July, 2013, Davos Switzerland

Lupo, A.R., The Science of Climate Change and Implications for Energy Issues. 23 February, 2013. The 77th annual meeting of the Conservation Federation of Missouri. Jefferson City, MO.

Lupo, A.R., The Science of Drought and Flood Prediction, 2013 outlook. 14 February, 2013, Missouri Pork Producers Meeting, Columbia, MO

Lupo, A.R., The Science of Drought and Flood Prediction, 2013 outlook. 9 February, 2013, Missouri Young Farmer Organization., Columbia, MO

Lupo, A.R., The Science of Drought and Flood Prediction, 2013 Outlook 1 February, 2013, A LOT Learning Conference, Columbia MO.

Lupo, A.R., The Science of Drought and Flood Prediction. The 4th Symposium for Agroforestry, 9 January, 2013, Columbia, MO. Presented same talk in Hannibal and Maryville the same week at the invitation of Channel Seeds / Montsanto.

Lupo, A.R., The Science of Climate and Climate Change. A seminar given for the Department of Physics Saturday Morning Science Series. 3 November 2012. Columbia, MO.

Lupo, A.R., Blocking and Climate Studies at the University of Missouri. 11-12 September, 2012, Ames Iowa.

Lupo, A.R., *Extreme Events: Hurricanes and the Russian drought of 2010*. 21-23 May, 2012, Chicago, IL, Seventh International Conference on Climate Change.

Lupo, A.R., *Global Warming: Attribution, who is to blame?* 19 January, 2012, Omaha, NE Chapter of the AMS

Lupo, A.R., *Global Warming: Attribution, who is to blame?* 19 January, 2012, Omaha, NE Chapter of the AMS

Lupo, A.R., "Interannual and Interdecadal Variability and the outlook for Summer 2012. A presentation given to the Callaway County 88th Soils and Crop Annual Producers Conference. 17 Janaury, 2012.

Lupo, A.R., "Interannual and Interdecadal Variability and the outlook for Summer 2012. A presentation given to the MO – AG Winter Convention (A regional Business of Agriculture meeting), 11 Janaury, 2012.

Lupo, A.R., "Climate change, long range forecasting and Agriculture." A presentation given to the University of Missouri Chapter of the Farm Bureau. Ag week. 22 September, 2011.

Lupo, A.R., “Summer season drought in the European part of Russia: Climate and Dynamics”. A presentation given to the Russian Academy (A.M. Obukhov Institute). 25 October 2011.

Lupo, A.R., “The climatologic and dynamic character of blocking”. A presentation given to Belgorod State University. 3 November 2011.

Lupo, A.R., “Summer season drought in the European part of Russia: Climate and Dynamics”. A presentation given to Belgorod State University. 3 November 2011.

Lupo, A.R., and P.S. Market: *Tornado Talk.* A presentation given to the MU Chapter of Sigma Xi, Science Café. 15 June, 2011

Lupo, A.R., *Tornado Talk.* A presentation given to the Boone County GOP. 7 June, 2011

Lupo, A.R., *The climatological and dynamic characteristics of blocking*. 23 February, 2011. A presentation given at the State University of New York at Oswego Chapter of the AMS. .

Lupo, A.R., *Global Warming: Attribution, who is to blame?* 23 February, 2011, Faculty and students of the State University of New York at Oswego. Oswego, NY .

Lupo, A.R., *Global Warming: Attribution, who is to blame?* 11 February, 2011, A LOT Learning Conference, Columbia MO.

Motavalli, P.P. and Lupo, A.R., 2011: *Ethics and Professionalism in Soil, Enviromental, and Atmospheric Science*. Feb 7, 2011. (10%)

Lupo, A.R., *Interannual and Interdecadal Variability in Missouri Region Climate*. 5 November, 2010: College of Engineering Sustainable Energy Graduate Student Seminar Series.

Lupo, A.R., *Interannual and Interdecadal Variability in Missouri Region Climate*. 20 October,2010: College of Engineering Sustainable Energy Seminar Series.

Lupo, A.R., *The climatological and dynamic characteristics of blocking*. 21 September, 2010. A presentation given at the A.M. Obukhov Institute of Atmospheric Physics, Russian Academy of Sciences, Moscow, Russia.

Lupo, A.R., *Interannual and Interdecadal Variability in Missouri Region climate*. 27 – 31 July, Annual Crop Injury and Diagnostic Clinic. Columbia, MO 65211 (2 presentations).

Lupo, A.R., *Global Climate Change: A skeptical point of view*. 16 July, 2010, Annual Meeting of Advancing Renewable Energy in the Midwest. Columbia, MO.

Lupo, A.R., *Chaos Theory and Predictability.* 15th June, 2010, Boulder CO, COMET / NWS continuing education presentation (COMAP – program) (4 hrs).

Lupo, A.R., *Global Warming: Attribution, who is to blame?* 26 April, 2010, Annual Meeting of the Associated Electric Cooperatives of Missouri, Jefferson City, MO.

Lupo, A.R., *Global Warming: Attribution, who is to blame?* 19 April, 2010, Jackson Weather Service Forecast Office (JAN WFO), Jackson, MS

Lupo, A.R., *Global Warming: Attribution, who is to blame?* 19 April, 2010, Jackson State University, Jackson, MS, Department of Physics and Meteorology Seminar.

Lupo, A.R. *Presentation of Not Evil Just Wrong* 15 February, 2010, Columbia, MO, Omega Chi Epsilon, the Honor Society of Chemical Engineers.

Lupo, A.R., *Global Warming: Attribution, who is to blame?* 11 February, 2010, Macon, MO, Macon Regional GOP

Lupo, A.R. *Presentation of Not Evil Just Wrong* 22 January, 2010, Fayette, MO, Howard County Electric Cooperative.

Lupo, A.R., *Presentation of Not Evil Just Wrong* 15 December, 2009, Columbia, MO, University of Missouri.

Lupo, A.R., *Global Warming: Attribution, who is to blame?* 14 December, 2009, Linn, MO, Linn State Technical College auditorium

Lupo, A.R., *Hurricanes: The Evil Wind.* Lecture given to teachers at the 2nd NWA Teaching Summit. 21 October, 2009, Norfolk, VA.

Lupo, A.R.,: August 13, 2009, Scientists for Truth, "Debunking Climate Change Myths".

Lupo, A.R.,: *Global Warming: Attribution, who is to blame?* A presentation Show-Me Institute of Missouri. 1 June, 2009

Lupo, A.R., *Interannual Variabilityof Temperatures*. 24 April, 2009, Linn, MO, Linn State Technical college auditorium

Lupo, A.R., *Drought in the Midwest.* A SUPB Kemper Lecture Series talk for the University of Missouri, Memorial Union 9 April, 2009.

Lupo, A.R., *Interannual Variability of Temperatures*. 8-10 March, 2009, New York, NY, Second International Conference on Climate Change.

Lupo, A.R.,: *The Climatology of Winter Weather in Mid-Missouri.* November 18, 2008, Winter Weather Workshop sponsored by The University of Missouri Chapter of the American Meteorological Society

Lupo, A.R.,: *Global Warming: Attribution, who is to blame?* A presentation to the business and industry leaders of Missouri. 18 November, 2008

Lupo, A.R.,: *Global Warming: Attribution, who is to blame?* The Kansas City Area Chapter of the American Meteorological Society. 11 November, 2008

Lupo, A.R., *Global Warming: Attribution, who is to blame?* A seminar given for the Department of Physics Saturday Morning Science Series. 1 November 2008

Lupo, A.R., Global Warming: Attribution, who is to blame? 3 October 2008, Springfield, MO – MU extension seminar.

Lupo, A.R., Global Warming: Attribution, who is to blame? 2 October 2008, Lamar, MO – MU extension seminar.

Lupo, A.R., *Anthropogenic Global Warming: A Skeptical point of View*. June 2008 – (A slide presentation based on the paper). I was invited to upload this to www.slideworld.org a digital library managed by the Medical Sciences.

Lupo, A.R., Warming: Attribution, who is to blame? 26 January 2008, Jefferson City, MO - MU Regional meeting of the FFA.

Lupo, A.R., *An Overview of Quasi-Geostrophic Theory*. A presentation to the National Weather Service, 2007 Winter Weather Workshop, Pleasant Hill, MO, 29 October 2007.

Lupo, A.R., Global Warming: Attribution, who is to blame? 25 October 2007, Cape Girardeau, MO – MU extension seminar.

Lupo, A.R., Global Warming: Attribution, who is to blame? April 2007, Sedalia, MO – MU extension seminar.

Lupo, A.R., Global Warming: Attribution, who is to blame? 18 April, 2007, East Central College Seminar (college wide).

Lupo, A.R., Climate Change and Weather. 17, March, 2007, Hillsboro, MO Regional Soil and Agriculture

Lupo, A.R., *Interannual and interdecadal variability in the predominant Pacific Region SST anomaly patterns and their impact on a local climate.* 30 January, 2007, Creighton University, Omaha, NE.

Workshops Presented

Jensen, A.D. and A.R. Lupo, 2013: Integrated Regional Enstrophy Diagnostics in Blocking Events. The 13th Cyclone Workshop, 22-27 September, 2013 Sainte Adele Canada.

Working Groups Membership

Working Group I, IPCC Second Assessment Report 1995

Working Group I, IPCC Third Assessment Report 2001

Working Groups I, and III, IPCC Fourth Assessment Report 2007

Working Group on Predictability and Dynamics: THORPEX, 2006-2010: IG6, Atmospheric blocking, low-frequency variability, and their role in predictability.

American Meteorological Society Working Groups:

Member, Network of Networks, Ad Hoc Committee – Metadata (2009-2010)

Member, Ad Hoc Committee on Uncertainty in Forecasts (ACUF) (2009-2010)

Member, Climate Certification Group (C6) (2016- present)

Workshops and Workshops Chaired (only those since 2007 shown – 27 total)

- Advisor (with Dr. Neil I. Fox and Mr. Jay Hasheider): "The 3rd Conference on Renewable Energy in the Mid-West", 25 March 2008, Ames, IA
- **(By invitation only) Forum on Climate Change sponsored by George C. Marshall Institute, September 14- 16, 2008 Washington, DC.**
- **Session Moderator. 8-10 March, 2009, New York, NY, Second International Conference on Climate Change.**
- **Invited to the National Weather Service: "Decade-long Drought and Wet Periods in the Missouri River Basin", April 27-28, 2009.**
- Attended the Regional Mesonet workshop representing MU and sponsored by Saint Louis University Earth and Atmospheric Sciences. Saint Louis, MO, 15 - 16 April, 2009.
- Co-Chair (with Dr. Neil I. Fox, P.J. Wilson, and Mr. Jay Hasheider): "The 4th Conference on Renewable Energy in the Mid-West", 3 June 2009, Columbia, MO
- Chair of the Session on Data Assimilation: Profiling and satellite data assimilation at the *The 21st Conference on Weather Analysis and Forecasting (AMS-NWA)*, 1-4 June, 2009, Omaha, NE.
- Co-Chair (with Dr. Neil I. Fox, P.J. Wilson, and Mr. Jay Hasheider): "The 5th Conference on Renewable Energy in the Mid-West", 19 May 2010, Columbia, MO

- Co-Chair (with P.J. Wilson, Mr. Frank Cunningham, and Mr. Jay Hasheider): "The 6th Conference on Renewable Energy in the Mid-West", 30 March 2011, Columbia, MO

- **Invited to attend the Nutrient Management for Water Protection in Highly Productive Systems of the Heartland, Nebraska City, NE 8 – 10 June, 2010.**

- Co-Chair (with P.J. Wilson, Mr. Frank Cunningham, and Mr. Jay Hasheider): "The 7th Conference on Renewable Energy in the Mid-West", 26 March 2012, Columbia, MO

- **Co-Chair (with T. Johnson, D. Day, V. Likholetov, and R. Reed): "Climate Change: Gaining the Advantage", 6-8 June 2012, Columbia, MO**

- Chair of the committee: "The 48th Annual Meeting of the Missouri Academy of Science", 13-14 April, 2012, Columbia, MO

- Co-Chair (with P.J. Wilson, Mr. Frank Cunningham, Tim May, and Mr. Jay Hasheider): "The 8th Conference on Renewable Energy in the Mid-West", 28 March 2013, Columbia, MO

- Co-Chair (with P.J. Wilson, Mr. Frank Cunningham, Tim May, and Mr. Jay Hasheider): "The 9th Conference on Renewable Energy in the Mid-West", 8 April 2014, Columbia, MO.

- Co-Chair (with P.J. Wilson, Tim May, and Mr. Jay Hasheider): "The 11th Conference on Renewable Energy in the Mid-West", 11-12 April 2016, Columbia, MO.

- Session Chair, 19th SATEP meeting (Sponsored by the Russian Academy of Science, A.M. Obukhov Institute for Atmospheric Physics) (chaired 26 May afternoon) in Shepsi near Sochi, Russia 25-29 May 2015. (1st non-Russian citizen to do so they said!).

- Workshop on Atmospheric Blocking, 6-8 April 2016, University of Reading, UK. Science Committee, and session chair.

- Conference Chairman: 1st International Electronic Conference on Atmospheric Sciences: 16-31 July, 2016. Sponsored by SciForum International

- Scientific Committee member 2017 Weather Analysis and Forecasting Meeting AMS Annual Meeting Seattle, WA 2017.

- Conference Chairman: 2nd International Electronic Conference on Atmospheric Sciences: 16-31 July, 2017. Sponsored by SciForum International

Book, Proposal, Product, and Manuscript Reviews

For scholarly journals, the number of reviews is given in parenthesis.

Book, Book Chapter, and Report Reviews

Climate Change 1995: The Science of Climate Change, Contribution of Working Group I to the Second Assessment Report of the Intergovernmental Panel on Climate Change. Edited by: J.T. Houghton, L.G. Miera Filho, B.A. Callander, N. Harris, A. Kattenberg, and K. Maskell, Cambridge University Press, Cambridge, UK. 572 pp.
ISBN: 0 – 521 – 56436 - 0

Climate Change 1995: The Science of Climate Change, Summary for Policymakers and Technical Summary of the Working Group I report.

Climate Change 2001: The Science of Basis, Contributions of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change. Edited by: J.T. Houghton, Y. Ding, D.J. Griggs, M. Noguer, P.J. van der Linden, X. Dai, M. Maskell, C.A. Johnson. Cambridge University Press, Cambridge, UK. 881 pp.
ISBN: 0-521-01495-6

Climate Change 2001: The Science of Climate Change, Summary for Policymakers and Technical Summary of the Working Group I report.

Climate Change 2001: The Scientific Assessment of Climate Change Synthesis Report.

Greenhouse Gas Emissions Action Options Report – Draft: 2002: A Report synthesized by the Missouri Department of Natural Resources Energy Center (Authored by Mr. John Noller, Energy Planner). (I was asked to review this report on 12 June, 2002 and replace the retired Dr. Ernest Kung on the DNR steering committee for Greenhouse Gasses)

Frasier Institute, 2007: Independent Summary For Policy Makers of the text of the IPCC Fourth Assessment Report (January 2007)

Heartland Institute, 2009: Climate Change Reconsidered: The Report of the Nongovernmental International Panel on Climate Change (NIPCC), edited by Craig Idso, Ph.D., and S. Fred Singer, Ph.D. (released 2 June 2009)

US Climate Action Report, 2010: Fifth National Communication of the United States of America Under the United Nations Framework Convention on Climate Change, reviewed for the Heartland Institute.

Heartland Institute, 2013: Climate Change Reconsidered II: The Report of the Nongovernmental International Panel on Climate Change (NIPCC), edited by Craig Idso, Ph.D., and S. Fred Singer, Ph.D. (released 28 August 2013)

Climate Change 2013: The Science of Basis, Contributions of Working Group I to the Fifth

Assessment Report of the Intergovernmental Panel on Climate Change. http://www.ipcc.ch...

**Note: The IPCC scientists shared the Nobel Peace Prize as announced on October 12, 2007 with Mr. Albert Gore Jr. from the USA.

Greenhouse Gas Emissions Action Options Report – Draft: 2002: A Report synthesized by the Missouri Department of Natural Resources Energy Center (Authored by Mr. John Noller, Energy Planner). (I was asked to review this report on 12 June, 2002 and replace the retired Dr. Ernest Kung on the DNR steering committee for Greenhouse Gasses)

Climate Change Science Program Synthesis and Assessment Product, "North American Carbon Budget and Implications for the Global Carbon Cycle".

- Cornwall Alliance (Jan 2010): A renewed Call to Truth, Prudence, and Protection of the poor: An Evangelical examination of the Theology, Science, and Economics of Global Warming. (Chapter 2 primarily) 76pp

- American Meteorological Society Commission on the Weather and Climate Enterprise Board on Enterprise Communication A Weather and Climate Enterprise Strategic Implementation Plan for Generating and Communicating Forecast Uncertainty Information (Jan 2010) 112 pp.

o McGraw-Hill Publishing: September 2003, asked to review Chapter 10 (Circulations on Many Scales and their Interactions) of Meteorology, 2nd Ed. (Danielson, et al.). I was given an honorarium for this work.

o Prentice Hall Publishing: September 2002, 2004 asked to Review Understanding Weather and Climate, 3rd Ed. and 4th ed. (E. Aguado and J.E. Burt). I was given an honorarium for this work.

o Galarneau, T.J, L.F. Bosart, and A.R. Aiyyer, 2005: A 54-year global closed anticyclone climatology (1950 – 2003). AMS Meteorological Monograph, 94 pp.

Book Proposal Review

- John Wiley and Sons,Inc., proposing a new introductory text to be published for 2004. I was asked by a representative of John Wiley and Sons to review the book proposal. I was given an honorarium for this work.

- McGraw-Hill Publishing: September 2003, asked to review a book chapter. I was given an honorarium for this work.

- Moran Publishing: January 2007, asked to review material for a book chapter. I was given an honorarium for this work.

- W.H. Freeman & Company: October 2013, asked to review Molles 3rd Draft ch 07 Terrestrial Resources book chapter. I was given a $125.00 honorarium for this work.

<u>*Paper Reviews including those for scholarly journals*</u>

Reviewed papers for more than 60 different journals including journals outside meteorology, and over 350 articles..

- *Intergovernmental Panel on Climate Change Working Group I Technical Papers 1,2,3, and 4.*
- *Nongovernmental International Panel on Climate Change*
- *Monthly Weather Review*
- *Journal of the Atmospheric Sciences*
- *Tellus (Swedish Meteorological Society)*
- *Quarterly Journal of the Royal Meteorological Society*
- *Journal of Geophysical Research (American Geophysical Union)*
- *Geophysical Research Letters (American Geosphysical Union)*
- *Journal of Arid Environments (Cambridge Press)*
- *Journal of the Meteorological Society of Japan*
- *National Weather Digest*
- *Journal of Operational Meteorology*
- *Journal of Climate*
- *International Journal of Climatology*
- *Journal of Applied Meteorology*
- *Weather Analysis and Forecasting*
- *Meteorological Monograph*
- *Doklady, Earth Sciences (Russian Academy of Sciences)*
- *Pure and Applied Geophysics*
- *Transactions of the Missouri Academy of Science*
- *Journal of Global and Planetary Change*
- *Paper for the Fraser Institutes, IPCC AR4 analysis series on Natural Variations.*
- *Geological Society of America*
- *Atmospheric Science Letters*
- *Electronic Journal of Severe Storms Meteorology*
- *Heat Transfer Engineering, An International Journal*
- *International Journal of Tourism*
- *Evidence-based Climate Science volume*
- *Advances in Meteorology.*
- *Advances in Atmospheric Science*
- *Atmospheric Environment*
- *International Journal of Hydrological Science and Technology (IJHST)*

- *International Journal of Biometeorology*
- *Philosophical Transactions of the Royal Meteorological Society.*
- *Dataset papers in Atmospheric Science (Hindawi)*
- *Nature Publication Group Geosciences*
- *Science PGReview*
- *Meteorological applications.*
- *Applied Geography Conference*
- *Atmosfera*
- *Central European Journal of Physics*
- *Papers for the 36th Conference on Applied Geography*
- *Dynamics of Oceans and Atmospheres*
- *Papers in Applied Geography*
- *Journal of Environmental Science and Technology*
- *Meteorology and Atmospheric Physics*
- *Acta Advances in Agricultural Sciences (AAAS) journal*
- *Journal of Geography, Environment and Earth Science International*
- *Theoretical and Applied Climatology*
- *Scientific Reports, Nature group*
- *Atmosphere*
- *Great Plains Research*
- *Journal of Environment and Engineering.*
- *Pure and Applied Mathematics*
- *Open Journal of Atmospheric and Climate Change*
- *Quaternary International*
- *Weather (RMS)*
- *Precision Agriculture*
- *Atmosphere – Ocean*
- *Chemosphere*
- *Atmospheric Research*
- *Climate*
- *Journal of Meteorological and Oceanic Technology*

Proposal Reviews (number if more than 1)

- Proposal review for National Science Foundation: Blocking Anticyclone development, Coastal Fronts, Climatology of Low Level Jets (5)

- Proposal review: Agricultural Experiment Station proposals (2)

- Proposal Review: Southwest Center for Environmental Research and Policy (1)

- Proposal Review: MU Alumni Association Incentive Grants Program (2nd Cycle 2002, 20)

- Proposal Review: Missouri Research Board (1)

- Proposal Review: Research Council (1)

- Proposal review(s): For the Fulbright Scholar Office in Russia, reviewed proposals from Russian Scholars wishing to come to the US, 2007-2016

- Proposal Review: NOAA – NWS *"Wind Chill: An Accurate and Complete Theoretical Model With Experimental Verification*

- Proposal Reviews for CRDF – (8) November 2010 ($250.00 honorarium)

- Reviewed proposal: served as an outside reviewer for LSU internal grants. (Jan. 2012)

- Reviewed proposal for CRDF (1) September 2013 for $50.00 honorarium.

- Reviewed (Invited) Conrad Foundation, Spirit of Innovation Awards November 2013 (no proposals in my category).

- Global Innovation Initiative Proposals 2014 (10 January 2014). Energy, Climate Change, and the Environment category. (22 proposals)

- Reviewed Fulbright Proposal Applications (Committee 2015-2017): CIIES – Fulbright – Washington D.C. (about 40 per year – Russia-Georgia-Armenia-Azerbaijan)

- Reviewed Proposals for CRDF (21) Mathematics Shota Rustaveli National Science Foundation (October 2016) $1575.00 honorarium.

- Reviewed Proposal for USAID / SHERA – CIIES: (Indonesia) (9 proposals) December-January 2017

- Reviewed proposal for MO EPSCoR seed grant – July 2017.

Product Reviews

July - August 2000: Reviewed the Kestral 3000, a hand held temperature, wind, and humidity instrument, and commented on it's suitability for use in hurricane research.

Consulting work

- 2006: Reconstructed the synoptic and mesoscale events surrounding the Blue Mound, MO tornado of 20 June 1883. http://www.bluemoundhistory.com/tornado.htm

- 2004, 2006, 2008: Hired to provide expert testimonial: Law Offices of Schreimann, Rackers, Francka & Blunt, L.L.C. (Jefferson City).

- 2006: Hired to provide expert testimonial: Law Offices of Robert J. Hayes (Saint Louis).

- Hired by ORNES, Engineering, LCC, as a consultant for an SBIR proposal.

- September – December 2007: hired to provide expert testimonial: Law offices of Lathrop and Gage. Provided 31 hours of consulting - deposed and testified for the defense which won on all counts.

- November 2007 – present: hired by Mac Guire – Woods (Richmond, VA) to provide expert testimonial.

- June 2008 – present: hired by the Shook, Hardy and Bacon Law Firm (provided 24 hours of consulting thus far.)

- July 2009 – present: Hired by the Benson Law Firm, LLC, Kirksville MO, for expert testimony.

- Invited to join; "Round Table Group, the Expert Witness Search and Referral Firm", a Washington, DC based group of expert witnesses and consultants.

- 2010: Hired to provide expert testimony by the Troy County, MO public defender. Testified 12 May, 2010.

- 2010 Hired by Ford, Parshall, and Baker, for Expert testimony October

- 2010 Hired by Horn, Aylward, and Bandy, LLC for Expert Testimony, November

- Heartland Institute hired as a consultant (Lead Author) for Modelling Chapter 2011-2013.

- 2012 Hired by Pedroli and Associates (Saint Louis, MO).

- 2013 Hired by the State of Alaska as a climate modeling expert. (2013 – 2016)

- 2013 Hired by Shurtleff, Froeschner, and Harris for expert testimony (March – Feb. 2014)

- 2013 Hired by Ford, Parshall, and Baker, Columbia, MO as a climate expert

- 2014 Provided expert support to Rep Tim Remole for H.B. 1302.

- 2014 hired by Stone, Leyton & Gershman, 2014
- 2015 Provided expert testimony to Sanders and associates in OH
- 2015 World Bank: part of a team from MU developing a Natural Resources and Food Security Master's Degree.

GRADUATE STUDENTS MENTORED

All graduated students have been at least partially supported by grants I have received (See grants obtained under Research Scholarship) or Teaching Assistantships.

Graduate Committees

I have served as an advisor on additional graduate committees in the atmospheric science program.

I have currently five students (two M.S. / three Ph.D.) and 29 have graduated (23 M.S. / 6 Ph.D)

Graduate Student	Degree	Year	Current Status
Cynthia L. Berger	MS	1999[1]	Broadcast Meteorologist, Ag Day Television, South Bend, IN
Jason Wiedenmann	MS	1999[1]	Chemistry Instructor / Los Angeles Area Community College / PhD student at USC (Environmental Engineering)
Matthew Chambers	MS	2002[1,3,5]	Candidate / Broadcast Meteorologist, KMOV-4 Saint Louis, MO
Nassar Albaloushi	MS	2001[2]	Candidate (funded by the Government of the United Arab Emirates)
John Burkhardt	MS	2003[1]	Not employed in Atms. Sci.
Zabani Zuki	MS	2004[1]	Malaysian Weather Service / Administrator.
W.Christopher Maune	MS	2006[1,4]	Law Degree from MU – J.D. / Working in STL Law firm
Andrew Kunz	MS	2005[1]	Science journal technical editor
Patrick Guinan	PhD	2004[1]	Missouri State Climatologist

Mandi Reagan	M.S.	2007[1,5]	Working for Env. Sci firm in St. Louis, MO
Kevin Birk	M.S.	2006[1]	NWS ORD
Ben Roudenis	M.S.	2006[5]	M.S. Student – Not in Meteorology
Melissa Chesser	M.S.	2010[1]	Working for Dept of Defense
Rachel (Fay) Redburn	M.S.	2007[1,6]	Wind Capital Group (Mr. Tom Carnahan).
John Burkhardt	Ph.D.	2008[5]	Not in Meteorology
Justin Glisan	M.S.	2007[1]	Ph.D. – Iowa State University
Athar Hussain	Ph.D.	2008[1]	Professor – Pakistan
Neville Miller	M.S.	2008[1,5]	(current) TV meteorologist, KC
J. Michael Roberts	M.S.	2015[1]	(current) Adjudant general MO National Guard
Shawn Riley	M.S.	2010[1]	(current) MU-IT. OU – IT
Eric Weber	M.S.	2009[1]	(current) Ph.D.
Chris Halcomb	Ph.D.	2010[1,5,6]	(current)
Mohd. Hisham Anip	Ph.D.	2012[1]	Admin - Malaysian Weather Service
Justin Abraham	M.S.	2012[1]	(current) –Weather Channel
Eric Aldrich	M.S.	2011[1]	(current) – MU – Instructor, IT MO
Michelle Bogowith	M.S.	2011[1]	(current) – TV Channel 41 in Kansas city (FOX)
Erik Oberhaus	M.S.	2012[3,5]	
Eric Weber	Ph.D.	2012[1,6]	Ph.D. Working in the Private Sector
Isabela Carlos	Ph.D.	2014[1,5]	Ph.D. Student
Rose Grace Newberry	M.S.	2014	KXAN chief Meteorologist – Austin TX
Andrew Jensen	Ph.D.	2014[1]	Assistant Professor, Math and Meteorology,

			Northland College
Nick Ebner	M.S.	2013[1]	Done / High School Teaching – St. Louis
Daniel Ebner	M.S.	2013[1]	KRCG, Jeff City, MO
Ralph Johnson	M.S.	2015[1]	Student MU
Jordan Rabinowitz	M.S.	2016[1]	PhD student MU
Chasity Hensen	M.S.	2015[1,6]	PhD student MU
DeVondria Reynolds	MS	2017[1]	Done
Max Nunes	MS	2017[1]	Done
Evan Kutta	Ph.D	2017[1,6]	Post Doc at West Virginia University.
Jordan Rabinowitz	PhD	2019[1]	
Alex Korner	MS	2019[1]	
Jane Niemeyer	PhD	2019[1]	
Sarah Balikassoon	PhD	2019[1]	Laspau Fulbright Student
Corey Clay	MS	2019[1]	

[1] Expected or final graduation date.

[2] Called for military duty August 2000. He likely will not return.

[3]Matt was nominated for and won an Outstanding Graduate Achievement Award (Sponsored by GSA) in March 2001.

[4]Expelled from the Graduate School due to insufficient grades. Student will likely not return.

[5]Did not graduate.

[6]I co-advised Rachel, Chris, and Eric with Dr. Neil I. Fox, Chasity with Pat Market, Evan with Jason Hubbart

Postdoctoral Research Associates Supervised / Visiting Scientists Hosted

Postdoctoral	Degree and Year	University	Current Status

Dr. Ali Deniz	Ph.D / 1997	Technical Univ. of Istanbul	Prof. at ITU
Dr. Courtenay Strong	Ph.D. 2005	University of Virginia	Associate Prof. Utah Univ
Dr. Andreas Ravelo	Ph.D. 1985	University of Cordoba, Argentina	Professor at home institution.
Dr. Athar Hussain	Ph.D. 2008	University of Missouri	Professor Pakistan
Dr. Loren White	PhD 1996	Florida State University	Assoc. Professor / Jackson State

Graduate Committees

I have served as an advisor on additional graduate committees in the atmospheric science program, across MU, and outside MU.

Graduate Student	Degree	Year	Dept, Institution, advisor
Haldun Karan	MS	1999	SEAS – MU – Mudrick
Chris Halcomb	MS	2001	SEAS – MU – Market
Chris Ratley	PhD	ABD	SEAS – MU - Kung
Stacey Allen	MS	2002	SEAS – MU – Market
Martin Baxter	MS	2003	Atms. Sci – St. Louis U. – Graves
Elizabeth (McCoy) Hatter	MS	2003	SEAS – MU – Fox
Angela Oehl	MS	2003	SEAS – MU – Market
Mustafa Coskun	PhD	2003	SEAS – MU Mudrick
David Barriopedro-Cerpero	PhD	2007	Physics – U. Madrid – Herrera
Christopher Melick	PhD	2008	SEAS – MU – Market

Rebecca Ebert	MS	2004	SEAS – MU – Market
Steven Lack	PhD	2008	SEAS – MU – Fox
Brian Pettegrew	PhD	2008	SEAS – MU – Market
Rahul Gunda	MS	2005	Elec. Eng. – MU – Islam
Bun- Liong Saw	MS	2005	SEAS – MU – Fox
Md. Hisham Anip	MS	2005	SEAS – MU – Market
Larry Smith	MS	2006	SEAS – MU – Market
William T. Gilmore	MS	2007	SEAS – MU – Fox
Stephen Markley	MS	2009	Geography – MU – Cowell
Mike Stambaugh	PhD	2008	Forestry – MU – Guyette
Jamie Moker	MS	2010	SEAS – MU – Market
Amy Schnetzler	MS	2008	SEAS – MU – Market
John Kahl	PhD	2010	Mathematics – MU – Dostoglou
Ali Koleiny	MS	2009	SEAS – MU – Fox
Katie Crandall	MS	2010	SEAS – MU – Market
Dannah Schaffer	PhD	2011	Science Education – MU – Barrow
Michael Folmer	PhD	2011	Atms Sci – SLU – Pasken
Oluseun S. Idowu	PhD	2012	Geosci/Math/Statistics – UMKC – Adegoke
Gregory Varner	PhD	2012	Mathematics – MU – Dostoglou
Robert Gastler	PhD	2012	Mathematics – MU – Dostoglou

David Roache	PhD	2013	Geography – University of South Florida – Collins
Christopher A. Saunders	M.S.	2012	Journalism – MU - Wilkins
Neus Vila Brunet	Ph.D	2014	Agricultural Economics – MU - Johnson
Kelly Scott	M.S.	2012	Atmospheric Science – Saint Louis University - Eichler
Nathan Madden	Ph.D.	2013	Politicial Science - Kaiser
Anh Nguyen	Ph.D	2015	Ag. Engineering (Thompson)
Adam Balbi	MS	2013	SEAS-MU-Fox
Joshua Kastman	MS	2013	SEAS – MU Market Phd. student
Quinn Pallardy	MS	2013	SEAS MU Fox
Michael Simpson	MS	2014	SEAS MU Fox PhD student
Katie Crandall	PhD	2014	NWS – MW Region
Quang Phung	PhD	2017	Ag. MU Thompson
Sara Grana	MS	2014	NWS – Fox MW Region
Peter Speck	MS	2015	NWS – Svoma Davenport, IA
Josh Kastman	PhD.	2017	Market SEAS
Molly Rooney	M.S.	2017	Forestry - Stambaugh

Undergraduate / Secondary Education Students Mentored (50+):

Undergraduate Scholarship/Project Mentoring

I have served as an undergraduate scholarship mentor for ten $1,000.00+ awards given by the College of Agriculture, Food, and Natural Resources. These papers are presented at a CAFNR sponsored poster session and reception in the Memorial Union. Also, the undergraduate papers

have presented at the Missouri Academy of Sciences. I have also mentored students in secondary education.

Most undergraduate mentors have been co-authors on AMS and NWA conference presentations, and some have co-authored papers.

TEACHING

Summary of Student Teaching Evaluatations

Semester	Course Number[1] (credits)	No. of Students	Number Evaluating	Course GPA	Evaluation Average[2]	SNR Average[2,6]
F 97	ATM 350 (3)	14	13	3.71	4.8	3.9
Sp 98	ATM 301 (3)	10	9	3.9	4.0	
	ATM 102 (1)	23	20	3.66	4.6	
F 98	ATM 394 (4)	20	17	3.53	4.0	3.9
	ATM 312 (3)	31	25	3.33	4.3	
Sp 99	ATM 395 (4)	20	14	3.48	3.9	
	ATM 50 (3)	185	80	2.89	3.5	
	ATM 102[3] (1)	22	18	3.60	4.7	
	ATM 301 (3)	13	12	3.9	4.3	
F 99	ATM 50 (3)	138	66	2.68	3.7	4.1
	ATM 416 (3)	6	4	4.0	3.5	
Sp 00	ATM 102[3] (1)	24	23	3.6	3.6	
	ATM 395 (4)	2	1	3.0	4.5	
	ATM 399 (3)	11	11	3.51	4.4	
	ATM 466 (3)	2	2	4.0	5.0	
	ATM 410[4] (1)	0	0	0	0	
F 00	ATM 50 (3)	156	95	2.95	4.2	4.0
	ATM 385 (3)	12	7	3.33	4.4	
	ATM 394 (4)	21	13	3.06	4.4	
Sp 01	ATM 102[3] (1)	42	37	3.6	4.5	
	ATM 395 (4)	19	14	3.08	4.8	
	SAS 410 (1)	6	1	4.0	4.0	
	ATM 412 (3)	2	2	3.0	4.5	
F 01	ATM 50 (3)	203	62	3.24	4.6	3.9
	ATM 200[5] (3)	6	0	3.33	0	
	ATM 394 (4)	14	11	3.19	4.5	
	ATM 416 (3)	4	4	3.75	5.0	
Sp 02	ATM 395 (4)	12	9	3.69	4.8	
	ATM 399 (3)	21	16	3.33	4.1	
	SAS 410 (1)	7	3	4.0	4.3	
	ATM 466 (3)	2	2	4.0	5.0	

F 02	ATM 385 (3)	23	19	3.62	4.1	3.9
	ATM 394 (4)	14	11	3.23	4.5	
Sp 03	ATM 50[7] (3)	308	5	2.99	3.4	
	ATM 395 (4)	19	13	3.47	4.4	
	ATM 412 (3)	4	4	3.5	4.5	
F 03	ATM 385 (3)	16	11	3.62	4.3	3.9
	ATM 394 (4)	21	15	3.54	4.7	
	ATM 416 (3)	6	6	3.5	4.5	
Sp 04	ATM 50[7] (3)	300	24	3.0	4.1	
	ATM 395 (4)	20	17	3.49	4.6	
	ATM 399 (3)	27	22	3.69	4.4	
	ATM 466 (3)	3	3	3.66	4.0	
F 04	AT 4310/7310 (4)	13	10	3.36	4.2	4.1
	AT 4800/7800 (3)	18	16	3.59	3.6	
	ATM 9300 (3)	8	6	3.75	4.2	
Sp 05	ATM 1050[7] (1)	292	7	3.16	4.1	
	ATM 3600 (3)	54	N/A	N/A	N/A	
	AT 4320/7320 (4)	16	9	3.50	4.3	
	ATM 9350 (3)	7	7	3.57	4.4	
F 05	AT 4310/7310 (4)	26	20	3.38	4.3	4.1
	AT 4800/7800 (3)	18		3.65	4.0	
	ATM 8400 (3)	6		3.33	4.5	
	Math 8702[9] (3)	8	N/A	N/A	N/A	
Sp 06	AT 3600 (3)	42		3.48	4.3	
	AT 4320/7320 (4)	25		3.28	4.3	
	AT 4650/7650 (3)	18		3.31	4.4	
	AT 8600 (3)	5		3.60	4.5	
	Math 8702[9] (3)	10	N/A	N/A	N/A	
F06	AT 4310/7310 (4)	15	10	3.43	4.4	4.1
	AT 4800/7800 (3)	13	5	3.60	4.6	
	AT 9300 (3)	7	6	3.86	4.7	
Sp 07	AT 3600 (3)	52	38	3.43	4.2	
	AT 4320/7320 (4)	13	10	3.56	4.6	
	AT 9350 (3)	5	5	3.80	4.8	
F 07	AT 4310/7310 (4)	25	20	3.26	4.5	
	AT 8001/8450 (3)	6	2	4.0	4.4	
	AT 8400 (3)	8	5	4.0	4.2	
Sp 08	AT 3600 (3)	72	45	3.71	4.5	
	AT 3000 (3)	2	2	3.84	N/A	

	AT 4320/7320 (4)	22	11	3.49	4.7	
	AT 8600[8] (3)	1	1	4.0	5.0	
F 08	AT 4310/7310 (4)	15	11	3.33	3.9	
	AT 3000 (3)	2	2	4.00	N/A	
	AT 9300 (3)	5	4	3.40	3.5	
Sp 09	AT 3600 (3)	67	37	3.23	3.4	
	AT 4320 (4)	15	9	3.26	3.5	
F 09	AT 4310/7310 (4)	12	8	3.30	3.7	3.4
	AT 8400 (3)	6	5	4.00	3.6	
Sp 10	AT 3600 (3)	77	50	3.26	3.3	3.4
	AT 4320 (4)	12	9	3.03	3.6	
	AT 8450	11	10	3.81	3.7	
F10	AT 4310/7310 (4)	19	15	3.35	3.8	3.5
	AT 4650/7650 (3)	19	14	3.62 / 4.0	3.1	
	AT 7800 (3)	3	3	3.33	N/A	
S 11	AT 3600 (3)	75	62	3.56	3.4	
	AT 4320 (4)	21	17	3.43	3.6	
	AT 9350 (3)	5(6)	5	3.2	3.6	
F 11	AT 4310	22	15	3.65	3.9	
	AT 4800/7800	24	22	3.72	3.3	
	AT 8600	4	3	3.5	3.7	
S12	AT 4320/7320	25	19	3.50	3.6	
	AT 3600	74	57	3.10	3.5	
	AT 8450	10	10	3.80	4.0	
F 12	AT 4310 / 7310	8	5	3.14	3.6	
	AT 9300	8	7	3.86	3.7	
S 13	AT 3600	76	55	3.09	3.7	
	AT 4320	4	5	3.13	3.6	
	AT 9350	7	5	3.29	4.0	
Su -2013	AT 1050	20	20	3.1	3.2	
F 13	AT 4310	16		3.49	3.5	
	AT 4650/7650	31		3.44	3.4	

	AT 8400	5		4.0	3.8	
S14	AT 4320/7320	14		3.52		
	AT 8450	3		3.33		
Su 14	AT 7085					
F 14	AT 8400 / Belgorod State University	25 Russian studies and 8 Faculty	25	S/U	Proj: 3.5	
	AT 8600	4	4	4.0	Proj: 4.0	
S15	AT 4600 / BGU	30 / same	30	S/U	Proj: 3.8	
F 15	AT 4310	18		3.41	4.26	
	AT 9300	8		3.67	4.44	
S16	AT 4320	17		3.51	4.0	
	AT 8450	9		3.67	4.22	
F16	AT 4310 / 7310	16		3.51	4.77	
	AT 4650 / 7650	13		3.67/4.0	4.67	
	AT 8400	5		4.0	4.6	
F17	AT 4320/7320	14	14	3.67	4.85	
	AT 9350	2	2	4.00	5.00	

[1]This class list does not include ATM 200 described above.

[2]Is the overall teaching effectiveness under the general evaluation. This number is the total out of a possible total of 5 points, 5 being highest. Starting in Fall 2008, this number was out of a total of 4.0, 4 being the highest.

[3]In this course, the lecture materials were designed by myself. A teaching assistant delivered the lectures and gave the grades.

[4]For this class I assisted Dr. Diann Jordan. This class was offered for the first time as a joint Soil and Atmospheric Science Seminar class. I was learning how this class is run.

[5] I offered an independent study section of Atms 385, Numerical Methods in the Atmospheric Sciences for students who wanted to take this course before they missed their chance when we went to a biennial offering.

[6]The SNR average is obtained from the Assessment Resources Center on campus up to Fall 2002 and is the academic year average corresponding to the same number described in footnote 2 above. After Fall 2002, the number comes from the SNR Academic Programs Office. The average is for all SNR classes taught.

[7]Represents three semesters of large lecture classes when I'd asked for evaluations and made them voluntary. I didn't get an "overwhelming" response.

[8]This was offered independent study to the one graduate student.
[9] I team taught this with Dr. Stamatis Dostoglou, Mathematics. My role was to advise him on meteorological applications.

Invited Teaching, Workshops, and Presentations

Classes in the School of Natural Resources

- *Atmospheric Blocking*, Lecture for ATM 366 Climates of the World (April 98)
- *Ozone Depletion in the Stratosphere*, Lecture Natural Resources (NRES) 160 (Dec. 98, 99).
- *Climate, climate change, and the human component*, Lecture for NRES 160 (Dec. 98, 99, 00, 01,02).
- *Atmospheric Air pollution*, Lecture prepared for NRES 160 (Dec. 2000).
- *On global warming*, Lecture prepared for Dr. Mark Ryan (Mar. 7, 2001)
- *Severe weather and tornadoes*, Lectures prepared for NRES 160 (December 2003, 2004)
- *The Santa Anna winds and their contribution to the fires of 2007* (Lecture prepared for Dr. Keith Goyne, 26 October 2007)
- *Global Warming and Attribution.* (Lecture prepared for Natr 2160 Dr. Bruce Cutter and Dr. H. Garrett, 1 and 8 November 2007, 3 Dec 2008, 3,6 Dec 2010, 4,6 December 2011, 3,5 December 2012, Oct 14, 16, 2013).
- Preparing For Graduate School. Natural Resources Learning Community April 2011
- Acid Rain. Natural Resources Learning Community October 3, 2011 (With Peter Motavalli)
- The USA drought of 2012 and the Russian Drought of 2010. Natural Resources Learning Community October 26, 2012
- Forest Fire Control and Use (FOR 3207) 2 lectures, 2 hrs each Fall 2012 – For Ill Colleague)
- International Opportunities for Study (November 13, 2013 With Peter Motavalli) for Natural Resources learning community)

Classes outside the School of Natural Resources

- *Climate and Climate change in the Midwest*. Geography 410, 8 September, 1999

- *Climate and Climate Change in the Midwest*. Seminar for Law School, 25 October,1999.

- *The Physics of the Greenhouse Effect.* Two Lectures for (Chemical Engineering), Apr. 00, Aug. 00.

- *Climate and Climate Change in the Midwest.* Lecture Sept. 00. (Political Science 365 Environmental Theory and Politics)

- *Climate Change and Global Warming: The current perspective*. Seminar for Law School Oct. 00.

- *Climate and Climate Change in the Midwest.* Lecture for May 01. (World Food and You.)

- *Advisors are people too.* A short presentation given as part of an "advisors panel" for freshmen. Aug. 01, Sep. 02, 03, 04, 05, 06, 07, 08, 09,10,11,12,13 (Learning and Instruction for Freshmen - T42).

- *Climate and Climate Change:* Lecture given to three classes at Linn State Technical College, Soil and Environmental Sciences class. November, 2005, 2006, 2007; April, 2006, 2007, 2008, 2009, (3) 2010.

- *Global Warming and Attribution.* A lecture for General Honors 1070 (Bill Folk 9 February 2009).

- The Zwack Okossi Equation: a derivation and physics. A lecture for Advanced Synoptic Meteorology 9700 (Market – 9 February 2009)

- *Interannual and Interdecadal Variability in Climate*. A lecture given to Climate Theory in the Department of Atmospheric Physics, Moscow State University (22 September, 2010: Dr. Igor I Mokhov, instructor).

- *Climate Change and Global warming*. Lecture for Ag Econ 4990 14 Feb 2012, and 2013. (Jan Dauve)

- *Climate Change and Global Warming*. Lecture for Chem Eng. 4311 11 March 2013,

- *Climate Change and Global Warming*. Lecture for Chem Eng. 4312 12 March 2013.

- Energy: Climate and Climate Change Lecture for Ag. Sys. Management 7085, 7 August 2013, 2014.

- Climate Change and Global Warming, Lecture for General Honors 2230: *Science and Public Policy* 8 March 2017

Teaching Workshops, Lectures, and Presentations

- *Climate and Climate Change, will Missouri be heating up?* A Back-to-classes Lecture prepared for the MU Jefferson Club, 17 September, 1999

- Market, P.S., and A.R. Lupo: *How are the teachers of today preparing the meteorologists of tomorrow?* Presented to: The Kansas City Chapter of the American Meteorological Society 19 September 2001.

- *Clouds in a bottle:* A teaching demonstration prepared for prospective SNR students, 9 November 2001, November 15, 2002, 14 Nov. 2003 (4 - 20 min. demos.)

- *The Chamber:* A teaching demonstration prepared for prospective SNR students, 21 October 2005

- *Introduction to Atmospheric Sciences:* A teaching demonstration prepared for prospective SNR students, 9 November 2001, 15 November, 2002, 14 Nov. 2003 (2 lectures) (50 min. lecture)

- Grigsby, M, E. P. Berg, S.T. Cole, S.K. Freyermuth, D.E. Lehman, A.R. Lupo, P.S. Market, J.J. Millspaugh, J.L. Parcell, and D.R. Vaught, 2004: MU CAFNR Teaching Scholars Program. (Featured Poster) 14th Program for Excellence in Teaching Teaching Renewal Conference. 26 – 28 February, 2004, Columbia, MO. (10%).

- Lupo, A.R.: *Climate and Climate Change:* Lecture given to Weather Camp Workshop run by Dr. Patrick Market, June 2005.

- Climate, Climate Change, and Hurricanes: Lecture given to Saturday Morning Science group (sponsored by Life Sciences and Physics), Columbia, MO, 11 February 2006.

- Climate, Climate Change, and Hurricanes: Lecture given to Lifelong Learning (Talking about the weather – a 6 week course team taught by Dr. Market, myself and graduate students) – MU Extension, Columbia, MO, 27 April 2006.

- Climate Change: Attribution, who is to blame for global warming? Lecture given to the Life Sciences Policy Forum, 4 October 2006

- Hurricanes: The Evil Wind: Lecture given to teachers at the 1st annual NWA Teaching Summit. 15 October, 2006, Kent State, Kent, OH.

- Climate Change: Attribution, who is to blame for global warming? Lecture given to the Life Sciences Policy Forum, 13 September 2007. I also presented this on November 13

2007 at the Memorial Union for a student sponsored panel along with a showing of *"An Inconvenient Truth"*

- Weather and Climate, a training workshop for Columbia Public Schools. April 2,9,16, and 23, 2008. I presented at the April 9th and 16th sessions. The Atmospheric Sciences Program worked with the Public Schools to get speakers and topics.

- Hurricanes: The Evil Wind: Lecture given to teachers at the 2nd NWA Teaching Summit. 21 October, 2009, Norfolk, VA.
- I presented a Lecture on *"Not Evil Just Wrong"* this on December 15 2009 at the SNR Natural Resources Building along with a showing of the movie *"Not Evil Just Wrong"*

- Climate Change and Attribution: Lecture given to Lifelong Learning (Talking about the weather) – MU Extension, Columbia, MO, 12 April 2010.

- Hurricanes: The Evil Wind: Lecture given to teachers at the 3rd NWA Teaching Summit. 17 October, 2011, Birhmingham, AL

- Climate Change and Attribution: Lecture given to Lifelong Learning (Talking about the weather) – MU Extension, Columbia, MO, 3 October 2013.

Teaching Renewal Activities

- Attended the "Greater Expectations: Teaching and Learning and Learning in the College of Agriculture, Food, and Natural Resources" 14 August 2000

- Attended the "Building better teachers and a stronger community, as we better prepare our students for success during the next century." CAFNR Fall Teaching Round-up 2001.

- Attended the "High Impact Teaching", CAFNR Fall Teaching Round-up 2003.

- Attended "Teaching in a Classroom with a Diverse Population", CAFNR Fall Teaching Round-up 2004.

- Attended MU Director of Graduate Studies Leadership Summit, "Conflict Resolution Workshop" 13 Sept. 2004.

- Attended the North Central Region Teaching Symposium at Kansas State University, 23 – 25 May, 2005

- Attended the CAFNR Fall Teaching Academy, "Problem Based Learning", 8 August, 2005.

- Attended the School of Natural Resources Faculty Advisor workshop, 9 August, 2005

- Attended the "Developing Undergraduate Faculty Teaching Partnerships to Enhance Learner Centered Approaches, 13 January 2006.

- Attended the CAFNR Fall Teaching Academy, 10 August, 2006.

- Attended the CAFNR Fall Teaching Academy, *How People Learn – Bridging Research and Practice,* 7 August 2007.

- Invited to represent MU Atmospheric Science at the Math – Meteorology teaching workshop, 22-23 February, 2008. Sponsored by Valparaiso University.

- Attended the CAFNR Teaching Symposium Program, 15 January 2009.

- Attended the CAFNR Teaching Symposium, "Generation Me", 13 January 2010.

- Attended sessions during the *"Celebration of Teaching Excellence" workshop 18-19 May 2010.*

- Attended sessions during the *"Celebration of Teaching Excellence" workshop 17-18 May 2011.*

- Attended sessions during the *"Celebration of Teaching Excellence" workshop 15-16 May 2012.*

- *Attended sessions during the "Celebration of Teaching Excellence" workshop 21-22 May 2013.*

- *Attended sessions during the "Celebration of Teaching Excellence" workshop 20-21 May 2014.*

- *Attended sessions during the "Celebration of Teaching Excellence" workshop 17-18 May 2016.*

- *NSF: MO EPSCoR how to be a Master Communicator 23-24 May 2016*

SERVICE: Department, School, University, Professional

Dr. Lupo is regularly available to local media (television, radio, and newspaper) outlets for weather information and expert commentary. He has also answered inquiries for media in Kansas City, Saint Louis, ABC news, and Fort Myers (FL), as well as international venues such as Japan, Britain (Economist), and Russia (NTV, Belgorod TV) . Also, in addition to giving numerous talks to the general public, various civic organizations, and agricultural groups on topics including El Nino and Southern Oscillation, long range forecasting, global warming, and

weather safety, Dr. Lupo has served on various committees at different levels within the University.

Service to Profession, University, College, School, and Department

Memberships and Activity in Academic, Scholarly, and Professional Societies

- American Meteorology Society
    - Associate Editor of Monthly Weather Review 2000 – 2003, and 2007 - present
    - Nominated for Fellow (May 2008, May 2014)
    - CCM Seal (February 2010)
    - -CCM Board – Feb 2014 – present
      CBM Broadcast Seals committee
      Written exams and new questions committee
      Written Exam committee
      Vice Chair 2016, Chair 2017
    - University Representative, Weather Coalition
    - Member, Network of Networks, Ad Hoc Committee – Metadata
    - Member, Ad Hoc Committee on Uncertainty in Forecasts (ACUF)
    - Member, THORPEX working group 6 (blocking).

  Member, Climate science communications network that is a project of the University Corporation for Atmospheric Research (UCAR) and the United Nations Foundation (UNF). (Climate Voices)

- National Council of Industrial Meteorologists (2014 – present)

- Sigma Xi Honor Society

    - Elected President (11 April, 2002, reelected 17 April 2003, again 2008-2009)
    - Elected Vice President, University of Missouri Chapter (21 March, 2001, May 2004)
    - Elected Secretary, MU Chapter, May 2005 – 2007, and May 2009-Aug 2009
    - Treasurer Aug. 2009 - present.

- Fellow, Royal Meteorological Society

- Phi Kappa Phi Honor society

- Fellow, Missouri Academy of the Sciences

    - Elected Chair of the Atmospheric Sciences Section (Served 4/2000 – 4/2002)
    - Editor 2003-2006, Transactions
    - Vice President 2008- 2009
    - President Elect 2009- 2010
    - President 2010 – 2011
    - Past President 2011-2012

- Member, Gamma Sigma Delta
    - Historian for FY 2004 – 2006
    - President for FY 2003 - 2004
    - Vice President (President Elect) for FY 2002 - 2003
    - Appointed Secretary for FY 2001 - 2002
- American Geophysical Union
- European Geophysical Union
- MU representative on the Board on Oceans and Atmospheres of the National Association of State Universities and Land-Grant Colleges.
- UCAR/UNIDATA Contract Contact point for the University of Missouri (1998 – 2003)
- Member, Fulbright Association (for Fulbright Alumni) (2004 – present)
- Member, National Weather Association
    - Committee member: Weather Analysis and Forecasting Committee 1/02 - present)
    - Committee member: Education Committee 1/06 – present)
    - Committee member: Publication Committee 1/07 – present
    - Associate Editor 2002 – 2009
    - Editor 2009 – 2012
- Listed as a hurricane expert on the American Geological Institute list of hurricane experts for government. (9/05 – present)
- Summer 2009, 2010, 2012, 2015: Asked to review a promotion and tenure dossier for promotion from Assistant to Associate professor each year.
- Summer 2011, 2012 (2), 2014, 2015, 2017 (2): Asked to review a promotion dossier for promotion from Associate to Full professor.
- Reviewed Fulbright scholar applications for the Russia Program 2007 – present. Also, in 2010 – present reviewed senior scholars for Russia, and in 2011 for the USA. Interview Russian Senior Scientists 15-16 Sept. 2014 in Moscow.
- Nominated to serve on the Board of Natural Resources (BNR) Science Roadmap for Natural Resources – Committee (national).
- Joined Editorial Board of Advances in Meteorology: 25 March 2015. Also Chief editor for two special issues.

University of Missouri System

- IFC rep 2013 – 2014
- IFC task force on faculty workloads (Chair)

University of Missouri - Columbia

- Served on the MU Environmental Affairs Committee, 1998 – 2001, Fall 2002 – 2005.
    - Chair, September 1999 - May 2000
- Served on the Campus Committee for Safety, Fall 1999 - Fall 2002
- Serving on the Missouri State Drought Assessment Committee, including the Weather and Climate Committee, July 2005 - 2012
- Participated in "Project Enter" (2000, 2001, 2002), a University Sponsored program to showcase science and mathematics programs to junior high students across the state.
- Represented MU at the Annual University Corporation for Atmospheric Research meetings 8-9 October, 2002 (MU is member representative in that organization)
- UCAR Administrative Representative for MU (Sept. 2003 – present)
- Campus Faculty Committee on Tenure (Sept. 2004 – May 2005)
- Elected to the Graduate Faculty Senate (Spring 2006 – 2008)
- Serving on the Campus Planning Committee (2007 – 2010)
- Serving on the Parking and Transportation Committee (2007 – 2010)
- Fall 2008, served as a reviewer for Carnegie Endowment Fellowship for Peace applications (MU Fellowships Office)
- 2009 – 2012: Mizzou ADVANCE Mentoring Program mentor.
- 2010 – 2012t: Commission on Student Success.
- 2010 – 2011: Campus Faculty Committee on Tenure (not P&T!).
- 2011, 2012, 2013, 2014, 2016: University of Missouri Undergrad Research Expo – April 26th Head judge physical sciences section (2013-2016).

- Participated in the review and selection of one NSF proposal to leave campus under the PIRE program.

- 2012- present: Elected to serve on Faculty Council (CAFNR, Vice Chair 2013 - 2014)

- 2013, Served on the Kemper Teaching Award Selection Committee.

- 2013 – 2015 MU Accreditation Task force. – Committee task 2,3

- 2013-2015 MU Grievance Oversight Committee (FC rep and a Chair)

- Graduate Faculty Senate (2015- 2017, President 2016-2017)

- CAFNR Dean Search Committee – 2016 – 2017.

College of Agriculture, Food, and Natural Resources

- Served in CAFNR Urban Outreach Program (Dean Mitchell) (1998)

- Served in CAFNR Learning Improvement Committee (Assoc. Dean Vaughn) (2000-present, Chair 2008 - 2009)

- Served CAFNR as Atmospheric Science partner on CSREES Multistate Research Project (formerly NC094, NC1018, now NC1179) "*Impact of Climate and Soils on Crop Selection and Management*" (2002- present)

- Serving on the Undergraduate Recruiting Committee (Assoc. Dean Vaughn; Sept 2002 – Aug. 2003)

- Serving as the North Central Region representative for Climate (with State Climatologist Dr. Patrick Guinan, 2000 - present)

- Served CAFNR South Farm Field Days 2006, 2007, 2008

- Serves CAFNR at the Missouri State Fair (1998 – present)

- CAFNR Search for Associate Dean (10/2008 – spring 2009)

- CAFNR Undergraduate Scholarship selection committee (2011)

- CAFNR Promotion and Tenure Committee (2011-2013)

- CAFNR Executive in Residence Advisory Board (2011-present)

- CAFNR Promotion and Tenure Workshop panelist (8 May, 2013)

- CAFNR Dean Search Committee 2016-2017.

School of Natural Resources

- Helped present weather and forecasting information for Ag. days (Sp. 98/Sp.99)
- Participate in SNR Summer Welcome advisement (1998 – present)
- Served on the SNR Internal Communications Committee (9/1998 – 9/1999)
- Served on the SNR Curriculum Committee (8/2000 - 1/2002)
- Serving as SNR representative to the Graduate Faculty Senate (5 / 2006 – 2009)
- Serving on the SNR Promotion and Tenure Committee 2004 – 2008 (Chair 2006 – 2008)
- Served as Chair of the SNR Director's evaluation committee Fall 2009.
- Served on the Tree Ring Laboratory search committee (2011)
- School representative to Faculty Council (2012 – present)
- School representative to Graduate Faculty Senate (2015 – present)

Soil, Environmental, and Atmospheric Science Department

- Department Chair 2008 – 2014 (Aug 27 –left for Russia)
- Program Leader (1/2002 – 2007)
- Soil, Environmental, and Atmospheric Science P&T representative to SNR (2005 – 2008)
- Soil Chemist Faculty Search Committee (Spring 2004)
- Chair, Mentoring Committee for Neil Fox (9/2002 – present)
- Advisor to the University of Missouri Meteorology Club (9/1997 - 3/2002)
- Departmental liason to the Graduate School for the MU Louis-Stokes Missouri Alliance for Minority Participation (LS-MoAMP) Summer Undergraduate Research Internship Program. (11/02 – present).

- Atmospheric Science Faculty Search Committee, Fall 1998, Fall 2000 - Spring 2001, Spring 2013.

- Atmospheric Science FIG Advisor (6/2001 - 2014);

- Atmospheric Science Undergraduate Scholarship Committee (9/1997 - present)
    - Chair, 9/97 – 1/02

- Coordinated MU participation in the national game (9/1997 – 9/2001).

- Director of Graduate Studies (1/2002 - 2008)

- Formed and supervised the MU storm chase team (3/1998 – 2/2001).

- Guided the formation of the Mid-Missouri Chapter of the American Meteorological Society, Fall 1997, (we became a joint AMS – National Weather Association Chapter 2/2002).

- Oversees the local weather forecast game (9/1997 – present)

- Serving on the (Soil and) Atmospheric Science Curriculum Committee (9/1998 - present)

- Supervised the KU-MU Synoptic Forecasting Workshop (9/1997 – 9/2000)

- Serves on Atmospheric Science Program Committee to Review Doctoral Faculty renewals (10/00 – 9/15)

Service to Elementary and Secondary Education in Missouri

- I have been invited to elementary and secondary schools in mid-Missouri to talk about our meteorology program, severe weather, and climate change. These schools include schools in Columbia as well as in Camdenton, MO. Also, during academic year 2000 - 2001, I served as a statewide judge for the junior high and senior high divisions of the Missouri Science Olympiad. In this role I helped administer the test for competition and score the final results to decide the "winners". Additionally, I have judged science fairs in Columbia and around the State of Missouri.

Summary of Adminstration Activity

In 2002, I was recognized by the School of Natural Resources as the Program Leader for Atmospheric Sciences. My position was unique in that in the Atmospheric Sciences, there was 100% turnover in faculty from 1997 – 2000. Thus, I was the senior person in this program before

being granted promotion and tenure in 2003. I have also served as the Director of Graduate Studies for the Atmospheric Science Program and from 2004 onward, the Department of Soil, Environmental, and Atmospheric Sciences. In 2008, I became the Department Chair. I am also the UM system administrative representative to the University Corporation for Atmospheric Research (UCAR), which is the governing body of Atmospheric Science research nationally. I attend the UCAR annual meetings in Boulder, CO, and I have represented Atmospheric Science since 2002 at the biannual Atmospheric Science Heads and Chairs meetings. Finally, I oversaw the successful completion of our 8-year review for reapplication of UCAR membership in Spring 2005 and 2013.

Administrative Positions

- 2008 – 2014 Chair; Soil, Environmental, and Atmospheric Sciences (9/1/2008)
- 2002 – 2005 Program Leader for Atmospheric Sciences
- 2002 – 2008 Director of Graduate Studies (Soil, Environmental, and Atmospheric Science)
- 2003 – present UCAR member representative for the University of Missouri System. (Administrative Representative)
- 2005 – 2008 Soil, Environmental, and Atmospheric Science P&T representative to SNR. (Chair: 2006-2008)
- 2011 – 2013 CAFNR Promotion and Tenure committee (Chair 2012-2013)

Administrative Training:

- 2008 – 2009 Selected for the LEAD21 program (class of 2008 – 2009). This is a program with national reach for leadership training for future leaders in academics.

OTHER AWARDS AND HONORS (Personal)

- Eagle Scout, Boy Scouts of America, 1984
- Successfully Completed Honors Program at Cayuga County Community College, 1986
- David Ross Fellow (Purdue University), 1993 - 1995
- Outstanding Graduate Student (Purdue University), 1995

- Outstanding Alumnus (Purdue University), 2013

COMMUNITY SERVICE

Community-at-large

- Community Service in Association with the Boy Scouts of America, 1975 - 1986.
- Youth Baseball League Coach, 1975 - 1986.
- Parish Council Representative (Church), 1982 - 1984.
- Committee for Social Concerns (Church), 1981 - 1984.
- Head Orientation Guide, Riggs Hall, SUNY College at Oswego, 1987 - 1988.
- Habitat for Humanity of Lafayette, IN Volunteer, 1993-1995.
- Director of the community service committee, Knights of Columbus, Council 3357 /
    - Guilderland, NY, 1996 - 1997.
- Member, Knights of Columbus, Council 1529 / Columbia, MO, 1997 - present
    - Elected Recorder (secretary) July 2000 – 2004, 2007 - 2009
    - President of 4th Degree Assembly July 2001 – 2003
    - Deputy Grand Knight 2009 – 2011
    - Trustee 2011- 2013
    - Grand Knight 2013-2014
    - Webmaster 2015 - present
- Climate and Modeling expert for International Climate and Environmental Change Assessment Project (ICECAP) (2007 – present)
- Parish Council Representative (Education committee) (Church), 1998 - 1999
- Coach, Daniel Boone Little League, 2000 - 2003
- Served as the Missouri state-level judge for the junior high and high school Science Olympiad, AY 2000 - 2001.
- Columbia Soccer Club coach (2005 – 2010)
- Elected to the Columbia Catholic School - School Board (May 2004 – 2008)

    - President (2006 – 2008)

- Elected to the Columbia Catholic School – Home and School Association (May 2011 – 2014)
    - President (2011 – 2013)

REFERENCES

Available upon request.

Benito J. Mariñas, Ph.D.
Ivan Racheff Endowed Professor and Head
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Urbana, Illinois 61801
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E-mail: marinas@illinois.edu

1. Education:

B.S. Civil Engineering, Universidad Politecnica de Madrid, Spain, 1981
M.S. Sanitary & Environmental Engineering, University of California at Berkeley, 1984
Ph.D. Sanitary & Environmental Engineering, University of California at Berkeley, 1988

2. Professional Experience:

2015-present	Head, Department of Civil and Environmental Engineering (CEE), University of Illinois at Urbana-Champaign (UIUC)
2014-2015	Interim Head, Department of Civil and Environmental Engineering (CEE), University of Illinois at Urbana-Champaign (UIUC)
2013(Oct-Dec)	Visiting Professor, International Center on Water and Environmental Research (CIRSEE), Suez Environnement, Le Pecq, France
2013-present	Director, National Science Foundation Science and Technology Center of Advanced Materials for the Purification of Water with Systems (NSF STC WaterCAMPWS), UIUC
2011-present	Director, Safe Global Water Institute, College of Engineering, UIUC
2011-2013	Acting Director, NSF STC WaterCAMPWS, UIUC
2011-2013	Chair, Environmental Engineering and Science Program, Department of Civil and Environmental Engineering (CEE), UIUC
2010-2011	Associate Director for Water and Health Research Theme, NSF STC WaterCAMPWS, UIUC
2010 (July)	Visiting Professor, Water Technology Center (CETaqua), Aguas de Barcelona, Polytechnic University of Catalunya, and Consejo Superior de Investigaciones Cientificas, Barcelona, Spain
2005-present	Ivan Racheff Professor of Environmental Engineering, CEE, UIUC
2005-2008	Chair, Environmental Engineering and Science Program, CEE, UIUC
2005(May-Jul)	Visiting Research Scholar, Research Center for Environmental Quality Management, Kyoto University, Kyoto, Japan
2002(Nov-Dec)	Visiting Professor, Swiss Federal Institute of Environmental Science and Technology (EAWAG), Dübendorf, Switzerland
2000-2005	Professor of Environmental Engineering & Arthur and Virginia Nauman Faculty Scholar, CEE, UIUC
1995-2000	Associate Professor of Environmental Engineering, CEE, UIUC
1994-1995	Associate Professor of Environmental Engineering, Purdue University
1989-1994	Assistant Professor of Environmental Engineering, Purdue University
1989 (Jan-Jul)	Supervising Engineer, Applied Research Department, James M. Montgomery, Consulting Engineers, Inc., Pasadena, California

1983-1988 Graduate Research Assistant, Department of Civil Engineering, University of California, Berkeley

3. Professional recognition (awards, honors)

Harold Munson Outstanding Teacher Award, Purdue University, 1992
Ross Judson Buck '07 Outstanding Counselor Award, Purdue University, 1992
UIUC Center for Teaching Excellence List of Teachers Ranked as Excellent: Fall'96, Fall '97, Spring '02, Fall '03, Fall '04, Fall '05, Spring '06, Fall '06, Spring '07, Fall '07, Spring '08, Fall '08, Spring '09, Fall '09, Spring '10, Fall '10, Fall '11, Fall '12, Fall '15, Fall '16.
Arthur and Virginia Nauman Faculty Scholar Award, 1998-2005
Association of Environmental Engineering and Science Professors (AEESP) Parsons Engineering Science Doctoral Thesis Award (doctoral student: Qilin Li), 2003
Ivan Racheff Endowed Professorship, 2005-present
Annual Biomedical Research Conference for Minority Students Chemical Sciences Poster Award (Summer Research Opportunity Program student: Wanakee Carr), 2006
AWWA Second Place Academic Achievement Award for best Doctoral Dissertation (doctoral student: Lance C. Schideman), 2007
AWWA Membrane Technology Conference Student Best Paper Award (doctoral student: Orlando Coronell), 2007
Engineering Council Award for Excellence in Advising, College of Engineering, University of Illinois at Urbana-Champaign, 2008.
Association of Environmental Engineering and Science Professors Board of Directors Elected Member, 2010-2012
Gordon Research Conference on Drinking Water Disinfection By-Products Student Poster Award (Doctoral student: Jeanne Luh), 2009.
Plenary Speaker "Science and Technology Advances for Global Safe Water" at the 8th International Water Association (IWA) Leading Edge Technology (LET), Amsterdam, The Netherlands, June 6-10, 2011
Water Environment Federation Disinfection Committee Award of Merit for Outstanding Contribution to the Disinfection Field (2011)
Association of Environmental Engineering and Science Professors Board of Directors Elected Member (2010-2012)

4. Invited Lectures

1. "Membrane Technology for Drinking Water Treatment", Presented as part of a Seminar on Small Scale Water Treatment Technologies organized as part of the Indiana Section, American Society of Civil Engineers Annual Conference, Indianapolis, Indiana, March 22, 1991.
2. "Lead and Copper Rules and Corrosion Control", Presented as part of a Seminar on Lead and Copper Rules organized by Minnesota Section American Water Works Association,Minneapolis, Minnesota, November 6, 1991.
3. "Reverse Osmosis Membrane Technology for Water Pollution Control", Presented at Department of Chemistry Seminar Series, Purdue University, West Lafayette, Indiana, September 7, 1993.

4. "Water Purification", Presented at School of Agricultural Engineering Seminar Series, Purdue University, West Lafayette, Indiana, January 25, 1994.
5. "Permeation of Inorganic Electrolytes through Thin-Film Composite Reverse Osmosis Membranes", Presented at NASA Specialized Center of Research and Training in Bioregenerative Life Support (NSCORT) Seminar Series, Purdue University, West Lafayette, Indiana, January 31, 1994.
6. “Inactivation of Infectious Agents in Drinking Water and Control of Disinfection By-Products” Presented at the Iowa Conference on Emerging Environmental Health Issues, September 23-24, 1997.
7. “Ozone Inactivation of C. parvum Oocysts Based on Viability Assessment by Modified in-vitro Excystation Method”, American Water Works Association International Workshop on CT for Cryptosporidium, Washington, D.C., January 12-14, 1998.
8. "Cryptosporidium parvum Inactivation," U.S. Environmental Protection Agency, Office of Ground Water and Drinking Water, Washington, D.C., October 1998.
9. "Sequential Disinfection Strategies for Cryptosporidium parvum Oocyst Treatment," U.S. Environmental Protection Agency, ICR, Treatment, and Methods Research Stakeholder Meeting for the Stage 2 DBPR and LT2ESWTR, Arlington, Virginia, March 1999.
10. "Hydrodynamics of Ozone Disinfection Reactors," Keynote presentation, International Ozone Association Specialized Symposium on Fundamentals and Engineering Concepts for Ozone Reactor Design, Toulouse, France, March 1 3, 2000.
11. “Inactivation of C. parvum Oocysts in Single-Step and Sequential Disinfection Schemes” Swiss Federal Institute for Environmental Science and Technology, Duebendorf, Switzerland, March 8, 2000.
12. “Inactivation of C. parvum Oocysts in Single-Step and Sequential Disinfection Schemes” Facultad de Ciencias del Mar, Universidad de Cadiz, Puerto Real (Cadiz), Spain July 13, 2000.
13. “Chemical Disinfection of Drinking Water.” Presented at 2001 Ondeo Services Virtual Plant Workshop, Ferrieres-en-Brie, France, November 8 and 9, 2001.
14. “Drinking Water Security Issues.” Presented at 2001 Ondeo Services Virtual Plant Workshop, Ferrieres-en-Brie, France, November 8 and 9, 2001.
15. “Protecting the Drinking Water Supply of :Landmark Buildings against Terrorist Acts with Biological and Chemical Agents,” Skidmore Owings & Merrill LLP, New York, NY, May 8, 2002.
16. “Chemical Disinfection Kinetics: Ct or not Ct” Swiss Federal Institute for Environmental Science and Technology, Duebendorf, Switzerland, November 28, 2002.
17. “Role of Water Quality in the Performance of Membrane Processes” NSF STC of Advanced Materials for Water Purification Systems, University of Illinois, March 14, 2003.
18. “Disinfection Benefits Associated with the Sequential Application of Chemical Disinfectants” American Water Works Association Annual Conference and Exposition, June 18, 2003.
19. “Integrated Approach for the Control of Cryptosporidium parvum Oocysts and Disinfection By-Products in Drinking Water Treated with Ozone and Chloramines” Presented at the US EPA’s Research on Microorganisms in Drinking Water Workshop, Cincinnati, OH, August 5-7, 2003.

20. “Modeling Cryptosporidium parvum Oocyst Inactivation and Bromate Formation in a Full-Scale Ozone Contactor” Arizona State University, Department of Civil and Environmental Engineering, Tempe, AZ, March 10, 2005.
21. “Competitive Effects of Natural Organic Matter (NOM) on the Adsorption of Trace Organic Contaminants on Powdered Activated Carbon (PAC)” First Research Center for Environmental Quality Management Symposium, Kyoto University, Kyoto, Japan, May 27, 2005.
22. “Reverse Osmosis/Nanofiltration (RO/NF) Membrane Systems with Enhanced Water Permeability and Contaminant Rejection Capability” Toray Industries Inc., Shiga, Japan, June 30, 2005.
23. “Water Quality Control with Reverse Osmosis and Nanofiltration Membrane Processes” Research Center for Environmental Quality Management Symposium, Kyoto University, Otsu, Japan, July 1, 2005.
24. “Modeling Cryptosporidium parvum Oocyst Inactivation and Bromate Formation in Full-Scale Ozone Contactors” Trans-Pacific Interactive Distance (TIDE) Kyoto University – UCLA Project, Department of Urban and Environmental Engineering, Kyoto University, Kyoto, Japan, July 4, 2005.
25. “Chemical Disinfection of Drinking Water” Research Center for Environmental Quality Management Symposium, Kyoto University, Otsu, Japan, July 8, 2005.
26. “Modeling Cryptosporidium parvum Oocyst Inactivation and Bromate Formation in Full-Scale Ozone Contactors” The Association of Environmental and Sanitary Engineering Research Symposium, Kyoto, Japan, July 21, 2005.
27. “Water Quality Control with Reverse Osmosis and Nanofiltration Membrane Processes” Department of Civil and Environmental Engineering, Virginia Polytechnic Institute and State University, November 4, 2005.
28. “Physico-chemical Characterization of Reverse Osmosis and Nanofiltration Membranes” The Croucher Foundation Advanced Study Institute Leading-Edge Strategies and technologies for Sustainable Urban Water Management, The Hong Kong University of Science and Technology, Hong Kong, September 16-20, 2006.
29. “Control of Emerging Pathogens in Drinking Water: Inactivation Kinetics and Mechanisms” Environmental Protection Agency National Risk Management Research Laboratory, October 25, 2007.
30. “Control of Emerging Pathogens in Drinking Water: Inactivation Kinetics and Mechanisms” Department of Civil and Environmental Engineering, University of Missouri-Rolla, November 2, 2007.
31. “Photocatalysis for Water Quality Control.” Electric Power Research Institute (EPRI) Workshop to Assess Research Opportunities for Water Use Efficiency Technologies, Palo Alto, CA, November 14-15, 2007.
32. “Control of Emerging Pathogens in Drinking Water: Inactivation Kinetics and Mechanisms” Department of Civil and Environmental Engineering, Universidad de Las Americas, Puebla, Mexico, November 20, 2007.
33. “Control of Emerging Waterborne Pathogens: Inactivation Kinetics and Mechanisms” 5th Chemical Engineering Conference for Collaborative Research in Eastern Mediterranean Countries (EMCC5), Cetraro, Italy, May 24-29, 2008.

34. “Control of Emerging Waterborne Pathogens: Inactivation Kinetics and Mechanisms” Division of Environmental Science and Engineering, National University of Singapore, Singapore, August 4-5, 2008.
35. "Sustainable Approaches for the Control of Emerging Waterborne Pathogens" Keynote Presentation, International Conference on Water, Environment, and Health Sciences: The Challenges of Climate Change (ICWEHS), Universida de Las Americas - Puebla, Cholula, Mexico, April 13-17, 2008.
36. “Advances in Membrane Desalination Science and Technology” Desalination and Reuse Workshop, International Water Association (IWA) World Water Congress and Exhibition, Vienna, Austria, September 7-12, 2008.
37. “Sustainable Approaches for the Control of Emerging Waterborne Pathogens: Inactivation Kinetics and Mechanisms” Department of Civil and Environmental Engineering, Michigan State University, March 17, 2009.
38. "Control of Emerging waterborne Viral Pathogens: Inactivation Kinetics and Mechanisms" University of Califonia - Berkeley, May 8, 2009.
39. "Safe Global Water" University of Dar Es Salaam, Dar Es Salaam, Tanzania, May 18, 2009
40. "Safe Global Water" Swiss Federal Institute of Water Science and Technology, Duebendorf, Switzerland, May 26, 2009
41. “Advances in Reverse Osmosis (RO) and Nanofiltration (NF) Membrane Science and Technology” International Water Association (IWA) 6th Leading-Edge Technology (LET) Conference, Singapore, June 23-25, 2009.
42. "Control of Emerging waterborne Viral Pathogens: Inactivation Kinetics and Mechanisms" Association of Environmental Engineering and Science Professors Research and Education Conference, The University of Iowa, Iowa City, Iowa, July 26-29, 2009.
43. "Control of Emerging waterborne Viral Pathogens: Inactivation Kinetics and Mechanisms" XVIII International Materials Research Congress, Cancun, Mexico, August 16-21, 2009
44. "Sustainability in Supplying Safe Drinking Water to Rural Communities of Developing Countries" School of Civil Engineering, Purdue University, October 21, 2009.
45. "Control of Emerging Waterborne Viral Pathogens: Inactivation Kinetics and Mechanisms" Purdue Water Community, Purdue University, October 21, 2009.
46. "Control of Emerging Waterborne Viral Pathogens: Inactivation Kinetics and Mechanisms: Sustainability in Supplying Safe Drinking Water to Rural Communities of Developing Countries" University of California - Riverside, October 30, 2009.
47. "Sustainability in Supplying Safe Drinking Water to Rural Communities of Developing Countries" University of Oklahoma, Norman, Oklahoma, January 22, 2010.
48. "Sustainability in Supplying Safe Drinking Water to Rural Communities of Developing Countries" Department of Civil and Environmental Engineering, Rice University, February 26, 2010.
49. "Advances in Reverse Osmosis (RO) and Nanofiltration (NF) Membrane Science and Technology" KAUST Economic Development International Symposium on Economic and Technological Challenges in Membrane-Based Water Desalination, Shanghai, China, May 6, 2010.

50. "Advances in Reverse Osmosis (RO) and Nanofiltration (NF) Membrane Science and Technology" Nanomecourse on Nano-structured materials and Membranes for Health and Sustainable Water, University of Twente, The Netherlands, April 6-16, 2010.
51. "Control of Emerging Waterborne Viral Pathogens: Inactivation Kinetics and Mechanisms" Nanomecourse on Nano-structured materials and Membranes for Health and Sustainable Water, University of Twente, The Netherlands, April 6-16, 2010.
52. "Sustainability in Supplying Safe Drinking Water to Rural Communities of Developing Countries" Nanomecourse on Nano-structured materials and Membranes for Health and Sustainable Water, University of Twente, The Netherlands, April 6-16, 2010.
53. "Safe Global Water: Emerging Waterborne Viral Pathogens: Inactivation Kinetics and Mechanisms" Gordon Research Conference, Environmental Science: Water, Holderness School, Holderness, New Hampshire, June 20-25, 2010.
54. "Avances en la tecnologia del agua para un desarrollo sostenible" Water Technology Center (CETaqua), Aguas de Barcelona (AGBAR), Polytechnic University of Catalunya (UPC), and Consejo Superior de Investigaciones Cientificas (CSIC), Cornella, Spain, July 19, 2010
55. "Emerging Waterborne Viral Pathogens: Inactivation Kinetics and Mechanisms" Water Technology Center (CETaqua), Aguas de Barcelona (AGBAR), Polytechnic University of Catalunya (UPC), and Consejo Superior de Investigaciones Cientificas (CSIC), Barcelona, Spain, July 26, 2010.
56. "Advances in Reverse Osmosis (RO) and Nanofiltration (NF) Membrane Science and Technology" Water Technology Center (CETaqua), Aguas de Barcelona (AGBAR), Polytechnic University of Catalunya (UPC), and Consejo Superior de Investigaciones Cientificas (CSIC), Barcelona, Spain, July 26, 2010.
57. "Science and Technology for Safe Global Water" Water for Life Seminar Series, University of Illinois at Urbana-Champaign, Urbana, Illinois, September 10, 2010.
58. "Science and Technology Advances for Global Safe Water" Plenary Presentation at the 8th International Water Association (IWA) Leading Edge Technology (LET), Amsterdam, The Netherlands, June 6-10, 2011.
59. “Science and Technology Advances for Safe Global Water” Association of Environmental Engineering and Science Professors Lecture at the American Water Works 2011 Association Annual Conference and Exposition, Washington, D.C. 2011
60. “Science and Technology Advances for Safe Global Water”, Yale University, Department of Chemical Engineering Henske Lecture, New Haven, CT 2011
61. “Science and Technology Advances for Safe Global Water”, Georgian Institute of Technology, 2011 Association Environmental Engineering Students Distinguished Lecturer, Atlanta, GA 2011
62. “Science and Technology Advances for Safe Global Water” Johns Hopkins University, Department of Geography & Environmental Engineering M. Gordon Wolman Seminar Series and Global Water Program, Baltimore, MD 2012
63. UIUC Safe Global Water Initiative Illinois Water 2012 Conference Urbana, IL 2012
64. “Advancing Disinfection Science and Technology for Safe Water”, Gordon Research Conference, Disinfection By-Products, Mount Holyoke College, South Hadley, MA 2012
65. “Emerging Challenges and Opportunities in Water Quality Control Engineering”, Suez Environnement 7th World Technical Congress Paris, France 2013

66. "Changes in RO/NF Membrane Performance Resulting from Physico-Chemical Transformation of Their Active Layers" 246th American Chemical Society National Meeting Indianapolis, IN 2013
67. "Science and Technology Advances for Safe Global Water" Opening Keynote, University of Notre Dame, Advanced Diagnostics & Therapeutics Symposium on Diagnostics for Developing World Applications South Bend, IN 2013.
68. Science and Technology Advances for Safe Global Water Closing Plenary, Michigan State University Environmental Science and Policy Program Research Symposium: Water for a Sustainable World, East Lansing, MI 2013.
69. Ozone in Water Treatment Suez Environnement Scientific Advisory Session on Ozonation, Croissy sur Seine, France 2013.
70. Elucidating the mechanisms of viral pathogen inactivation with chlorine for the ultimate goal of developing biosensors capable of detecting infectious viruses in water 6th International Water & Health Seminar Cannes, France 2014.
71. Changes in RO/NF Membrane Performance Resulting from Physico-Chemical Transformation of Their Active Layers Water Technology Center (CETaqua), Aguas de Barcelona (AGBAR), Polytechnic University of Catalunya (UPC), and Consejo Superior de Investigaciones Cientificas (CSIC) Barcelona, Spain 2014.
72. Future of Civil and Environmental Engineering Research and Education Universidad National de Colombia Bogota, Colombia 2014.
73. "Branding Civil Engineering: Rediscovering Our Narrative" Keynote presentation for Track 1 of QS Asia Summit on Engineering World-class Research, Education and Academic Management, Organized jointly by College of Engineering, Nanyang Technological University (NTU) and QS Asia, Singapore, June 8-10, 2015
74. "Science and Technology Advances for Safe Global Water" Infection Biology Working Group. Seminar series, Urbana, IL 2015.
75. Assessing the Performance of Point-of-Use Drinking Water Treatment Technologies: Mechanisms of Adenovirus Inactivation from Exposure to Free Chlorine (Baseline Disinfectant)" Workshop on Advanced Materials and Technologies To Enable Decentralized Water Treatment and Reuse, Guangzhou, China 2015.
76. "Science and Technology Advances for Safe Global Water: Emerging Challenges and Opportunities in Water Quality", XXVIII Congreso Colombiano de Ingeniería Química Bogota, Colombia 2015.
77. "Science and Technology Advances for Safe Global Water: Emerging Challenges and Opportunities", 2nd iSEE Congress on .Water Planet, Water Crises? Meeting the World's Food, Water, Energy Needs Sustainably. Urbana, IL 2015.
78. "Reverse Osmosis/Nanofiltration (RO/NF) Membrane Treatment of Disinfected Water: Characterizing TOX in Membrane and Fouling Layers by Rutherford Backscattering Spectrometry (RBS)", Gordon Research Conference on Disinfection By-Products, Mount Holyoke College, South Dahley, MA 2015.
79. "Novel Nanofiltration Membrane Active Layers with Dendritic and Macromolecular Building Blocks" , Keynote presentation at Session 5 Advanced Materials – Nanotechnology and New Membranes of the 13th International Water Association Leading Edge Conference on Water and Wastewater Technologies, Jerez de la Frontera, Spain, 2016.

80. “East Africa Safe Water Projects: Building the Global Leaders of Tomorrow, Through International Experience Today” Champaign West Rotary Club, Champaign, IL, 2017.

5. Research Expertise

1. Physico-chemical Water and Wastewater Treatment Processes Including: Air Stripping, Disinfection, Membranes, Oxidation-Reduction, Sorption
2. Sustainable Approaches for Global Safe Drinking Water and Sanitation

6. Publications

Chapters in Books

1. C.L. Acker, C.K. Colvin, B.J. Mariñas, J.C. Lozier “Assessing the Integrity of Reverse-Osmosis Spiral-Wound Membrane Elements with Biological and Non-Biological Surrogate Indicators”, Chapter 10 in Membrane Practices in Water Treatment, S.J. Duranceau, Technical Editor, AWWA Trends in Water Series, American Water Works Association, Denver, CO, 2001.
2. B. Zhang, B.J. Mariñas and L. Raskin, “Use of molecular probes to study biofilms”, P. Lens, A.P. Moran, T. Mahony, P. Stoodley, V. O’Flaherty (Eds.), Biofilms in Medicine, Industry and Environmental Biotechnology, London, UK: IWA Publishing, 2003, pp. 352-374.
3. Snoeyink, V. L., Campos, C., Li, Q., Schideman, L.C. and Mariñas, B. J. “Application of Powdered Activated Carbon in the Floc Blanket Reactor/Ultrafiltration Process.” In Water Research and Water Supply in the 21st Century, ed. Y. Watanabe and N. Funamizu, Hokkaido University Press, Sapporo, Japan, 2003.
4. Lozier, J. C.; Kitis, M.; Kim, J. H.; Mi, B.; Mariñas, B. J. “Evaluation of Biologic and Nonbiologic Methods for Assessing Virus Removal by and Integrity of High Pressure Membrane Systems.” Membrane Treatment for Drinking Water & Reuse Applications: A Compendium of Peer-Reviewed Papers. Edited by Howe, K. J., American Water Works Association, Denver, CO, 2006, pp. 399-420.

Articles in Peer-Reviewed Journals

1. B.J. Mariñas and R.E. Selleck (1987), "Desalination of Agricultural Drainage Return Water. II. Analysis of the Performance of a 13,000 gpd RO Unit", Desalination, 61(3), pp. 263-274.
2. V. Diyamandoglu, B.J. Mariñas and R.E. Selleck (1990), "Stoichiometry and Kinetics of the Reaction of Nitrite with Free Chlorine in Dilute Aqueous Solution", Environmental Science & Technology 24(11), pp. 1711-1716.
3. R.E. Selleck, B.J. Mariñas (1991) "Analyzing the Permeation of Organic Chemicals Through Plastic Pipes", Journal American Water Works Association, 83(7), pp. 92-97.
4. B.J. Mariñas (1991), "Reverse Osmosis Technology for Wastewater Reuse", Water Science and Technology, 24(9), pp. 215-227.
5. M.R. Wiesner, M.M. Clark, T.G. Jacangelo, B.W. Lykins, Jr., B.J. Mariñas, C.R. O'Melia, B.E. Rittmann, M.J. Semmens (1992), "Committee Report: Membrane

Processes in Potable Water Treatment", Journal of American Water Works Association, 84(1), pp. 59-67.

6. B.J. Mariñas, R.E. Selleck (1992), "Reverse Osmosis Treatment of Multicomponent Electrolyte Solutions", Journal of Membrane Science, 72(3), pp. 211-230.
7. B.J. Mariñas, S. Liang, E.M. Aieta (1993), "Modeling Hydrodynamics and Ozone Residual Distribution in a Pilot-Scale Ozone Bubble-Diffuser Contactor", Journal of American Water Works Association, 85(3), pp. 90-99.
8. B.D. Blank, B.J. Mariñas, K. Corsaro, K.L. Rakness (1993), "Enhancement of Wastewater Disinfection Efficiency in Full-Scale Ozone Bubble-Diffuser Contactors", Ozone Science & Engineering, 15(4), pp. 295-310.
9. T.M. Whitworth, B.J. Mariñas, S.J. Fritz (1994) "Isotopic Fractionation and Overall Permeation of Lithium by a Thin-Film Composite Polyamide Reverse Osmosis Membrane", Journal of Membrane Science, 88, pp. 231-241.
10. B.J. Mariñas, R.-A. Li (1994), "Composite Sorption of Pure Vapors on Polyolefins, Carbons, and Minerals", ASCE Journal of Environmental Engineering, 120(5), 1207-1229.
11. C.-F. Chiou, B.J. Mariñas, J.Q. Adams (1995), "Modified Indigo Method for Gaseous and Aqueous Ozone Analyses", Ozone Science & Engineering, 17, pp. 329-344.
12. D. Jolis, R. Campana, R. Hirano, P. Pitt, B.J. Mariñas (1995) “Desalination of Municipal Wastewater for Horticultural Reuse: Process Description and Evaluation”, Desalination, 103 (1-2), pp. 1-10.
13. B.J. Mariñas, R.I. Urama (1996), "Modeling Concentration-polarization in Reverse Osmosis Spiral-wound Elements", ASCE Journal of Environmental Engineering, 122(4), pp. 292-298.
14. R.I. Urama, B.J. Mariñas (1997), "Mechanistic Interpretation of Solute Permeation through a Fully Aromatic Polyamide Reverse Osmosis Membrane", Journal of Membrane Science, 123, pp. 267-280.
15. C.-H. Hung, B.J. Mariñas (1997), “Role of Chlorine and Oxygen in the Photocatalytic Degradation of Trichloroethylene Vapor on TiO2 Films” Environmental Science & Technology, 31(2), pp. 562-568.
16. C.-H. Hung, B.J. Mariñas, “Role of Water in the Photocatalytic Degradation of Trichloroethylene Vapor on TiO2 Films” Environmental Science & Technology, 31(5), pp. 1440-1445.
17. N.K. Hunt, B.J. Mariñas, “Escherichia Coli Inactivation with Ozone”, Water Research , 31(6), pp. 1355-1362.
18. J.C. Little, B.J. Mariñas (1997), “Crossflow versus Counterflow Air-Stripping Towers”, ASCE Journal of Environmental Engineering, 123(7), pp. 668-674.
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20. M.M. Clark, S. Allgeier, G. Amy, S. Chellar, F. DiGiano, M. Elimelech, S. Freeman, T.G. Jacangelo, K. Jones, J.-M. Laine, J. Lozier, B.J. Mariñas, R. Riley, J. Taylor, M. Thompson, J. Vickers, M.R. Wiesner, A. Zander, I. Baudin, C. Combe, S. Duranceau, N. Kocherginsky, J. Manem, M. Mickley, J. Pellegrino, H. Ridgway, V. Urbain (1998), "Committee Report: Membrane Processes", Journal of American Water Works Association, 90(6), pp. 91-105.

21. C. Campos, B.J. Mariñas, V.L. Snoeyink, I. Baudin, J.M. Laine (1998), "Adsorption of Trace Organic Compounds in CRISTAL Processes," Desalination,117, pp. 265 271.
22. J.L. Rennecker; B.J. Mariñas; J.H. Owens; E.W. Rice (1999) “Inactivation of Cryptosporidium parvum Oocysts with Ozone”, Water Research, 33(11), pp. 2481 2488.
23. N.K. Hunt, B.J. Mariñas (1999), “Escherichia Coli Inactivation with Ozone: Chemical and Inactivation Kinetics”, Water Research, 33(11), pp. 2633 2641.
24. B.J. Mariñas, J.L. Rennecker, S. Teefy, E.W. Rice (1999) “Assessment of Ozone Disinfection Efficiency with Fluorescent-Dyed Polystyrene Microspheres: Full-Scale Demonstration”, Journal of the American Water Works Association, 91(9), pp. 79-89.
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26. K.M. Ruffell, J.L. Rennecker, B.J. Mariñas (2000) “Inactivation of Cryptosporidium parvum Oocysts with Chlorine Dioxide,” Water Research, 34(3), pp. 868-876.
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28. C. Campos, B.J. Mariñas, V.L. Snoeyink, I. Baudin, J.M. Laine (2000), "Adsorption of Organic Compounds in Powdered Activated Carbon Membrane Filtration Systems Part II: Model Applications," ASCE Journal of Environmental Engineering, 126(2), pp. 104-111.
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30. C. Campos, V.L. Snoeyink, B.J. Mariñas, I. Baudin, J.M. Laine (2000), "Atrazine Removal by Powdered Activated Carbon in Floc Blanket Reactors," Water Research, 34(16), pp. 4070-4080.
31. C. Campos, L.J. Schimmoller, B.J. Mariñas, V.L. Snoeyink, I. Baudin; J.-M. Laine (2000). “Application of Powdered Activated Carbon to a Floc Blanket Reactor – Ultrafiltration System for the Removal of Dissolved Organic Carbon,” Journal of the American Water Works Association, 92(8), pp. 69-83.
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46. M.A. Larson, B.J. Mariñas (2003) "Inactivation of Bacillus subtilis Spores with Ozone and Monochloramine," Water Research, 37(4), pp. 833-844.
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53. M. Kitis, J.C. Lozier, J.-H. Kim, B. Mi, B.J. Mariñas (2003) “Evaluation of Biologic and Non-Biologic Methods for Assessing Virus Removal by and Integrity of High Pressure Membrane Systems”, Water Science and Technology: Water Supply, 3(5-6) pp. 81-92.
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135. T. Maugin, J.-P., Croue, T. Renkens, A.M. Saenz de Jubera, B.J. Mariñas, S. Rapenne "Fate of Reverse Osmosis (RO Membranes during Desalination of Chloraminated Seawater" Proceedings of the 2011 American Water Works Association Membrane Technology Conference & Exposition (MT), Long Beach, California, March 28-31, 2011.
136. T. Vonder Haar, B. Vazquez, M. Page, J. Shisler, B. Mariñas. "Inactivation of Coxsackievirus by Chlorine, Silver, and Solar Disinfection for Safe Global Water." Proceedings of the Water Environment Federation, Disinfection 2011, pp. 64-71(8). Cincinnati, OH. April 2011.
137. S.Y. Kimura, B.J. Mariñas, .Emerging Disinfection By-Products from the Reactions of Monochloramine and Aldehydes in Drinking Water., Preprints Paper for the International Water Association (IWA) 2011 Aspire Conference, Tokyo, Japan, October 2-6, 2011.
138. Y. Komaki, B.J. Mariñas, M.J., Plewa "Elucidating DNA repair kinetics of haloacetonitriles in Chinese hamster ovary cells and effect on cell cycle arrest" Environmental Mutagen Society, Montréal, Québec, October 15 . 19, 2011. Abstract included in Environmental and Molecular Mutagenesis, 52(S1), S42.

139. T.L. Renkens, L. Valentino, T.L. Maugin, N. Colom Cruz, J.-P. Croue, S. Logette, E. Gaudichet-Maurin, and B.J. Marinas "Effects of Chloraminated Seawater on the SW30HR Reverse Osmosis Membrane" International Water Association (IWA) World Water Congress & Exhibition in Busan, Korea September 16-21, 2012
140. A.M. Gall, V. Madadi, J.L. Shisler, B.J. Marinas "The Safe Global Water Institute: An integrated, collaborative approach for improving drinking water and sanitation globally" Water Environment Federation Disinfection & Public Health 2013, Indianapolis, Indiana, February 24-26, 2013.
141. T. Vonder Haar, B. Marinas, J. Shisler "Kinetics and Mechanism of Coxsackievirus B5 Inactivation by Free Chlorine for Safe Global Water" Water Environment Federation Disinfection & Public Health 2013, Indianapolis, Indiana, February 24-26, 2013.
142. T. Maugin, L. Valentino, B.J. Marinas, J.-P. Croué "Use of RBS for understanding the impact of hypohalogenous acids on PA membrane" Proceedings of the 2013 American Water Works Association Water Quality Technology Conference, Long Beach, California, Nov. 3-7, 2013.

7. Grants, contracts and gifts

1. 1992-96 (at Purdue), Disinfection Efficiency in Ozone Bubble Diffuser Contactors, U.S.Environmental Protection Agency, $157,390
2. 1994-96 (at Purdue), Dialysis/Reverse Osmosis (D/RO) Treatment Process for the Control of Trace Contaminants in Drinking Water, Purdue Research Foundation Grant, $20,400
3. 1995-97, Non-Biological Surrogate Indicator for Assessment of Water Disinfection Efficiency, U.S. Environmental Protection Agency, $130,000
4. 1995-96, Enhancement of Lead Leaching Rate and Development of Solution Composition Control Methods for Copper(II) Treatment Process, Globe Valve Corp. Delphi, Indiana, $108,114
5. 1995-96, Ozone Demand Bench Investigation, Camp, Dresser & McKee, Inc., $36,500
6. 1996-97, Environmental Factors Affecting the Movement of Lead in Disposal Environments, U.S. Army Construction Engineering Research Laboratories, $64,896
7. 1996, Beckman Instrumentation for Environmental Biotechnology Research, Beckman Instruments, $19,200
8. 1997, Titanium Dioxide Photocatalytic Treatment of Organic Vapor Emissions: Process Efficiency Assessment, U.S. Army Construction Engineering Research Laboratories, $40,000
9. 1997-1998, Microbial Removal and Integrity Monitoring of High-Pressure Membranes Used for Water Treatment, American Water Works Association Research Foundation through CH2M Hill, $63,189
10. 1997-1998, Technical Support for Physical/Chemical Research Treatment and Control Technology Services, Batelle Memorial Institute, Columbus, Ohio, $36,002
11. 1998-1999, Controlling Cryptosporidium in Drinking Water Supply for Small Communities, U.S. Geological Survey through Illinois Water Resources Center, $76,000
12. 1998-1999, Assessment of the Effect of Various Cleaning Procedures and Disinfectant Exposure to the Time Lag Associated with Cryptosporidium parvum Oocyst Inactivation, University of Illinois Research Board, $23,630

13. 1998-2000, Bromate Formation and Control During Ozonation of Low Bromide Waters, American Water Works Association Research Foundation through Montgomery Watson, $139,374
14. 1998-2000, Molecular Probe Technology for Studying Biofilms in Drinking Water Distribution Systems, U.S. Environmental Protection Agency, $260,000
15. 1998, Initial Assessment of the Inactivation Capability of Permanganate with Respect to Cryptosporidium parvum Oocysts, Carus Chemical Company, $26,788
16. 1998-1999, Titanium Dioxide Photocatalytic Treatment of Xylene Vapor Emissions from Surface Coating Operations, U.S. Army Construction Engineering Research Laboratories, $20,000
17. 1998-2004, Integrated Approach for the Control of Cryptosporidium parvum Oocysts and Disinfection By-Products in Drinking Water Treated with Ozone, U.S. Environmental Protection Agency, $367,427
18. 2000-2002, Integral Optimization of Ozone Disinfection Systems with Fluorescent-Dyed Polystyrene Microspheres, American Water Works Association, $173,739
19. 2000-2002, Impact of Water Quality on the Inactivation of Bacterial and Viral Pathogens, American Water Works Association Research Foundation through Vivendi Water, $10,000
20. 2000, Sequential Disinfection in Food Processing. Phase I: Initial Process Assessment, MBI International, $20,000
21. 2000-2001, Inactivation of Cryptosporidium parvum oocysts in swine wastewater, NSF STTP through MBI International, $8,000
22. 2000-2003, Assessment and Development of Low-Pressure Membrane Integrity Monitoring Tools, American Water Works Association Research Foundation through Carollo Engineers, $119,899
23. 2000-2001, Kinetics and Mechanisms of Fast Reactions Involved in the Formation of Drinking Water Disinfection By-Products, University of Illinois Research Board, $20,000
24. 2000-2001, Inactivation of Cryptosporidium parvum Oocysts with ozone. Phase I: Summer Water and Fall Floodwater Studies, Vivendi-Paris- France, $33,721
25. 2001-2005, M/DBP Model for the Optimization of Full-Scale Process Design and Operation. Phase I: Ozone Disinfection – Cryptosporidium parvum Oocyst Inactivation and Bromate Formation Control, U.S. Environmental Protection Agency, $199,933
26. 2001-2005, Solute displacement and pore Blocakage Phenomena in Hybrid Sorption-Membrane Processes, National Science Foundation, $479,010
27. 2003-2004, Low and Medium Pressure Ultraviolet Light technology for Control of Cryptosporidium parvum Oocysts, Viruses, and Bacterial Spores in Seasonal Waters, Syndicat des Eaux d'Ile de France, Paris, France, 84,000 Euros ~$100,000
28. 2003-2005, Strategies for integrated Control of Surface Water Pathogens and Biological Agents, U.S. Environmental Protection Agency through The Midwest Technology Assistance Center for Small Public Water Systems, $25,000
29. 2003-2006, Improving the Novel Upflow Filter-Ultrafiltration (UF-UF) Process with Mathematical Modeling and Advances in Adsorbent Technology, NSF STC-Advanced Materials for Water Purification systems, $259,163
30. 2003-2009, Transport of Solutes and Macromolecules through Reverse Osmoisis and Nanofiltration Membranes, National Science Foundation, $473,100

31. 2004-2010, Reverse Osmosis/Nanofiltration (RO/NF) Membrane Systems with enhanced Water Permeability and Contaiminant Rejection Capability, NSF STC-Advanced materials for Water Purification Systems, $240,000/y
32. 2005-2010, Control of Emerging Viral Pathogens with Photolytic, Photocatalytic and Synergistic Hybrid Photo(cata)lytic/Chemical Disinfection Processes, NSF STC – Advanced Materials for Water Purification Systems, $130,000/y
33. 2006-2007, Inactivation Kinetics of Adenovirus by Ozone, Ultraviolet Light and Free Chlorine. Phase I, Syndicat des Eaux d'Ile de France and Anjou Recherche, France, $116,762
34. 2008-2009, Inactivation Kinetics of Coxsackievirus by Ozone, Ultraviolet Light and Free Chlorine, Syndicat des Eaux d'Ile de France and Anjou Recherche, France, $125,000
35. 2008-2010, Using molecular tools to define normal/baseline microbial community structure of drinking water biofilms and provide insight into periods of compromised water distribution system, USA Water Research Foundation and Singapore PUB, $250,000,
36. 2010-2015, Collaborative Research in Water Desalination and Reuse Science and Technology, King Abdullah University of Science and Technology, $3,000,000
37. 2010-2011, Inactivation of Adenovirus, Coxsackievirus and Norovirus with Polychromatic Medium Pressure Ultraviolet Light, Syndicat des Eaux d'Ile de France and Anjou Recherche, France, $131,949
38. 2010-2012, Advanced Materials for the Purification of Water with Systems, NSF Science and Technology Center Program, $4,000,000
39. 2010-2013, Toxicity of Drinking Water Associated with Alternative Distribution System Rehabilitation Strategies, USEPA NCER STAR Program, $600,000
40. 2010-2011, Filters for Viral Pathogen Inactivation, PPG Inc., $128,326
41. 2010-2011, Sustainable Agriculture for the Water Catchment Protection Area in Ntisaw, Cameroon, USEPA P3 Program, $10,000
42. 2012-2013, Inactivation Kinetics of Adenovirus, Coxsackievirus and Norovirus by Ultraviolet Light, Syndicat des Eaux d.Ile de France $131,949
43. 2010-2013, Reverse Osmosis Desalination of Chloraminated Sea and Brackish Water: Effects of Oxidizing Agents, and Genotoxic/Reactive Disinfection By-products on Membrane Performance and Life Cycle, King Abdullah University of Science and Technology, $300,000
44. 2012-2014, Nitrogenous Disinfection By-Products in Reclaimed Wastewater Effluents: Chemistry, Toxicity and Control Strategies King Abdullah University of Science and Technology, $375,000
45. 2012-2014, 8th Exchange Engineer under the Exchange Program of the United States/Japan Bilateral Agreement on the Environment: Sewage Treatment Technology Japan Sewage Work Agency $116,762
46. 2012-2014, Science and Technology Center of Advanced Materials for the Purification of Water with Systems (WaterCAMPWS) NSF $1,018,871
47. 2012-2015, Safe Global Water Institute UIUC College of Engineering $600,000
48. 2013-2014, Advanced Characterization of Oxidation Processes Involved in the Degradation of Reverse Osmosis Memranes. Control and Prevention Tools (PROXI), CETaqua, Centro Tecnologico del Agua, Fundacion Privada, Barcelona, Spain, $93,800.

49. 2014-2015, In Vitro Biological Assays for N9674 Project EXPOL, Suez Environnement, Le Pecq, France $96,196.
50. 2014-2017, Smart Water Disinfection: A Holistic Approach from Benchside to Marketplacem UIUC Institute for Sustainability, Energy and the Environment (iSEE) $474,800.
51. 2015-2018, An Interdisciplinary Approach to Novel Membranes Tailored to Achieve Water Clean Up Key Challenges, BP-International Center for Advanced Materials $1,599,752.
52. 2017-2020, CBET-EPSRC A Game-Changing Approach for Tunable Membrane Development: Novel Covalent Organic Framework Active Layers Supported by Solvent Resistant Materials, National Science Foundation, $450,000 (recommended for funding by both NSF CBET and EPSRC).

8. Research Advising

M.S. Thesis Students (at UIUC unless otherwise indicated)

1. Connie L. Bogard, 1992 (Purdue)
2. Karen M. Zapp, 1992 (Purdue)
3. Brad D. Blank, 1992 (Purdue)
4. Erik J. Pedersen, III, 1992 (Purdue)
5. Candace J. Carter, 1992 (Purdue)
6. Ren-An Li, 1992 (Purdue)
7. R. Melida Escalante-Estrada, 1993 (Purdue)
8. Yi Jiang, 1994 (Purdue)
9. Sharon A. Waller, 1994 (Purdue)
10. Chris M. Martel (co-advised with J.T. Pfeffer), 1996
11. Christos Athanassopoulos, 1997
12. Jason L. Rennecker, 1997
13. Christopher W. Stori, 1997
14. Christian K. Colvin, 1999
15. Courtney L. Acker, 1999
16. Kristen M. Ruffell, 1999
17. Kok Keong Lew, 1999
18. Benito Corona-Vasquez, 2000
19. Amy M. Driedger, 2000
20. Lynnette M. Ramirez, 2001
21. Mattew A. Larson (co-advised with M.J. Rood), 2001
22. Sara A. Rubin, 2001
23. George Tang, 2002
24. Jason Curl, 2003
25. Kwabena Adu-Sarkodie, 2003
26. Kwanrawee Sirikanchana, 2003
27. Ning Tong (co-advised with L. Raskin), 2003
28. Orlando Coronell Nieto, 2004
29. Li Ding (co-advised with V.L. Snoeyink), 2004
30. Nathan Dunahee, 2004
31. Sarah Haidri, 2004

32. Martin Page, 2004
33. Chad Gladfelter (co-advised with V.L. Snoeyink), 2004
34. Jeanne Luh, 2005
35. Matthew Charles, 2006
36. LaTeresa Shearill, 2007
37. Juan Pablo Vicuña, 2007
38. Joel Minier Matar, 2008
39. Benjamin Finnegan, 2009
40. Theresa Vonder Haar, 2009
41. Corinne Kluge, 2009
42. Aimee Gall, 2010
43. Tennie Renkens, 2012
44. Aimee Tu, 2012
45. Bernardo Vazquez Bravo, 2012
46. Dana Al-Qadi 2013
47. Lauren Valentino 2013
48. Bryan Smith 2014
49. Kentaro Mizuta 2014
50. Daniel Mosiman, 2015
51. Wen Cong, in progress

Ph.D. Students

1. Ko-Ming Wang, 1994 (Purdue)
2. Chung-Fan Chiou, 1994 (Purdue), Founding Chief Technical Officer, Craker, Industrial Technology Research Institute, Chutung, Hsinchu, Taiwan, Republic of China.
3. Hsing-Ting Lan, 1995 (Purdue)
4. Nimrata K. Hunt, 1995 (Purdue), Marketing Manager, IDEXX Laboratories, Westbrook, Maine
5. Chung-Hsuang Hung, 1995 (Purdue), Assistant Professor, Department of Safety, Health and Environmental Engineering, National Kaohsiung First University of Science and Technology, Kaohsiung, Taiwan, Republic of China.
6. Richard I. Urama, 1996 (Purdue)
7. Chun-Ming Chen, 1998 (Purdue)
8. Erik J. Pedersen III, 1999 (Purdue)
9. Carlos Campos (co-advised with V.L. Snoeyink), 1999, Senior Vice President, Suez Environnement, Le Pecq, France
10. Jason L. Rennecker, 2001
11. Qilin Li (co-advised with V.L. Snoeyink), 2002, Associate Professor, Department of Civil and Environmental Engineering, Rice University, Houston, TX
12. Jae-Hong Kim, 2002, Professor, Department of Chemical and Environmental Engineering, Yale University, New Haven, CT
13. Hongxia Lei (co-advised with R.A. Minear), 2003, Water Quality Assurance Officer. City of Tampa Water Department, Tampa, FL
14. Benito Corona-Vasquez, 2004, Professor and Head, Department of Civil and Environmental Engineering, Universidad de Las Americas-Puebla, Cholula, Mexico
15. Lance Schideman (co-advised with V.L. Snoeyink), 2006, Research Scientist, Prairie Research Institute, University of Illinois at Urbana-Champaign, Urbana, IL

16. Baoxia Mi, 2006, Assistant Professor, Department of Civil and Environmental Engineering, University of California, Berkeley, CA
17. Kwanrawee Sirikanchana, 2007, Researcher, Chulabhorn Research Institute, Bangkok, Thailand
18. George Tang (co-advised with V.L. Snoeyink), 2007, Engineer, AECOM, Hong Kong
19. Priscilla To (co-advised with V.L. Snoeyink), 2008, Principal Environmental Engineer, Washington Suburban Sanitary Commission, Washington DC
20. Orlando Coronell Nieto, 2010, Assistant Professor, Department of Environmental Science and Engineering, University of North Carolina, Chapel Hill, NC
21. Li Ding (co-advised with V.L. Snoeyink), 2010 Adjunct Professor, Embry-Riddle Aeronautical University, Daytona Beach, FL
22. Tasuma Suzuki, 2010, Assistant Professor, Faculty of Engineering, Yamaguchi University, Japan
23. Martin Page, 2010, Researcher, US Army Corp of Engineers, Engineer Research and Development Center, Construction Engineering Research Laboratory, Champaign, Illinois
24. Jeanne Luh, 2012, Program Coordinator, The Water Institute,, University of North Carolina, Chapel Hill, NC
25. Susana Kimura, 2013, Postdoctoral Fellow, Post-doctoral Fellow, University of South Carolina, Columbia, SC
26. Yukako Komaki, 2013, Postdoctoral Fellow, Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, Urbana, IL
27. Ana M. Saenz de Jubera, 2013, Industrial Filtration Applications Specialist, 3M Purification, Inc., Meriden, CT
28. Aimee Gall, 2016
29. Bernardo Vazquez, in progress
30. Lauren Valentino, in progress
31. Trang Vu, in progress
32. Abiodun Fatai Oki, in progress
33. Daniel Mosiman, in progress

9. Professional Society Service:

Organizer and Chair, “Safe Global Water Institute: Interactive Partnership Discussions Session”, 3rd IWA Development Congress & Exhibition, Nairobi, Kenya, October 14-17, 2013.

Organizer and Chair, “Assessing Global Challenges at the Water – Health Nexus Session” 3rd IWA Development Congress & Exhibition, Nairobi, Kenya, October 14-17, 2013.

Chair, Safe Global Water and Sanitation Summit, Arusha. Tanzania, January 30-February 1, 2013.

Program Committee Member, 8th International Conference on Water Reclamation & Reuse, Barcelona, Spain, September 26-29, 2011.

Co-organizer "Water and Wastewater Treatment Technologies for Developing Countries Session" 8th International Water Association (IWA) Leading Edge Technology (LET), Amsterdam, The Netherlands, June 6-10, 2011.

Program Committee Member, 8th International Conference on Water Reclamation & Reuse, Barcelona, Spain, September 26-29, 2011.

Co-Principal Investigator, Research Project “Using molecular tools to define normal/baseline microbial community structure of drinking water biofilms and provide insight into periods of compromised water distribution system”, AWWA WRF and Singapore PUB, 2008-2012.

Member, Journal of the American Water Works Association (JAWWA) Peer-review Editorial Board, 2006-2011

Member, AwwaRF PAC for Research Project “Exploring Formation and Control of Emerging DBPs in Treatment Facilities: Halonitromethanes and Iodo-trihalomethanes” 2007-2011.

Co-organizer, "Interfacial and Disinfection Chemistry: Fate, Transport, and Adsorption of Pathogens, Nanoparticles, Biocolloids, and Trace Organics in Aquatic Systems" Honolulu, Hawaii, December 15-20, 2010.

Chair, Materials Science of Water Purification Symposium Q Session Q1 - Membranes, 2009 Spring Meeting of the Materials Research Society, San Francisco, CA, April 14-16, 2009.

Associate Editor, American Society of Civil Engineers Journal of Environmental Engineering, 2006-2008

Co-organizer, “Advances in Drinking Water Disinfection and Disinfection Byproduct Management” ACS National Meeting, New Orleans, LA, April 6-10, 2008

Chair, Session on New Membrane Materials, AWWA Membrane Technology Conference, Phoenix, Arizona, March 9, 2005.

Member, AwwaRF PAC for Research Project "Ozonation by Means of Membranes” 2003-08.

Member, AwwaRF PAC for Research Project "Development of Particle Actinometer” 2002-07.

Participant, “National Science Foundation Workshop: Frontiers in Environmental Engineering Education.” Arizona State University, Tempe, AZ, Jan’07.

Chair, “Chemistry for a Sustainable Water Supply Theme,” ACS National Meeting, Chicago, IL, March 25-29, 2007.

Co-organizer, “Membrane Technology for Water Reuse Symposium,” ACS National Meeting, Chicago, IL, March 27-29, 2007.

Co-organizer, “Adsorption Processes for Drinking Water Treatment Symposium,” ACS National Meeting, Chicago, IL, March 27-29, 2007.

Co-organizer, “Catalytic Control of Emerging Micropollutants Symposium,” ACS National Meeting, Chicago, IL, March 27-29, 2007.

Co-organizer, “Advances in Desalination of Sea and Brackish Water Symposium,” ACS National Meeting, Chicago, IL, March 27-29, 2007.

Co-organizer, “How Pure is Our Drinking Water: Advances in Detection and Quantitation of Water Contaminants Symposium,” ACS National Meeting, Chicago, IL, March 27-29, 2007.

Co-organizer, “Advances in Drinking Water Disinfection Processes Symposium,” ACS National Meeting, Chicago, IL, March 27-29, 2007.

Co-organizer, “Advances in Oxidation Processes for Water Treatment Symposium,” ACS National Meeting, Chicago, IL, March 27-29, 2007.

Invited Participant "Nanotechnology Enabled Water Treatment Workshop," Center for Biological and Environmental Nanotechnology (CBEN), Rice University, Houston, TX, February 25-27, 2007.
Chair, Session JJ2: Materials Synthesis for Water Treatment, 2006 Spring Meeting of the Materials Research Society, San Francisco, CA, April 17-21, 2006.
Chair, Session on Membrane Science and Processes, 2005 NSF Science and Technology Center WaterCAMPWS Symposium, Atlanta, GA, April 13-15, 2005.
Co-chair, Sessions on Innovative Technologies, 1st International Water Association (IWA) ASPIRE Conference and Exhibition, Singapore July 14, 2005.
Team Co-leader, NSF STC WaterCAMPWS – Interdisciplinary Disinfection Research Team Co-leader (2005-present)
Chair, NSF STC WaterCAMPWS – Research Committee (2004).
Thrust Leader, NSF STC WaterCAMPWS – Membrane Science and Processes (2004).
Member, Steering Committee for NSF Workshop on Advancing the Quality of Water (AQWA) Research Program Initiative (2003-2004).
Co-Principal Investigator, Research Project "Assessment and Development of Low-Pressure Membrane Integrity Monitoring Tool", AwwaRF, 2000-03.
Principal Investigator, Research Project "Integral Optimization of Ozone Disinfection Systems with Fluorescent-Dyed Polystyrene Microspheres", AwwaRF, 2000-02.
Co-Principal Investigator, Research Project "Impact of Water Quality on the Inactivation of Bacterial and Viral Pathogens", AwwaRF 2000-02.
Member, AwwaRF PAC for Research Project "Improvement of the Ozonation Process Through the Use of Static Mixers", 1999-2003.
Co-Principal Investigator, Research Project "Bromate Formation and Control During Ozonation of Low Bromide Waters", AwwaRF, 1998-2000.
Co-Principal Investigator, Research Project "Microbial Removal and Integrity Monitoring of High-Pressure Membranes Used for Water Treatment" AwwaRF, 1997-98.
Invited Panelist, Panel on Issues and Options for E-Journal AWWA (~2000).
Member, AwwaRF PAC for Research Project "Modeling Dissolved Ozone Behavior in Ozone Contactors", 1991-94.
Chair, Session on Water Quality at Water Quality International, IAWPRC 16th Biennial Conference and Exposition, Washington, D.C., May 24-30, 1992.
Member, AEESP Awards Committee (1997-98)
Member, Membrane Technology Research Committee, AWWA, 1991-2000.
Secretary/Treasurer, Indiana Central Branch, ASCE, 1992-95.
Member, Advisory Committee for Research Project, WERF, "A Critical Review of Odor Control Equipment for Toxic Air Emissions Reduction", 1991-96.

10. Presentations

1. B.J. Marinas "Physico-Chemical Treatment Processes for Contaminated Groundwater Remediation", presented as part of a short course on "Effective Techniques for Contaminated Groundwater Treatment" organized by the University of Wisconsin -

Madison Extension, Madison, Wisconsin, November 12-14, 1990, November 11-13, 1991, November 9-11, 1992, and November 8-10, 1993.

2. B.J. Marinas "Treatment Methods for Disinfection, Strategies for the Control of Disinfection By-Products, Membrane Technology for Drinking Water Treatment, Treatment Processes for the Control of Synthetic and Volatile Organic Compounds", presented as part of a short course on "Water Treatment Plant Design" organized by the University of Wisconsin - Madison Extension, Madison, Wisconsin, November 12-16, 1990, December 16-20, 1991, November 16-20, 1992, and November 15-19, 1993.
3. B.J. Marinas, Presentation on "Water Contaminants" (four sessions) and "Environmental Laboratory" (four sessions) for 1990 and 1991 STEP/MITE Civil Engineering Program.
4. B.J. Marinas, Lecture on "Advanced Wastewater Treatment Processes" short-course organized by A.E. Staley Manufacturing Co., Lafayette, Indiana, May 20, 1992.
5. B.J. Marinas, Lecture on "Advanced Disinfection Processes" seminar organized by Indiana Water Pollution Control Association, Indiana Section of American Water Works Association, and Purdue University Continuing Education Program, West Lafayette, Indiana, August 21, 1992.
6. B.J. Marinas, Lecture on "Pollution Control Technology" short course organized by Purdue University Environmental Management and Engineering Program for Mobil Corporation, Princeton, New Jersey, March 1-9, 1993, June 24-July 2, 1993, and August 11-20, 1993.
7. B.J. Marinas “Inactivation of Cryptosporidium parvum oocysts with ozone, chlorine dioxide, free chlorine and monochloramine”. International Conference on Minimizing the Risk from Cryptosporidium and Other Waterborne Particles, April 19-23, 1999, Paris, France.
8. B.J. Marinas “Chemical Disinfection of Drinking Water”, and “Drinking Water Security Issues.” Presented at 2001 Ondeo Services Virtual Plant Workshop, Ferrieres-en-Brie, France, November 8 and 9, 2001.
9. H. Lei, E.J. Pedersen III, S.Y. Kimura, R.A. Minear, B.J. Mariñas "Kinetics of ClCN and BrCN Formation in Drinking Water" Poster presented at the 2006 Gordon Research Conference on Drinking Water Disinfection By-Products, Mount Holyoke College, South Hadley, MSA, August 13-18, 2006.
10. M.A. Page, A.L. Poole, B.J. Finnegan, J. Minier-Matar, S.Y. Kimura, T.A. Vonder Haar, J.L. Shisler, B.J. Marinas "Improving the Control of Viral pathogens by POU Technologies Used in Developing Regions" 2009 Water Environment Federation (WEF) Disinfection Conference, Atlanta, GA, February 28 - March 3, 2009.
11. O. Coronell, M. Gonzalez, A. Martinez Saenz de Jubera, D.G. Cahill, B.J. Marinas "Steric Effects on Ionic Contaminants in the Active Layer of Reverse Osmosis and Nanofiltration Membranes" Materials Science of Water Purification Symposium Q Session Q1 - Membranes, 2009 Spring Meeting of the Materials Research Society, San Francisco, CA, April 14-16, 2009.
12. J. Luh, B.J. MarinasÂ "Integrated approach f pathogens and the control of disinfection by-product formation" Poster presented at the Summit on the National Academy of Engineering Grand Challenges Meeting, Durham, NC, March 2-3, 2009.
13. T. Suzuki, T. Matthews, M. Gonzalez, O. Coronell, D. Cahill, B.J. Marinas "Partitioning of Water Contaminants into the Active Layer of Thin-film Composite Nanofiltration

Membranes." Materials Science of Water Purification Symposium Q Session Q1 - Membranes, 2009 Spring Meeting of the Materials Research Society, San Francisco, CA, April 14-16, 2009.

14. S.Y. Kimura, B. Curren, B.J. Mariñas, M.J. Plewa, E.D. Wagner,"Formation of Cyanogen Iodide in Drinking Water" Materials Science of Water Purification Symposium Q Poster Session Q3 - Catalysis and Disinfection, 2009 Spring Meeting of the Materials Research Society, San Francisco, CA, April 14-16, 2009.
15. J. Pals, Y. Kumada, E.D. Wagner, M.J. Plewa, B.J. Mariñas "Comparative DNA Damage and Repair Kinetics Study in Mammalian Cells by Chloro-, Bromo-, and Iodoacetic Acid". Materials Science of Water Purification Symposium Q Poster Session Q3 - Catalysis and Disinfection, 2009 Spring Meeting of the Materials Research Society, San Francisco, CA, April 14-16, 2009.
16. J.M. Wallace, R.Y. Milsk, E.D. Wagner, W.A. Mitch, B.J. Marinas, M.J. Plewa1 "Comparative Mammalian Cell Genotoxicity and Bacterial Mutagenicity of Nitrogenous Disinfection Byproducts (DBP)" Materials Science of Water Purification Symposium Q Poster Session Q3 - Catalysis and Disinfection, 2009 Spring Meeting of the Materials Research Society, San Francisco, CA, April 14-16, 2009.
17. J. Luh, B.J. Marinas "The Role of Bromide in the Formation of N-Nitrosodimethylamine (NDMA) by Monochloramine" Materials Science of Water Purification Symposium Q Poster Session Q3 - Catalysis and Disinfection, 2009 Spring Meeting of the Materials Research Society, San Francisco, CA, April 14-16, 2009.
18. T.A. Vonder Haar, M.A. Page, J.L. Shisler, B.J. Mariñas "Inactivation of Coxsackievirus by Ultraviolet Light and Monochloramine" Materials Science of Water Purification Symposium Q Poster Session Q3 - Catalysis and Disinfection, 2009 Spring Meeting of the Materials Research Society, San Francisco, CA, April 14-16, 2009.
19. A.L. Poole, P. Maraccini, J.L. Shisler, B.J. Mariñas, M.A. Page, "Synergistic Solar and Chemical Disinfection for the Inactivation of Viruses in Drinking Water" Materials Science of Water Purification Symposium Q Poster Session Q3 - Catalysis and Disinfection, 2009 Spring Meeting of the Materials Research Society, San Francisco, CA, April 14-16, 2009.
20. M.A. Page, J.L. Shisler, B.J. Mariñas "Elucidating the Mechanisms of Adenovirus Type 2 Inactivation by UV Light, Free Chlorine, and Monochloramine" Materials Science of Water Purification Symposium Q Session Q8 - Disinfection, 2009 Spring Meeting of the Materials Research Society, San Francisco, CA, April 14-16, 2009.
21. L. Hu, M.A. Page, B.J. Marinas, T.J. Strathmann "Inactivation of Aquatic Viral Pathogens with Ferrate-based Treatment Technologies" Materials Science of Water Purification Symposium Q Session Q8 - Disinfection, 2009 Spring Meeting of the Materials Research Society, San Francisco, CA, April 14-16, 2009.
22. B.J. Finnegan, K.M. Flanagan, D.I. Al-Qadi, B.J. Mariñas "Inactivation of MS2 Phage by Silver(I) and a Combined Silver(I) - Solar Light Process" Materials Science of Water Purification Symposium Q Session Q8 - Disinfection, 2009 Spring Meeting of the Materials Research Society, San Francisco, CA, April 14-16, 2009.
23. K.M. Parker, T. Paul, P. Miller, B.J. Marinas, T.J. Strathmann "Photocatalytic Treatment of Emerging Micropollutants and Pathogens with Fullerol Nanoparticles" Materials Science of Water Purification Symposium Q Poster Joint Session Q9/S8 - Photocatalysts,

2009 Spring Meeting of the Materials Research Society, San Francisco, CA, April 14-16, 2009.

24. C.N. Kluge, M.A. Page, Q. Li, J.-K. Shang, B.J. Mariñas "Efficacy of a Visible Light-Activated Photocatalyst for the Control of Viruses in Drinking Water" Materials Science of Water Purification Symposium Q Poster Joint Session Q9/S8 - Photocatalysts, 2009 Spring Meeting of the Materials Research Society, San Francisco, CA, April 14-16, 2009.
25. B. Vazquez, T. Vonder Haar, M. Page, J. Shisler, B. Corona, B. Marinas, "Inactivation of Coxsackievirus with Free Chlorine, Ultraviolet Light, and Silver Ion", Poster presentation at the AEESP conference, Iowa, IA, July 26-29, 2009.
26. M. Page, A. Gall, T. Vonder Haar, J. Shisler, B. Marinas "Mechanisms of Adenovirus Inactivation with Free Chlorine" Poster presentation at the AEESP conference, Iowa, IA, July 26-29, 2009.
27. S.Y. Kimura, B.J. MariÃ±as, M.J. Plewa, E.D. Wagner "Formation of Cyanogen Iodide in Drinking Water" Poster presented at the 2009 Gordon Research Conference on Drinking Water Disinfection By-Products, Mount Holyoke College, South Hadley, MSA, August 9-14, 2009.
28. J. Luh, B.J. Marinas Poster presented at the 2009 Gordon Research Conference on Drinking Water Disinfection By-Products, Mount Holyoke College, South Hadley, MSA, August 9-14, 2009.
29. J. Pals, Y. Kumada, E.D. Wagner, M.J. Plewa, B.J. Mariñas "Comparative DNA Damage and Repair Kinetics Study in Mammalian Cells by Chloro-, Bromo-, and Iodoacetic Acid". Poster presented at the 2009 Gordon Research Conference on Drinking Water Disinfection By-Products, Mount Holyoke College, South Hadley, MSA, August 9-14, 2009.
30. S.Y. Kimura, B. Curren, B.J. Marinas, M.J. Plewa, E.D. Wagner "Disinfection by-products associated with the reactions of monochloramine and aldehydes in drinking water" Toxicology and Disinfection Session, Advances in Water Purification Symposium, Division of Polymer Chemistry, 239th National Meeting and Exposition of the American Chemical Society, San Francisco, CA, March 21-25, 2010.
31. J. Luh, B.J. Mariñas "Role of bromide in the formation of N-nitrosodimethylamine (NDMA) by monochloramine" Toxicology and Disinfection Session, Advances in Water Purification Symposium, Division of Polymer Chemistry, 239th National Meeting and Exposition of the American Chemical Society, San Francisco, CA, March 21-25, 2010.
32. C.N. Kluge, M.A. Page, Q. Li, J.-K. Shang, B.J Marinas "Efficacy of a visible light-activated photocatalyst for the control of viruses in drinking water" Toxicology and Disinfection Session, Advances in Water Purification Symposium, Division of Polymer Chemistry, 239th National Meeting and Exposition of the American Chemical Society, San Francisco, CA, March 21-25, 2010.
33. T.A. Vonder Haar, M.A. Page, B. Vázquez Bravo, J.L. Shisler, B.J. Mariñas "Control of coxsackievirus in drinking water using ultraviolet light and chlorine" Toxicology and Disinfection Session, Advances in Water Purification Symposium, Division of Polymer Chemistry, 239th National Meeting and Exposition of the American Chemical Society, San Francisco, CA, March 21-25, 2010.
34. Y. Gao, A. M. Saenz de Jubera, J.S. Moore, B.J. Mariñas "Nanofiltration membranes with dendritic aromatic polyamide active layers" Nanostructure Aspects Session, Advances in Water Purification Symposium, Division of Polymer Chemistry, 239th

National Meeting and Exposition of the American Chemical Society, San Francisco, CA, March 21-25, 2010.

35. A.M. Saenz de Jubera, Y. Gao, J.S. Moore, D.G. Cahill, B.J. Mariñas "Mechanistic study of the permeation of water contaminants through nanofiltration membranes with dendritic aromatic polyamide active layers" Nanostructure Aspects Session, Advances in Water Purification Symposium, Division of Polymer Chemistry, 239th National Meeting and Exposition of the American Chemical Society, San Francisco, CA, March 21-25, 2010.
36. Y. Komaki, S.Y. Kimura, J. Pals, E.D. Wagner, M.J. Plewa, B.J. Marinas "Toxicity of disinfection by-product intermediates associated with the reaction of haloamines and formaldehyde" General Posters Session, Division of Environmental Chemistry, 239th National Meeting and Exposition of the American Chemical Society, San Francisco, CA, March 21-25, 2010.
37. B. Vazquez, T. Vonder Haar, E. Briz, A. Gall, B.J. Marinas, A.V. Laguna Cabrera, B. Corona Vasquez, J. Leon Santos "Sustainable Water Resources for Rural Mixteca Communities near Nochixtlan, State of Oaxaca, Mexico", Poster presentation at the National Academy of Engineering (NAE) Grand Challenges for the 21st Century. Chicago, IL, April 21-22, 2010.
38. Coronell, O.; Mariñas, B.J.; Cahill, D.G. Characterization of the depth heterogeneity of the active layers of reverse osmosis and nanofiltration membranes. Presented at the North American Membrane Society (NAMS) Meeting 2010, Washington D.C., July 17-22, 2010.
39. A. Gall, M.A. Page, J.L. Shisler, B.J. Mariñas "Disinfection of DNA viruses for safe water supply in developed and developing regions: Utilizing a potential bacteriophage surrogate in the assessment of drinking water technologies" Interfacial and Disinfection Chemistry: Fate, Transport, and Adsorption of Pathogens, Nanoparticles, Biocolloids, and Trace Organics in Aquatic Systems Symposium, Honolulu, Hawaii, December 15-20, 2010.
40. T.A. Vonder Haar, M.A. Page, B.J. MariÃ±as, J.L. Shisler "Inactivation of Coxsackievirus B5 with Free Chlorine and Ultraviolet Light" Interfacial and Disinfection Chemistry: Fate, Transport, and Adsorption of Pathogens, Nanoparticles, Biocolloids, and Trace Organics in Aquatic Systems Symposium, Honolulu, Hawaii, December 15-20, 2010.
41. A.M. Saenz de Jubera, Y. Gao, J.S. Moore, T. Matthews, D. Cahill, B.J. Marinas. “Enhancement of state-of-the-art polyamide RO/NF membrane performance with dendritic aramide molecules”. AWWA Membrane Technology Conference and Exposition, Spring 2011, Long Beach, CA, March 28-31, 2011.
42. T. Matthews, H. Yan, A.M. Saenz de Jubera, B.J. Marinas, D. Cahill. Linking Polyamide Active Layer Structure and Chemistry to Reverse Osmosis Membrane Performance. AWWA Membrane Technology Conference and Exposition, Spring 2011, Long Beach, CA, March 28-31, 2011.
43. A. Gall, J. Shisler, B.J. Marinas, "The assessment of suitable drinking water technologies for disinfection of DNA viruses: Providing global safe water." Poster Presentation at Water Environment Federation Disinfection. Cincinnati, OH. April 10-12, 2011.
44. A.M. Saenz de Jubera, Y. Gao, J.S. Moore, B.J. Marinas. "Effect of dendrimer macromolecule size and chemistry on enhancing the performance of NF polyamide

membranes". Presented at the North American Membrane Society (NAMS) Meeting 2011, Las Vegas, NV, June 4-8, 2011.

45. T. Vonder Haar, M. Page, B. Mariñas, J. Shisler. “Inactivation Kinetics of Coxsackievirus B5 with Chlorine and Solar Disinfection and Potential Inactivation Mechanisms”. Poster presented at International Water Association Leading Edge Technology Conference on Water and Wastewater Technologies. Amsterdam, Netherlands. June 6-10, 2011.
46. A. Gall, J. Shisler, B.J. Mariñas, "Utilizing a bacteriophage surrogate to assess suitable water disinfection technologies to provide safe drinking water globally" Poster presented at International Water Association Leading Edge Technology Conference on Water and Wastewater Technologies. Amsterdam, Netherlands. June 6-10, 2011.
47. Y. Komaki, B.J. Mariñas, M.J. Plewa "Measurement of genotoxicity induction and subsequent repair efficiency rate of monohaloacetonitriles using mammalian cells" The 4th International Water Association Asia-Pacific Region Conference, Tokyo, Japan, October 2 – 6, 2011.
48. A.M. Saenz de Jubera, J. Herbison, Y. Komaki, J.S. Moore, D. Cahill, B.J. Mariñas. "Development of dendrimer-modified NF membranes with enhanced performance: How to covalently attach dendrimers to polyamide active layers" Gordon Research Seminar, Membranes: Materials and Process 2012, New London, NH, July 28-August 3, 2012.
49. S.Y. Kimura, B.J. Mariñas, “Disinfection By-Products from the Reactions of Monochloramine and Aldehydes in Drinking Water”, Poster Presentation at the 2012 Disinfection By-Product Gordon Conference, Mount Holyoke College, South Hadley, MA, August 5-10, 2012.
50. Y. Komaki, B.J. Mariñas, M.J. Plewa, "Toxicity of haloacetonitrile DBPs" Poster Presentation at the 2012 Disinfection By-Product Gordon Conference, Mount Holyoke College, South Hadley, MA, August 5-10, 2012.
51. L. Valentino, T.L. Renkens, T.L. Maugin, J.-P. Croue, S. Logette, E. Gaudichet-Maurin, B.J. Mariñas "Effects of Chloraminated Seawater on the SW30HR Reverse Osmosis Membrane" Euromembrane 2012, London, UK, September 23-27, 2012.
52. T.L. Maugin, L. Valentino, T. Renkens, J.P. Croue, B. Mariñas "Change in performances and structure of RO membrane after chloramination in pure water, synthetic and natural seawater" Euromembrane 2012, London, UK, September 23-27, 2012.
53. A. Gall, J. Shisler, B.J. Mariñas, "Drinking water disinfection of adenovirus: An analysis of a potential surrogate and a research design to elucidate mechanisms of inactivation", Illinois Water Conference, Urbana, IL, September 24-25, 2012, Poster presentation.
54. J. McClary, A. Gall, A., B.J. Mariñas, "A comparative study on the inactivation kinetics of adenovirus and PRD1 bacteriophage when exposed to monochloramine disinfection", Illinois Water Conference, Urbana, IL, September 24-25, 2012, Poster presentation.
55. T. Vonder Haar, B. Mariñas, J. Shisler. "Kinetics and Mechanisms of Coxsackievirus B5 Inactivation by Free Chlorine." Illinois Water Conference, Urbana, IL, September 24-25, 2012, Poster presentation.
56. L. Valentino, B.J. Marinas, T. Maugin, J.-P. Croué "Effects of chloraminated seawater on a reverse osmosis membrane" Division of Environmental Chemistry, 246th American Chemical Society National Meeting, Indianapolis, IN, September 8-12, 2013.
57. A.L. Vozar, B.J. Marinas "Nanofiltration membrane performance reduction due to cake-enhanced osmotic pressure in multicomponent soluble macromolecular synthetic

solutions", Division of Environmental Chemistry, 246th ACS National Meeting, Indianapolis, IN, September 8-12, 2013.

11. Other Scholarly Activities

1. Invited member of M.S. thesis committee, "Activated Carbon Adsorption of Disinfection By-Product Precursors and Natural and Synthetic Organic Compounds" by Laura Cummings, University of Cincinnati, Ohio, June 4, 1992.
2. Member, Steering Committee for National Science Foundation Workshop on Advancing the Quality of Water (AQWA) Research Program Initiative (2003-2004).
3. Invited committee member for the defense of Ph.D. Dissertation "Optimización del proceso de desinfección de aguas residuales depuradas mediante radiación ultravioleta" by Inmaculada Salcedo Dávila, Departamento de Ingenieria Química, Tecnologia de Alimentos y Tecnologia del Medio Ambiente, Facultad de Ciencias del Mar y Ambientales, Puerto Real, Cadiz, Spain, September 22, 2003.
4. Invited Participant “NSF Workshop: Frontiers in Environmental Engineering Education.” Arizona State University, Tempe, AZ, January 8-10, 2007.
5. Invited Participant “Nanotechnology Enabled Water Treatment Workshop,” Center for Biological and Environmental Nanotechnology (CBEN), Rice University, Houston, TX, February 25-27, 2007.
6. Served as Reviewer for Peer-Revieweed Journals: American Society of Civil Engineers Journal of Environmental Engineering, American Society of Civil Engineers Journal of Irrigation and Drainage Engineering, American Water Works Association Journal, Environmental Science & Technology, Journal of Membrane Science, Journal of Water Supply: Research and Technology - AQUA, Ozone Science and Engineering, Water Environment Research Journal, Water Research
7. Seved as Reviewer of proposals for: Illinois Water Resources Research Center, National Science Foundation, National Research Council, U.S. Department of Energy, U.S. Environmental Protection Agency

12. University Service

Department

1. Undergraduate Curriculum, Member (1995-1999)
2. Environmental Engineering & Science Faculty Search, Member (1995-1996)
3. Environmental Engineering & Science Graduate Applications Review Member (1995-1999)
4. Students Award Committee (1997)
5. Administrative Committee Member (1998-2001)
6. Environmental Engineering & Science Graduate Applications Review Chair (1999-2002)
7. Graduate Affairs Committee Member (1999-2008)
8. Environmental Microbiology and Engineering Faculty Position Search Committee Member (Joint Civil & Environmental Engineering and Animal Sciences Departments Committee) (1999-2000)
9. Environmental Chemistry Faculty Position Search Committee Member (2002)
10. Promotion and Tenure Committee Member (2003, 2006) and Chair (2004-2005)

11. Environmental Engineering and Science Program Chair (2005-2008)
12. Civil and Environmental Engineering Department Advisory Committee Member (2008-2010)
13. Civil and Environmental Engineering Department Grievance Committee Chair (2009-2010)
14. Civil and Environmental Engineering Department Management Committee Member (2010-present)
15. Civil and Environmental Engineering Department Faculty Position Serach Committee Chair (2009-present)
16. Civil and Environmental Engineering Department Awards Committee Member (2009-present)
17. Civil and Environmental Engineering Department Ad-hoc Committee for Development of Departmental Promotion and Tenure Guidelines, Member (2010)
18. Civil and Environmental Engineering Department Ad-hoc Committee for Development of Non-Tenure Track Faculty Role and Evaluation Guidelines, Chair (2010)
19. Civil and Environmental Engineering Department Retreat Breakout Group on International Education Co-Chair (2009)
20. Civil and Environmental Engineering Department Retreat Breakout Group on Multidisciplinary and International Education Co-Chair (2010)
21. Civil and Environmental Engineering Department Faculty Position Search Committee Chair (2010-2013)
22. Civil and Environmental Engineering Department Interim Head (2014-2015)
23. Civil and Environmental Engineering Department Head (2015-present)

College of Engineering

1. Subcommittee to review CEE 336, Hazardous and Solid Waste Management and CEE 445 Remediation Design, Department Representative (2001)
2. Research Policy Planning Committee Member (2003-2008)
3. NSF STC of Advanced Materials for the Purification of Water with Systems - Research Committee Member (2003-2004) and Chair (2004)
4. MacArthur Foundation Grant on Strengthening Scientific and Technical Advice on International Peace and Security - Faculty Search Committee Member (2003-2004)
5. NSF STC of Advanced Materials for the Purification of Water with Systems - Membrane Science and Processes Thrust Leader (2004)
6. NSF STC of Advanced Materials for the Purification of Water with Systems - Interdisciplinary Disinfection Research Team Co-leader (2005-2010)
7. NSF STC of Advanced Materials for the Purification of Water with Systems – Faculty Search Committee Chair (2005-2006)
8. Advisory Committee on Appointments, Member (2005-2009)
9. Executive Committee Ad-hoc Subcommittee Chair to review Proposal from MS&E Graduate Option Program in Energy and Sustainability Engineering (2009)
10. Physics Department Head 5-year Review, Committee Chair (2016-2017)

Campus

1. Graduate College Associate Dean for Minority Affairs Search Committee Member (1997-1998)

2. Graduate College Fellowships for Underrepresented Students Committee Member (1998-2001)
3. Functions of the Graduate College Ad Hoc Committee Member (1999)
4. Graduate College Strategic Planning for the Graduate College Office of Minority Affairs Committee Member (2000-present)
5. Graduate College Fellowship Board (2000-present)
6. Graduate College Fellowship Workgroup (2000-2001)
7. Graduate College Graduate Fellowship Subcommittee of the Diversity Initiatives Planning Committee Member (2003)
8. Ad-hoc Committee Co-chair developing Collaborative Water Initiatives for the College of Engineering and College of Agriculture, Consumer, and Environmental Sciences (2009-2010)
9. Dean of Engineering Search Committee (2013)

CURRICULUM VITAE

Name: Sidney Joseph Marlborough III
Address: [redacted]

Phone:
E-mail:

[redacted]

EDUCATION

PhD., May 2016. College of the Coast and Environment, Louisiana State University, Baton Rouge, LA. Major: Environmental Science.
Dissertation: *Arsenic Speciation and Phytoremediation Modeling for Environmental Management.*

M.S., May 2004. Department of Environmental Science, Louisiana State University, Baton Rouge, LA. Major: Environmental Toxicology.
Thesis: *Microsatellite Instability in Squamous Cell Carcinoma and Lichen Sclerosis of The Vulva.*

B.S., May 1998. Department of Agronomy, Louisiana State University, Baton Rouge, LA. Major: Environmental Management Systems, with an emphasis on toxicology and pollution transportation.

AWARDS AND HONORS

2004 Best and Brightest Students Publication
2004 Outstanding Thesis Award Department of Oceanography and Environment
2004 Nominated for Departmental Award in Toxicology
1996 Browning Ferris Industries Scholarship Award and Internship
1993 Alpha Zeta, Agricultural Honors Fraternity
1990 California Scholarship Federation
1989 National Honors Society

PROFESSIONAL POSITIONS

2014-2016 Sr. Environmental Coordinator, Noble Energy, Inc.

Managing global hazardous communication, chemical stewardship and waste management. Advising management on toxicity of purchased chemicals and developed risk based programs to address exposure. Coordinating subject matter experts internationally to create a program to address hazardous material communication, transportation and management of change.

- Managing the development of the chemical stewardship program for Noble Energy.

- Developing corporate waste management strategy.
- Revised Global HazCom in accordance with the global harmonization standard.
- Revising training programs and working with business units.
- Creating internal connections and establishing open communication.
- Developing SDSs and Managing cloud based SDS system.

2005-2014 Staff Scientist, Toxicological & Environmental Associates, Inc.

Oversee extensive field testing and liaise with key stakeholders to ensure fulfillment of all environmental and safety objectives. Identify and utilize cutting-edge environmental technologies to increase efficacy of green remediation. Interface regularly with field experts to enhance team skills and knowledge base.

- Managed large and small scale remediation projects.
- Directed the design and implementation of in-situ remediation systems.
- Saved over $250k of estimated cost by leading effective negotiations with venders and contractors.
- Directed field environmental health & safety program, developing standard safety procedures designed to protect field personnel.
- Successfully negotiated risk based remediation standards for multiple clients in Texas, Louisiana and Florida.
- Provided legal expert services to clients minimizing financial and environmental liability saving millions in remediation costs.
- Modeled releases of air toxics with USEPA's Guidance on the Application of Refined Dispersion Models to Hazardous/Toxic Air Pollutant Releases (EPA-454/R-93-002).

2002-2005 Research Associate III, Louisiana State University, Baton Rouge, LA Supervised LSU research lab, managing two graduate students and three student workers. Conducted toxicity testing on benthic organisms. Wrote and submitted federal grant proposals and managed research projects.

2001-2002 Environmental Specialist III C-K Associates, Inc., Baton Rouge, LA. Directed permitting projects in excess of $10,000. Conducted phase I and phase II site assessments, offshore oil platform environmental, safety and due diligence inspections, as well as mold, lead, and pesticide sampling and report generation. Managed all aspects of LPDES general and individual water permitting and water quality modeling with LA-Qual and Qual-2E. Performed site evaluations and drafted SPCC and SWPPP documents. Conducted soil and water sampling for permit compliance and DMR reporting for permit compliance.

1998-2001 Environmental Scientist III, Louisiana DEQ, Baton Rouge, LA Assisted in solid waste and radiation inspections and assessed compliance status with multi-media regulations. Drafted multi-media enforcement actions,

including penalty assessments. Field team leader of LaDEQ's radiological emergency response team. Worked with implementing office wide software.

CERTIFICATIONS AND TECHNICAL TRAINING

- Hazwoper 40 hour course and 8 hour refresher.
- Supervisor Training for Process Safety Management and Hazard Communication
- Selected Topics in Radiological Engineering with Dr. Scott (LSU)
- FEMA Radiological Emergency Response Operations (RERO)
- Air sampling for radioactive materials, Oakridge, TN.

RESEARCH EXPERIENCE

Doctorial Research, LSU, May 2016.

Investigated arsenic speciation and how it affects ecological risk assessment and final cleanup and phytoremediation of arsenic and the modeling of uptake kinetics. Dissertation: *Arsenic Speciation and Phytoremediation Modeling for Environmental Management.*

Masters Research, LSU, May 2004.

Investigated microsatellite instability in association with squamous cell carcinoma of the vulva using PCR techniques. Thesis: *Microsatellite Instability in Squamous Cell Carcinoma and Lichen Sclerosis of the Vulva.* Dr. Vince Wilson, Department of Environmental Science.

Research Associate, LSU, 2003-2004

Analyzed the complex non-additive interactions in the harpacticoid, *Schizopera knabeni* withf metals and phenanthrene. Dr. John Fleeger, Department of Biological Sciences.

Research Associate, LSU, 2003.

Investigated the bioaccumulation and toxicity of sediment-associated TNT to marine fish using an estuarine benthic fish species that maintains intimate contact with the sediment. In addition, a sub-lethal behavioral assay determined the effect of TNT on feeding rate. Dr. John Fleeger, Department of Biological Sciences.

CURRICULUM VITAE

Date prepared: August 2014

NAME: Carmen J. Marsit, Ph.D.

ADDRESS:	Home [redacted]	Office 7650 Remsen, Room 520 Hanover, NH 03755

I. EDUCATION:

DATE	INSTITUTION	DEGREE
2000	Lafayette College, Easton, PA	B.S., Biochemistry (*summa cum laude*)
2004	Harvard University, Cambridge, MA	Ph.D., Biological Sciences in Public Health

II. POSTDOCTORAL TRAINING

DATE	INSTITUTION	SPECIALTY
2004-2006	Harvard School of Public Health, Boston, MA	Cancer Molecular Epidemiology and Epigenetics

III. ACADEMIC APPOINTMENTS

DATE	INSTITUTION	TITLE
2004-2005	Harvard School of Public Health, Department of Genetics and Complex Diseases, Boston, MA	NIH/NIEHS Postdoctoral Fellow
2005-2006	Harvard School of Public Health, Department of Genetics and Complex Diseases, Boston, MA	Research Associate
2007-2011	Brown University, Department of Pathology and Laboratory Medicine, Providence, RI	Assistant Professor
2010-2011	Brown University, Department of Community Health, Centers for Population Health and Clinical Epidemiology and Environmental Health and Technology, Brown University, Providence, RI	Assistant Professor
2011-present	Brown University, Department of Epidemiology, Providence, RI	Adjunct Assistant Professor

2011-2012	Geisel School of Medicine at Dartmouth, Departments of Pharmacology and Toxicology, and Community and Family Medicine, Section of Epidemiology and Biostatistics	Assistant Professor
2012-present	Geisel School of Medicine at Dartmouth, Departments of Pharmacology and Toxicology, and Community and Family Medicine, Section of Epidemiology and Biostatistics	Associate Professor

IV. DARTMOUTH INSTITUTIONAL LEADERSHIP ROLES:

DATE	INSTITUTION	TITLE
2013	Dartmouth Hitchcock Norris Cotton Comprehensive Cancer Center	Co-director, Program in Epidemiology

V. LICENSURE AND CERTIFICATION (IF APPLICABLE):

DATE	LICENSURE/CERTIFICATION
NA	

VI. HOSPITAL APPOINTMENTS (IF APPLICABLE):

DATES	INSTITUTION	POSITION/TITLE
2011-present	Women and Infants Hospital, Department of Pediatrics, Providence, RI	Allied Health Professional, Auxiliary Medical Staff

VII. OTHER PROFESSIONAL POSITIONS (NON-DARTMOUTH):

DATES	INSTITUTION	POSITION/TITLE
NA		

VIII. TEACHING ACTIVITIES:

A. UNDERGRADUATE MEDICAL EDUCATION:

DATES	INSTITUTION	NAME OF COURSE/ACTIVITY	ROLE	FREQUENCY	HOURS
NA					

B. GRADUATE EDUCATION:

DATES	INSTITUTION	NAME OF COURSE/ACTIVITY	ROLE	FREQUENCY	HOURS
2006	Harvard School of Public Health	ID518: Integrated Cancer Biology	Co-Course Leader	Once	40
2007-2009	Brown University	BIOL 285: Introduction to	Lecturer	Yearly	1.5

		Faculty Research			
2007-2010	Brown University	BIOL 286: Molecular Mechanisms of Human Disease	Course Leader	Yearly	30
2010	Brown University	BIOL 2840H: Reproductive Biology and Toxicants	Lecturer	Once	1.5
2011-present	Geisel School of Medicine	GENE 110: Integrative Biomedical Sciences	Lecturer	Yearly	1
2012-2013	Geisel School of Medicine	PEMM 103: Biostatistics	Course Co-Leader	Yearly	24
2013	Geisel School of Medicine	PEMM 123: Graduate Toxicology	Lecturer	Once	2
2013-2014	Geisel School of Medicine	QBS 131: Foundations of Molecular Epidemiology	Lecturer	Once	2

C. GRADUATE MEDICAL EDUCATION:

DATES	INSTITUTION	NAME OF COURSE/ACTIVITY	ROLE	FREQUENCY	HOURS
2008	Brown University	Obstetric Resident Core Curriculum	Lecturer	Once	2

D. UNDERGRADUATE COLLEGE:

DATES	INSTITUTION	NAME OF COURSE/ACTIVITY	ROLE	FREQUENCY	HOURS
2007-2011	Brown University	BIOL 182: Environmental Health and Disease	Lecturer	Yearly	3

E. CONTINUING MEDICAL EDUCATION:

DATES	NAME OF COURSE/ACTIVITY	ROLE	FREQUENCY	HOURS
2012	**Synergy Course** Translational Research: The Bridge from Discovery to Clinical Practice to the Community	Panel Discussant and Small Group Leader	1 week	12
2014	**Synergy Translational Research Certificate Course**	Panel Discussant and mentor	1 week	12

F. COMMUNITY EDUCATION:

DATES	NAME OF COURSE/ACTIVITY	ROLE	FREQUENCY	HOURS
NA				

IX. STUDENT/FELLOW ADVISING/MENTORING:

DATE	NAME OF STUDENT	ROLE	PROGRAM
Postdoctoral Fellows:			
2009-2011	Carolyn Banister, Ph.D.	Post-doctoral Advisor	NIEHS Training Program in Environmental Pathology, Brown University *Current Position: Research Associate, University of South Carolina*
2010-2011	Michele Avissar-Whiting, Ph.D.	Post-doctoral Advisor	Brown University *Current Position: Managing Editor, American Journal Experts*
2012-2014	Allison Appleton, ScD	Post-doctoral Advisor	Training Program in the Quantitative Biomedical Sciences, Geisel School of Medicine *Current Position: Assistant Professor, Department of Epidemiology, University at Albany School of Public Health*
2014-present	Benjamin Green, Ph.D.	Post-doctoral Advisor	Geisel School of Medicine at Dartmouth
Medical Fellows:			
2010-2011	Ayman Samkari, MD	Fellowship SOC Member	Fellowship in Pediatric Hematology/Oncology, Rhode Island Hospital *Current Position: Attending Oncologist, Director of Neuro-oncology Program, St. Christopher's Hospital for Children, Philadelphia, PA*
Graduate Students:			
2007-2009	Michele Avissar, Ph.D.	Ph.D. Advisor	Pathobiology Graduate Program, Brown University *Current Position: Managing Editor, American Journal Experts*

2008	Sara Pacheco	Rotation Advisor	Pathobiology Graduate Program, Brown University *Current Position: Senior Fellow, Institute of Risk Management and Risk Communication, University of Washington*
2008	Rachel (Rogers) Worley, M.Sc.	Masters Thesis Defense Committee	Environmental Studies Program, Brown University *Current Position: PhD Student, University of Georgia*
2008	Anita Patel, Ph.D.	Ph.D. Thesis Defense Outside Reader	Biological Sciences in Public Health Program, Harvard University *Current Position: Consultant, Booz-Allen Hamilton*
2008-2011	Matthew Maccani, Ph.D.	Ph.D. Advisor	Pathology Graduate Program, Brown University *Current Position: Post-doctoral Fellow, Center for Alcohol and Addiction Studies, Brown University*
2008-2011	Graham Poage, Ph.D.	Ph.D.Thesis Advisory Committee Chair	Program in Molecular Pharmacology and Physiology, Brown University *Current Position: Postdoctoral Fellow, MD Anderson Cancer Center*
2009	Ann Saunders	Rotation Advisor	Pathobiology Graduate Program, Brown University
2009-2011	Charlotte Wilhelm, Ph.D.	Ph.D. Advisor	Epidemiology Graduate Program, Brown University *Current Position: Postdoctoral Fellow, Imperial College, London*
2009-2011	Nicholas Heger	Ph.D.Thesis Advisory	Pathobiology Graduate Program, Brown University *Current Position: Clinical Chemistry Fellow, Boston Children's Hospital*
2009-2011	Haley Menard, Ph.D.	Ph.D.Thesis Advisory Committee	Pathobiology Graduate Program, Brown University *Current Position: Epidemiologist, Ministry of Health, Palau*
2009-2011	Caihua Liang, Ph.D.	Ph.D.Thesis Advisory Committee	Epidemiology Graduate Program, Brown University *Current Position: Epidemiologist OptumInsight | Life Sciences*

2009-2011	Devin Koestler, Ph.D.	Ph.D. Thesis Advisory Committee	Biostatistics Graduate Program, Brown University *Current Position: Assistant Professor, University of Kansas Medical Center*
2010	Kathyrn Ponder, M.D., M.M.S.	Masters Thesis Defense Committee	Masters of Medical Science Program, Brown University *Current Position: Clinical Fellow in Neonatology, University of California – San Francisco*
2010-2011	Camelia Saffarini	Ph.D.Thesis Advisory Committee Chair	Pathobiology Graduate Program, Brown University
2010-present	Ashley Smith	Ph.D. Thesis Advisory Committee Chair	Pathobiology Graduate Program, Brown University *Current Position: Editor, American Journal Experts*
2010-2013	William Accomando, PhD	Ph.D. Thesis Advisory Committee Chair	Pathobiology Graduate Program, Brown University *Current Position: Postdoctoral Fellow, German Cancer Research Center (DFKZ), Heidelberg, Germany*
2011-12	Robert Frost	Rotation Advisor Qualifying Exam Committee	Program in Quantitative Biomedical Sciences, Geisel School of Medicine at Dartmouth
2011-12	Sondra Downey	Rotation Advisor	Program in Experimental Molecular Medicine, Geisel School of Medicine at Dartmouth
2011-present	Corina Lesseur	Ph.D. Advisor	Program in Experimental Molecular Medicine, Geisel School of Medicine at Dartmouth *Current Position: Post-doctoral Fellow, International Agency for Research on Cancer (IARC), Lyon, France*
2011-2013	Jennifer Joukhader Maccani, PhD	Rotation Advisor Ph.D.Thesis Advisory Committee Chair	Pathobiology Graduate Program, Brown University *Current Position: Post-doctoral Fellow, Miriam Hospital, Providence, RI*

2012	Alison Paquette	Ph.D. Advisor	Program in Experimental Molecular Medicine, Geisel School of Medicine at Dartmouth
2012	Jessica LaRocca, Ph.D.	Ph.D. Thesis Defense Outside Reader	Pathobiology Graduate Program, Brown University *Current Position: Postdoctoral Fellow, Channing Laboratory, Brigham & Women's Hospital*
2012	Benjamin Moyer, Ph.D.	Ph.D. Thesis Defense Outside Reader	Pathobiology Graduate Program, Brown University *Current Position: Postdoctoral Fellow, Geisel School of Medicine*
2012-present	Kevin Johnson	Ph.D. Thesis Committee	Program in Experimental Molecular Medicine, Geisel School of Medicine at Dartmouth
2013	Boris Novakovic, Ph.D.	Ph.D. Thesis Defense Outside Reader	Melbourne School of Graduate Research, University of Melbourne, Australia
2013	Johannah Ryan	Rotation Advisor	Program in Molecular Biology, Cell Biology, and Biochemistry, Geisel School of Medicine at Dartmouth
2013	Anala Gossai	Rotation Advisor	Program in the Quantitative Biomedical Sciences, Geisel School of Medicine at Dartmouth
2014	Elizabeth Piette	Rotation Advisor	Program in the Quantitative Biomedical Sciences, Geisel School of Medicine at Dartmouth
Undergraduate Students:			
2007-2008	Keila Veiga	Honors Thesis Advisor	Human Biology Concentration, Brown University *Current Position: Pediatric Resident, Mt. Sinai Kravis Children's Hospital*
2007-2008	Stuart Schussel	Honors Thesis Advisor	Environmental Studies Concentration, Brown University *Current Position: Associate at O'Melveny & Myers LLP, San Francisco, CA*
2008-2009	Kristen Uhl	Honors Thesis Advisor	Human Biology Concentration, Brown University *Current Position: Graduate Student, University at Albany*

2008-2009	Erika Moen	Honors Thesis Advisor	Human Biology Concentration, Brown University *Current Position: Graduate Student, University of Chicago*
2009-2011	Amanda Filiberto	Honors Thesis Advisor	Human Biology Concentration, Brown University *Current Position: Medical Student, Virginia Commonwealth University Medical School*
2010-2011	Cailey Bromer	Honors Thesis Advisor	Neuroscience Concentration, Brown University *Current Position: Graduate Student in Neuroscience at UCSD*
2012-2013	Ashlee Roberson	Undergraduate Research Assistant Independent Study Advisor	Dartmouth College *Current Position: Clinical Research Assistant, Massachusetts General Hospital*
2012-2014	Lauren Kwan	Undergraduate Research Assistant	Dartmouth College
2013-2014	Roshen John	Undergraduate Howard Hughes Medical Research Institute Junior Research Scholar	Dartmouth College

X. RESEARCH FUNDING:

A. Current

DATES	PROJECT TITLE/NUMBER	ROLE/%EFFORT	SPONSOR	ANNUAL DIRECT COSTS
08/15/2011-04/30/2016	R01 DA031188 Maternal Smoking: HPA and Epigenetic Pathways in Infant Neurobehavioral Deficits	Co-I 10% Effort	NIH/NIDA Miriam Hospital Subcontract	$50,000

09/01/2011-06/30/2016	R01 MH094609 Epigenetics in Neurodevelopment and Mental Health	PI 50% Effort	NIH/NIMH	$400,000
4/1/2013-3/31/2018	P20 GM104416 COBRE Center for Molecular Epidemiology: Biorepository Core	Core Co-Director Mentor 5% Effort	NIH/NIGMS	$1,400,000
3/19/2013-1/31/2015	R01ES019202-03S1 Urinary Cadmium and risk of breast cancer VICTER Supplement	Co-investigator 10% Effort	NIH/NIEHS	$100,000
6/1/2013-5/31/2018	P01 ES022832 Children's Environmental Health and Disease Prevention Center Project 3: Placental Biomarkers of Exposure and Outcome	Project Co-PI 20% Effort	NIH/NIEHS	$1,000,000
8/1/2013-7/31/2015	U01 HD052104 Coordinating Center for the Pediatric HIV/AIDS Cohort Study	Co-I	NIH/NICHD Tulane University Subcontract	$12,000
9/1/2013-4/30/2018	R01 ES022223 Environment, Imprinting, and Neurodevelopment	Co-PI	NIH/NIEHS	$500,000
4/1/2014-3/30/2019	R01 MH101107 Early Life Stress: Epigenetic Regulation of Endocrine and Immune Pathways	Co-I	NIH/NIMH	$500,000

B. Past

DATES	PROJECT TITLE/NUMBER	ROLE/%EFFORT	SPONSOR	ANNUAL DIRECT COSTS
04/01/05-03/31/06	P50 CA093683 Patterns of Epigenetic Inactivation in Non-Melanoma Skin Cancer	Co- I 25% Effort	NIH/NCI Harvard Skin Spore Development Project	$50,000
07/01/06-06/30/11	YCSA 052341 Role of SHS on Somatic Alterations in Bladder Cancer	PI 30% Effort	Flight Attendants Medical Research Institute Young Clinical Scientist Award	$100,000
09/01/07-02/28/12	R01 CA121147 The Molecular Epidemiology of Bladder Cancer	Co-I 10% Effort	NIH/NCI	$250,000
01/01/08-04/04/08	P20RR016457 RI-INBRE Pilot Project: Profile of miRNA expression alterations by endocrine disrupting toxicants	Pilot Project PI 5% Effort	NIH/NCRR University of Rhode Island Subaward RI-INBRE for Molecular Toxicology	$15,000
01/01/08-12/31/08	0548311 ADVANCE Career Development Award: Creating Opportunities for Collaboration and Scientific Discussion	Development Award PI No Effort	NSF-HRD ADVANCE Institutional Transformation Award	$13,000
01/01/08-12/31/09	Array Based miRNA Expression and Methylation Profiling of Normal and Tumorigenic Pleural Mesothelium	PI 10% Effort	Mesothelioma Applied Research Foundation (MARF)	$50,000
08/15/08-07/31/11	P20 RR018728 COBRE for Perinatal Biology: Epigenetic alterations as markers of the intrauterine environment	Project 4 PI 33% Effort	NIH/NCRR Women and Infants Hospital Subcontract	$160,000 Project Direct Costs

02/15/09-02/15/10	Epigenetic Effect of Oxygen Tension During Embryo Culture In Assisted Reproductive Technologies	Co-PI No effort	Rhode Island Foundation Medical Research Grant	$15,000
04/01/09-08/31/11	P42 ES013660 Superfund Research Program: Environment, Genetics and Epigenetics in a R.I. Birth Cohort	Project 8 PI 20% Effort	NIH/NIEHS	$185,000 Project Direct Costs
04/01/09-08/31/11	R01 CA100679 Patterns of Somatic Gene Alterations in Oral Cancer	CO-I 5% Effort	NIH/NCI	$250,000
09/01/09-08/31/11	P42 ES013660 Superfund Research Program: Environment, Genetics and Epigenetics in a R.I. Birth Cohort (ARRA Supplement)	Project 8 PI 5% Effort	NIH/NIEHS	$75,000
07/01/10-08/31/11	HHSN267200700032C National Children's Study – Pilot Project 8: Examination of miRNA in Placenta Samples	Pilot Project PI 20% Effort	NIH/NICHD	$104,000
04/08/2011-03/31/2013	R21 MH091508 Childhood Maltreatment: Epigenetic Modulation of the Glucocorticoid Receptor	Co-I 10% Effort	NIH/NIMH Butler Hospital Subcontract	$32,200
01/01/2013-12/31/2013	Hopeman Award Identification of Accessible Biomarkers of Bladder Cancer Treatment Response, Recurrence, and Progression	PI	Norris Cotton Cancer Center	$100,000

C. Pending

DATES	**PROJECT TITLE/NUMBER**	**ROLE/%EFFORT**	**SPONSOR**	**ANNUAL DIRECT COSTS**
06/01/2015-05/31/2019	R01 Investigating MicroRNA,	PI 20% Effort	NIH/NIEHS	$350,000

	Environmental Exposures and Newborn Outcomes			
06/01/2015-05/31/2019	R01 Etiology and Prognostic Significance of Expression Profiles of Bladder Cancer	Co-PI (with Karl Kelsey)	NIH/NCI	$400,000

XI. PROGRAM DEVELOPMENT:

1. 2014 Burroughs Wellcome Fund Institutional Program Unifying Population and Laboratory-Based Sciences, Training Grant Application, February 2014

XII. ENTREPRENEURIAL ACTIVITIES:

1. US Patent: **Marsit CJ,** Karagas MR, Andrew AS, Liu M, Kelsey KT. *Compositions and Methods for Detecting Markers of Cancer.* **USPTO Application #:** 20090155786.

2. US Patent: Christensen BC, Houseman EA, Yeh RF, Godleski JG, Bueno R, Sugarbaker DJ, Karagas MR, Wrensch MR, Wiemels JL, Zheng S, **Marsit CJ**, Nelson HH, Wiencke JK, Kelsey KT. *Diagnosing, prognosing, and early detection of cancers by DNA methylation profiling*. **USPTO #: 61/222,558**

3. US Patent: Avissar M, Christensen BC, Kelsey KT, **Marsit CJ.** *Methods of Diagnosing Carcinoma.* **USPTO#: 61/209,320, PCT/US2010/026388**

XIII. MAJOR COMMITTEE ASSIGNMENTS:

National/international

DATES	COMMITTEE	ROLE	INSTITUTION
2006-2010	Epidemiology Review Panel	Grant Study Section Member	Flight Attendants Medical Research Institute
2009	Epigenetics and Toxicology Session	Co-Chair	Superfund Research Program Annual Meeting, New York, NY
2010	Young Investigator Travel Award Selection Panel	Panel Member	International Bladder Cancer Consortium

2011	Special Emphasis Panel, Epigenomics of Neurodevelopment	Study Section Member	NIH/NIMH
2011-present	Maternal Exposures Working Group	Working Group Member & Epigenetics Project Leader	Pediatric HIV/AIDS Cohort Study – Tulane & Harvard Universities
2012	Special Emphasis Panel: Translational Research in Pediatric and Obstetric Pharmacology RFA	Study Section Member	NIH/NICHD
2013	NIH Director's Transformative Research Initiative	Mail Reviewer	NIH/CSR
2013	Symposium: Prenatal Environment, Epigenetic Mechanisms and the Developmental Origins of Health and Disease	Chair	International Society for Environmental Epidemiology Annual Meeting
2013	Educational Session: New Approaches in Molecular Epidemiology	Chair	American Association for Research on Cancer Annual Meeting
2013	Special Emphasis Panel: Member Conflict Obesity, Asthma, and Reproductive Epidemiology	Study Section Member	NIH/CSR
2014	Asthma, Allergy, Autoimmune and Sinusitis Panel	Study Section Member	Flight Attendants Medical Research Institute
2014	Special Emphasis Panel: Basic and Applied Biomedical Research on Minority Health and Health Disparities	Study Section Member	NIH/NIMHD
2014	Special Emphasis Panel: Mechanistic Insights in Birth Cohorts	Study Section Member	NIH/CSR

Regional

DATES	COMMITTEE	ROLE	INSTITUTION
NA			

Institutional

DATES	COMMITTEE	ROLE	INSTITUTION
2007-2009	Search Committee, Assistant/Associate Professor	Member	Brown University
2008-2009	Pathobiology Seminar Series	Chair	Brown University
2008-2010	Admissions Committee, Pathobiology Graduate Program	Chair and Member	Brown University
2009-2011	Search Committee, Staff Neonatologist/Open Rank	Member	Brown University/Women and Infants Hospital
2010-2011	Search Committee, Senior-rank Professor in Molecular Epidemiology	Member	Brown University
2011	Shared Resources Review	Member	Norris Cotton Cancer Center
2011-present	Dartmouth Children's Environmental Health and Disease Prevention Center	Member	Geisel School of Medicine at Dartmouth
2011-present	Internal Advising Committee, COBRE for Molecular Epidemiology	Member	Geisel School of Medicine at Dartmouth
2012-present	Integrative Biology Committee	Member	Geisel School of Medicine at Dartmouth
2013-present	Graduate Education Committee - PEMM	Member	Geisel School of Medicine at Dartmouth
2013-present	Program in Cancer Epidemiology	Co-Director	Norris Cotton Cancer Center
2014-present	Faculty Council	Pharmacology/Toxicology Representative	Geisel School of Medicine at Dartmouth

XIV. MEMBERSHIPS, OFFICE AND COMMITTEE ASSIGNMENTS IN PROFESSIONAL SOCIETIES:

DATES	SOCIETY	ROLE
2004-present	American Association for Cancer Research	Member

2011-present	Society of Toxicology	Member
2011-present	American Association for the Advancement of Science	Member
2014-present	International Society for Environmental Epidemiology	Member
2014-present	International Society for Children's Health and the Environment	Member

XV. EDITORIAL BOARDS:

DATES	JOURNAL	ROLE
2008-present	Environmental Toxicology	Editorial Board Member
2011-2013	Frontiers in Toxicogenomics	Associate Editor
2011-2014	PLoS One	Associate Editor

XVI. JOURNAL REFEREE ACTIVITY:

DATES	JOURNAL NAME
2007-present	*Clinical Cancer Research* *Carcinogenesis* *British Journal of Cancer* *Cancer Epidemiology, Biomarkers, and Prevention* *Cancer* *Human Reproduction* *BMC Cancer* *International Journal of Cancer* *Molecular Carcinogenesis* *Cancer Research* *European Journal of Cancer*
2009-present	*Epigenetics* *PLoS One*
2010-present	*The American Journal of Obstetrics and Gynecology* *Reproduction, Fertility, and Development* *Neurotoxicology Research* *BMC Medical Genomics* *Placenta* *Nucleic Acids Research* *Journal of Clinical Endocrinology and Metabolism*

XVII. AWARDS AND HONORS:

DATES	AWARD AND INSTITUTION
2000	American Institute of Chemists Award, Lafayette College Department of Chemistry
2000	Phi Lambda Upsilon, Honors Society in Chemistry, Lafayette College

2000-2004	Pre-doctoral Training Fellowship in Radiobiology, National Institute of Environmental Health Sciences, Harvard School of Public Health
2002	Pathobiology of Cancer Fellowship, American Association for Cancer Research
2004	AACR-AFLAC Scholar in Training Award, American Association for Cancer Research
2005	AACR-AstraZeneca Scholar in Training Award, American Association for Cancer Research
2010	Featured in Science Magazine's ScienceCareers website to coincide with their special issue on Epigenetics, Oct 29, 2010, 10.1126/science.caredit.a1000105
2011	National Institute of Mental Health, Biobehavioral Research Award for Innovative New Scientists (BRAINS)
2013	Dartmouth-Hitchcock Norris Cotton Cancer Center Award for Excellence 2012

XVIII. INVITED PRESENTATIONS:

International location:

DATE	TOPIC/TITLE	ORGANIZATION	LOCATION
2005	*Carcinogen exposure and epigenetic silencing in bladder cancer*	Conference of the Collegium Ramazinni	Bologna, Italy
2006	*Epigenetic Alterations in Exposure-related Disease*	Centre for Research in Environmental Epidemiology (CREAL)	Barcelona, Spain
2011	*Epigenetic Effects of In-utero Arsenic Exposure*	International Society for Environmental Epidemiology Annual Meeting	Barcelona, Spain
2013	*Prenatal Environment, Epigenetic Mechanisms and the Developmental Origins of Health and Disease* (Symposium Chair)	International Society for Environmental Epidemiology Annual Meeting	Basel, Switzerland
2014	*Epigenomics and the Natural Environment*	Experimental Biology: Epigenetics in Comparative Physiology	Banff, Canada

National location:

DATE	TOPIC/TITLE	ORGANIZATION	LOCATION
2005	*SFRP Gene Methylation and p53 Alteration in Bladder Cancer*	University of California – San Francisco Helen Diller Comprehensive Cancer Center	San Francisco, CA
2007	*Does DNA hypermethylation and genetic deletion occur as distinct pathways in aerodigestive malignancy*	AACR Special Conference: Advances and Challenges in Aerodigestive Epithelial Cancer: Genetics, Diagnosis, and Therapy	Charleston, SC
2008	*Survival Skills for Effective Leaders*	Lafayette Leadership Institute, Lafayette College	Easton, PA
2008	*Epigenetics in Environmental Health*	Boston University School of Public Health	Boston, MA
2008	*Epigenetics in Toxicology and Cancer Biology*	Nutmeg Conference, Marine Biological Laboratories	Woods Hole, MA
2009	*Clinical and Etiological Significance of Epigenetic Profiles in Bladder Cancer*	Cancer Center Seminar Series, Masonic Cancer Center, University of Minnesota	Minneapolis, MN
2009	*Clinical and Etiological Significance of Epigenetic Profiles in Bladder Cancer.*	Flight Attendants Medical Research Institute 8th Annual Symposium	Boston, MA
2009	*Epigenetics and Imprinting in the Placenta*	American Society of Reproductive Immunology Annual Conference	Orlando, FL
2009	*MicroRNA Alterations in Malignant Pleural Mesothelioma as Biomarkers of Disease*	Mesothelioma Applied Research Foundation International Symposium	Washington, D.C.
2009	*Placenta Epigenetics – Clinical and Environmental Implications*	Mt. Sinai School of Medicine	New York, NY
2010	*Epigenetics in Development and Beyond*	Pediatric HIV/AIDS Cohort Study Annual Meeting, Plenary Session	Baltimore, MD

2010	*Alterations of DNA Methylation Associated with Growth Restriction and Infant Neurobehavior*	Behavioral Epigenetic Symposium, New York Academy of Sciences	Boston, MA
2010	*DNA methylation array analysis identifies profiles of blood-derived DNA methylation associated with bladder cancer*	International Bladder Cancer Consortium Annual Meeting	Houston, TX
2011	*Practical How-to and Pitfalls Associated with Current Epigenetic Studies: Population-based DNA Methylation Profiling in Exposure-Related Disease.*	Society of Toxicology Annual Meeting, Continuing Education Course	Washington, DC
2012	*MicroRNAs in Biology and Toxicology: MicroRNA Profiling in Population-Based Studies of Exposure-Related Health Outcomes*	Society of Toxicology Annual Meeting, Continuing Education Course	San Francisco, CA
2012	*Exposure Biology and DNA Methylation*	Society for Gynecological Investigation Annual Meeting, Symposium	San Diego, CA
2012	*A Role for in-utero Arsenic Exposure in Epigenetic Alterations Associated with Infant Health Outcomes*	NIEHS/SBRP Special Meeting: Epigenetic Actions of Environmental Arsenicals	Tucson, AZ
2012	*Role of miRNA in regulating placental function and fetal growth*	2012 Alltech Distinguished Lecture Series in Nutrigenomics at the University of Kentucky	Lexington, KY
2013	*Placental miRNA as Biomarkers of Exposure and Outcome*	Duke University Epigenomic Toxicology Symposium	Durham, NC
2013	*Epigenome-wide Association Studies in Cancer*	AACR Annual Meeting	Washington, DC
2013	*Placental Biomarkers of Exposure and Outcome*	EPA/NIEHS Children's Centers Webinar Series	Nationally Broadcast Webinar
2013	*Epigenetic Mechanisms Linking Environment to Developmental Outcomes*	NIEHS Superfund Research Program Annual Meeting	Baton Rouge, LA

2013	*Epigenetic Mechanisms Linking Environment to Newborn Developmental Outcomes*	Icahn School of Medicine at Mt. Sinai, Child Health Research Seminars	New York, NY
2014	*Developmental Effects of Arsenic*	NIEHS Workshop "Health effects and mitigation of arsenic: current research efforts and future directions"	Durham, NC
2014	*Early life and epigenetics/response and impact on immune system*	EPA/NIEHS Children's Centers Webinar Series	Nationally Broadcast Webinar
2014	*Epigenetic Effects of Early Life Environmental Exposures (Session Chair)*	International Society for Environmental Epidemiology Annual Meeting	Seattle, WA
2014	*Placental Epigenetic Mechanisms*	Prenatal Programming and Toxicity (PPTOX IV): Environmental Stressors in Disease and Implications for Human Health	Boston, MA

Regional/local location:

DATE	TOPIC/TITLE	ORGANIZATION	LOCATION
2005	*A Case-only Approach to Understanding the Mechanisms Involved in Bladder Cancer*	Dartmouth Medical School	Lebanon, NH
2006	*Epigenetic Alterations in Environmental Pathology*	Pathology Research and Teaching Rounds, Department of Pathology and Laboratory Medicine, Brown University	Providence, RI
2007	*Epigenetics in Cancer Biology and Toxicology*	Pathobiology Seminar Series, Program in Pathobiology, Brown University	Providence, RI
2007	*Epigenetics in Cancer Biology and Toxicology*	Pediatrics Research Colloquium, Women and Infants Hospital	Providence, RI
2007	*Epigenetics in Cancer Biology and Toxicology*	COBRE Center for Cancer Research Development Seminar, Rhode Island Hospital	Providence, RI

2007	*Epigenetics in Cancer Biology and Toxicology*	Pathology Grand Rounds, Rhode Island Hospital	Providence, RI
2008	*Epigenetics, Exposures, and Fetal Programming*	Pediatric Research Colloquium, Women and Infants Hospital	Providence, RI
2009	*Clinical and Etiological Significance of Epigenetic Profiles in Bladder Cancer*	Clinical Epidemiology Seminar, Dartmouth Medical School	Lebanon, NH
2009	*Beyond the Barker Hypothesis: Lifespan Implications of the Intrauterine Environment*	Office of Women's Health, NIH, The Warren Alpert Medical School of Brown University, and Women and Infants Hospital, Moving into the Future: New Dimensions and Strategies for Women's Health Research for the NIH	Providence, RI
2009	*Clinical Importance of Epigenetic Profiles in Bladder Cancer*	Grand Rounds, Rhode Island Hospital, Department of Oncology	Providence, RI
2009	*Clinical Importance of Epigenetic Profiles in Bladder Cancer*	Program in Epidemiology Seminar Series, Department of Community Health, Brown University	Providence, RI
2010	*Placental Epigenetic Alterations as Markers of the Intrauterine Environment*	Children's Environmental Heath and Disease Research Center at Dartmouth	Lebanon, NH
2010	*Epigenetics in Development and Beyond*	Brown Center for Children at Risk Journal Club, Women and Infants Hospital	Providence, RI
2010	*Beyond the Barker Hypothesis: Lifespan Implications of the Intrauterine Environment*	Department of Pediatrics, Hasbro Children's Hospital, Grand Rounds	Providence, RI
2012	*Epigenetic Epidemiology of Bladder Cancer*	Norris Cotton Cancer Center, Dartmouth Medical School, Grand Rounds	Lebanon, NH

2012	*Epigenetics in Human Health and Disease*	Medical Genetics Seminar Series, Department of Pediatrics, Dartmouth-Hitchcock Medical Center	Lebanon, NH
2012	*Placental Epigenetics as Markers of the Intrauterine Environment*	COBRE Center for Perinatal Biology, NIH Site Visit, Women and Infants Hospital	Providence, RI
2014	*Epigenetic Mechanisms Linking Environment to Newborn Outcomes*	Department of Epidemiology, Brown University School of Public Health	Providence, RI

XIX. BIBLIOGRAPHY:

A. Peer-reviewed publications in print or other media:

Original articles:

1. Young BA, Meltzer K, and **Marsit C**. *Scratching the Surface of Mimicry: Sound Production through Scale Abrasion in Snakes.* Hamadryad, 1999. **24**: p. 29-38.

2. Young BA, Meltzer K, **Marsit C**, and Abishahin G. *Cloacal popping in snakes.* Journal of Herpetology, 1999. **33**(4): p. 557-566.

3. Young BA, **Marsit C**, and Meltzer K. *Comparative morphology of the cloacal scent gland in snakes (Serpentes: Reptilia).* Anat Rec, 1999. **256**(2): p. 127-38.

4. **Marsit CJ**, Fried B, and Sherma J. *Carbohydrate analysis, by high performance thin layer chromatography, of Cerithidea californica (Gastropoda : Prosobranchia).* J Liquid Chromatography Related Technologies, 2000. **23**(15): p. 2413-7.

5. **Marsit CJ**, Fried B, and Sherma J. *Neutral lipids in cercariae, encysted metacercariae, and rediae of Echinostoma caproni.* J Helminthol, 2000. **74**(4): p. 365-7.

6. **Marsit CJ**, Fried B, and Sherma J. *High-performance thin-layer chromatographic analysis of lutein and beta-carotene in Cerithidia californica (Gastropoda) infected with two species of larval trematodes.* J Parasitol, 2000. **86**(3): p. 635-6.

7. **Marsit CJ**, Fried B, and Sherma J. *Neutral lipids in cercariae, encysted metacercariae, and rediae of Zygocotyle lunata.* J Parasitol, 2000. **86**(5): p. 1162-3.

8. **Marsit CJ**, Hasegawa M, Hirao T, Kim DH, Aldape K, Hinds PW, Wiencke JK, Nelson HH, and Kelsey KT. *Loss of heterozygosity of chromosome 3p21 is associated with mutant TP53 and better patient survival in non-small-cell lung cancer.* Cancer Res, 2004. **64**(23): p. 8702-7.

9. **Marsit, C.J.**, Liu, M., Nelson, H.H., Posner, M., Suzuki, M., and Kelsey, K.T., *Inactivation of the Fanconi anemia/BRCA pathway in lung and oral cancers: implications for treatment and survival.* Oncogene, 2004. **23**(4): p. 1000-4.

10. **Marsit, C.J.**, Wiencke, J.K., Liu, M., and Kelsey, K.T., *The race associated allele of Semaphorin 3B (SEMA3B) T415I and its role in lung cancer in African-Americans and Latino-Americans.* Carcinogenesis, 2005. **26**(8): p. 1446-9.

11. **Marsit, C.J.**, Karagas, M.R., Andrew, A., Liu, M., Danaee, H., Schned, A.R., Nelson, H.H., and Kelsey, K.T., *Epigenetic inactivation of SFRP genes and TP53 alteration act jointly as markers of invasive bladder cancer.* Cancer Res, 2005. **65**(16): p. 7081-5.

12. **Marsit, C.J.**, Zheng, S., Aldape, K., Hinds, P.W., Nelson, H.H., Wiencke, J.K., and Kelsey, K.T., *PTEN expression in non-small-cell lung cancer: evaluating its relation to tumor characteristics, allelic loss, and epigenetic alteration.* Hum Pathol, 2005. **36**(7): p. 768-76.

13. **Marsit, C.J.**, Kim, D.H., Liu, M., Hinds, P.W., Wiencke, J.K., Nelson, H.H., and Kelsey, K.T., *Hypermethylation of RASSF1A and BLU tumor suppressor genes in non-small cell lung cancer: implications for tobacco smoking during adolescence.* Int J Cancer, 2005. **114**(2): p. 219-23.

14. Hirao, S., Hirao, T., **Marsit, C.J.**, Hirao, Y., Schned, A., Devi-Ashok, T., Nelson, H.H., Andrew, A., Karagas, M.R., and Kelsey, K.T., *Loss of heterozygosity on chromosome 9q and p53 alterations in human bladder cancer.* Cancer, 2005. **104**(9): p. 1918-23.

15. **Marsit, C.J.**, Okpukpara, C., Danaee, H., and Kelsey, K.T., *Epigenetic silencing of the PRSS3 putative tumor suppressor gene in non-small cell lung cancer.* Mol Carcinog, 2005. **44**(2): p. 146-50.

16. Nelson, H.H., Wilkojmen, M., **Marsit, C.J.**, and Kelsey, K.T., *TP53 mutation, allelism and survival in non-small cell lung cancer.* Carcinogenesis, 2005. **26**(10): p. 1770-3.

17. **Marsit, C.J.**, Wiencke, J.K., Nelson, H.H., Kim, D.H., Hinds, P.W., Aldape, K., and Kelsey, K.T., *Alterations of 9p in squamous cell carcinoma and adenocarcinoma of the lung: association with smoking, TP53, and survival.* Cancer Genet Cytogenet, 2005. **162**(2): p. 115-21.

18. **Marsit, C.J.**, Karagas, M.R., Danaee, H., Liu, M., Andrew, A., Schned, A., Nelson, H.H., and Kelsey, K.T., *Carcinogen exposure and gene promoter hypermethylation in bladder cancer.* Carcinogenesis, 2006. **27**(1): p. 112-6.

19. Peters, E.S., McClean, M.D., **Marsit, C.J.**, Luckett, B., and Kelsey, K.T., *Glutathione S-transferase polymorphisms and the synergy of alcohol and tobacco in oral, pharyngeal, and laryngeal carcinoma.* Cancer Epidemiol Biomarkers Prev, 2006. **15**(11): p. 2196-202.

20. **Marsit, C.J.**, Houseman, E.A., Christensen, B.C., Eddy, K., Bueno, R., Sugarbaker, D.J., Nelson, H.H., Karagas, M.R., and Kelsey, K.T., *Examination of a CpG island methylator phenotype and implications of methylation profiles in solid tumors.* Cancer Res, 2006. **66**(21): p. 10621-9.

21. **Marsit, C.J.**, Eddy, K., and Kelsey, K.T., *MicroRNA responses to cellular stress.* Cancer Res, 2006. **66**(22): p. 10843-8.

22. **Marsit, C.J.**, McClean, M.D., Furniss, C.S., and Kelsey, K.T., *Epigenetic inactivation of the SFRP genes is associated with drinking, smoking and HPV in head and neck squamous cell carcinoma.* Int J Cancer, 2006. **119**(8): p. 1761-6.

23. **Marsit, C.J.**, Karagas, M.R., Schned, A., and Kelsey, K.T., *Carcinogen exposure and epigenetic silencing in bladder cancer.* Ann N Y Acad Sci, 2006. **1076**: p. 810-21.

24. Christensen, B.C., **Marsit, C.J.**, Welsh, M.M., Nelson, H.H., & Kelsey, K.T. *Genome-wide alterations in CpG island methylation induced by arsenite*. Eur J Oncol, 2007. **12**(1): p. 1-5.

25. **Marsit, C.J.**, Houseman, E.A., Schned, A.R., Karagas, M.R., and Kelsey, K.T. *Promoter hypermethylation is associated with current smoking, age, gender and survival in bladder cancer.* Carcinogenesis, 2007. **28**(8): p. 1745-51.

26. Schned, A., Andrew, A., **Marsit, C.**, Morris, S., Zens, S., Kelsey, K., and Karagas, M., *The effect of chronic arsenic exposure from drinking water on the pathologic characteristics of urothelial tumors in a non-selected patient population with bladder cancer.* Virchows Archiv, 2007. **451**(2): p. 124-124.

27. Houseman, E.A., **Marsit, C.**, Karagas, M., and Ryan, L.M., *Penalized item response theory models: application to epigenetic alterations in bladder cancer.* Biometrics, 2007. **63**(4): p. 1269-77.

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117. Lester BM, Conradt E, **Marsit CJ**. Epigenetic Basis for the Development of Depression in Children. Clinical Obstetrics and Gynecology 2013, 56(3):556-65.

118. Koestler DC, Avissar-Whiting MA, Jackson B, Karagas MR, **Marsit CJ**. *Differential DNA Methylation in Umbilical Core Blood of Infants Exposed to Low Levels of Arsenic In Utero.* Environ Health Perspect 2013, 121(8):971-7.

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121. Koestler DC, Li J, Baron JA, Tsongalis GJ, Butterly LF, Goodrich M, Lesseur C, Karagas MR, **Marsit CJ**, Moore JH, Andrew AS, Srivastava A. Distinct patterns of DNA methylation in conventional adenomas involving the right and left colon. Mod Pathol 2013, (Epub ahead of print).

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124. Koestler DC, Christensen BC, **Marsit CJ**, Kelsey KT, Houseman EA. Recursively partitioned mixture model clustering of DNA methylation data using biologically informed correlation structures. Stat Appl Genet Mol Biol 2013, 12(2):225-40.

125. Wilhelm-Benartzi CS, Koestler DC, Karagas MR, Flanagan JM, Christensen BC, Kelsey KT, **Marsit CJ**, Houseman EA, Brown R. Review of processing and analysis methods for DNA methylation array data. Br J Cancer 2013, 109(6):1394-402.

126. **Marsit CJ**, Koestler DC, Watson-Smith D, Boney CM, Padbury JF, Luks F. *Developmental Genes Targeted for Epigenetic Variation Between Twin-Twin Transfusion Syndrome Children*. Clinical Epigenetics 2013, 5(1):18.

127. Appleton AA, Armstrong DA, Lesseur C, Lee J, Padbury JF, Lester BM, **Marsit CJ**. *Patterning in Placental 11-B-hydroxysteroid dehydrogenase methylation according to prenatal socioeconomic adversity*. PLoS One 2013, 8(9):e74691.

128. Conradt E, Lester BM, Appleton AA, Armstrong DA, **Marsit CJ**. *The Role of DNA methylation of NR3C1 and 11β-HSD2 and Exposure to Maternal Mood disorder in Utero on Newborn Neurobehavior.* Epigenetics 2013, 8(12):1321-9

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131. Andrew AS, Gui J, Hu T, Wyszynski A, **Marsit CJ**, Kelsey KT, Schned AR, Tanyos SA, Pendleton EM, Mason RA, Li Z, Zens MS, Borsuk M, Moore JH, Karagas MR. *Genetic polymorphisms modify bladder cancer recurrence and survival in a U.S. population-based prognostic study*. British J Urol 2014 (*in press*).

132. Lesseur C, Armstrong DA, Murphy MA, Appleton AA, Koestler DC, Paquette AG, Lester BM, **Marsit CJ**. *Sex-specific associations between placental leptin promoter DNA methylation and infant neurobehavior.* Psychoneuroendocrinology 2014, 40:1-9

133. Houseman EA, Molitor J, **Marsit CJ**. *Reference-Free Cell Mixture Adjustments in Analysis of DNA Methylation Data*. BMC Bioinformatics 2014, 30(10):1431-9.

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136. Lesseur C, Paquetta AG, **Marsit CJ**. *Epigenetic Regulation of Infant Neurobehavioral Outcomes*. Medical Epigenetics 2014, 2:71-79.

137. Langevin SM, Houseman EA, Accomando WP, Koestler DC, Christensen BC, Nelson HH, Karagas MR, **Marsit CJ**, Wiencke JK, Kelsey KT. *Leukocyte-adjusted epigenome-wide association studies of blood from solid tumor patients.* Epigenetics 2014, 9(6): (*epub ahead of print*).

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139. Davis MA, Li Z, Gilbert-Diamond D, Mackenzie TA, Cottingham KL, Jackson BP, Lee JS, Baker ER, **Marsit CJ**, Karagas MR. *Infant toenails as a biomarker of in utero arsenic exposure*. J Expo Sci Environ Epidemiol. 2014, (*epub ahead of print*)

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141. Stroud LR, Papandonatos GD, Rodriguez D, McCallum M, Salisbury AL, Phipps MG, Lester B, Huestis MA, Niaura R, Padbury JF, **Marsit CJ**. *Maternal Smoking During Pregnancy and Infant Stress Reponse: Test of a prenatal programming hypothesis*. Psychoneuroendocrinology 2014, 48C:29-40.

Book chapters:

1. **Marsit CJ**, LaMontagne AD, Kelsey KT. Biological Markers in Occupational and Environmental Medicine. In: Rosenstock, L., Cullen, M.R., Brodkin, C.A., and Redlich, C.A. Textbook of Clinical Occupational and Environmental Medicine (2nd edition). Philadelphia: Elsevier, Inc. 2005:139-46.

2. Christensen BC, **Marsit CJ**, and Kelsey KT. Role of environmental factors on the epigenome. In: Michels, K.B. Epigenetic Epidemiology. London: Springer Science 2012.

3. **Marsit CJ** and Christensen BC. Blood-derived DNA methylation markers of cancer risk. In: Karpf, A. Epigenetic Alterations in Oncogenesis. New York: Springer 2013.

4. Lester BM, **Marsit CJ**, and Bromer C. Behavioral Epigenetics and the Developmental Origins of Child Mental Health Disorders. In: Brandt, Perry, Seligman, Tronick. Infant and Early Childhood Mental Health: Core Concepts and Clinical Practice. Arlington, VA: American Psychiatric Publishing 2014.

Abstracts (Poster Presentations Only, Most Recent 5 Years):

22. Avissar, M., McClean, M.D., Kelsey, K.T., and **Marsit, C.J.** *MicroRNA Alterations are Associated with Exposures and Clinical Features in Head and Neck Squamous Cell Carcinoma.* Proc Am Assoc Cancer Res, 50, 2009.

23. Poage, G.M., Christensen, B.C., **Marsit, C.J.**, Houseman, E.A., Karagas, M.R., Wrensch, M.R., Yeh, R-F., Nelson, H.H., Wiemels, J.L., Zheng, S., Posner, M.R., McClean, M.D., Wiencke, J.K., and Kelsey, K.T. *DNA methylation profiles are associated with specific genome-wide copy number alteration profiles in head and neck squamous cell carcinoma.* Proc Am Assoc Cancer Res, 50, 2009.

24. Christensen, B.C., Houseman, E.A., **Marsit, C.J**., Zheng, S., Wrensch, M.R., Wiemels, J.L., Nelson, H.H., Karagas, M.R., Padbury, J.F., Bueno, R., Sugarbaker, D.J., Yeh, R.F., Wiencke, J.K., and Kelsey, K.T. *Environmental Exposures and Aging are Associated with Tissue-specific Alterations in DNA Methylation at Cancer-related CpG Loci in Normal Tissues.* Proc Am Assoc Cancer Res, 50, 2009.

25. **Marsit, C.J.**, Christensen, B.C., Houseman, E.A., Nelson, H.H., Wrensch, M.R., Wiemels, J.L., Zheng, S., Wiencke, J.K., Schned, A.R., Karagas, M.R., Kelsey, K.T. *CpG Methylation Arrays Define Novel Genes Associated with Invasive Bladder Cancer.* Proc Am Assoc Cancer Res, 50, 2009.

26. Christensen, B.C., Kelsey, K.T., Houseman, E.A., **Marsit, C.J**., Zheng, S., Wrensch, M.R., Wiemels, J.L., Nelson, H.H., Karagas, M.R., Kushi, L. H., Kwan, M.L., & Wiencke, J.K. *Breast carcinoma DNA methylation profiles are associated with tumor size, alcohol intake, and folate intake.* Am Assoc Cancer Res; Cancer Epigenetics, 2010.

27. Banister, C.E., Koestler, D., Maccani, M., Houseman, E.A., Padbury, J.F., and **Marsit, C.J**. *Global Methylation Patterning of Placenta from Intrauterine Growth Restricted*

(IUGR) and Small for Gestational Age (SGA) Pregnancies. Society for Gynecological Investigation Annual Meeting, 2010.

28. Maccani, M.A., Koestler, D., Banister, C.E., Padbury, J.F., Houseman, E.A., and **Marsit, C.J.** *MicroRNA Expression Profiles are Associated with Growth Restriction in the Human Placenta*. Society for Gynecological Investigation Annual Meeting, 2010.

29. Poage, G.M., Christensen, B.C., Houseman, E.A., McClean, M.D., Wiencke, J.K., Posner, M.R., Clark, J.R., Nelson, H.H., **Marsit, C.J.**, & Kelsey, K.T. *Concurrent gene promoter hypermethylation and allele loss occurs infrequently in head and neck squamous cell carcinomas.* Proc Am Assoc Cancer Res, 51, 2010.

30. Gee, G.V., Koestler, D.C., Christensen, B.C., Sugarbaker, D.J., Ugolini, D., Ivaldi, G.P., Resnick, M.B., Houseman, E.A., Kelsey, K.T., & **Marsit, C.J.** *MicroRNAs regulation wnt Signalling are downregulated in malignant pleural mesothelioma.* Proc Am Assoc Cancer Res, 51, 2010.

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32. Christensen, B.C., Kelsey, K.T., Houseman, E.A., **Marsit, C.J.**, Zheng, S., Wrensch, M.R., Wiemels, J.L., Nelson, H.H., Karagas, M.R., Kushi, L.H., Kwan, M., Wiencke, J.K. *Breast Carcinoma DNA Methylation Profiles are Associated with Tumor Size, Alcohol Intake, and Folate Intake*. Proc Am Assoc Cancer Res, 51, 2010. (minisymposium).

33. Wilhelm, C.S., Kelsey, K.T., Butler, R., Plaza, S., Gagne, L., Zens, M.S., Andrew, A.S., Morris, S., Nelson, H.H., Schned, A.R., Karagas, M.R., and **Marsit, C.J.** *Implications of LINE1 Methylation for Bladder Cancer Risk in Women*. Proc Am Assoc Cancer Res, 51, 2010.

34. Menard, H.L., Yuan, J-M., **Marsit, C.J.,** Wilhelm, C.S., Nelson, H.H., and Kelsey, K.T. *Body Mass Index Interacts with DNA Global Methylation Levels to Predict Bladder Cancer in the Shanghai Bladder Cancer Study*. Proc Am Assoc Cancer Res, 51, 2010.

35. Banister, C., Koestler, D., Maccani, M.A., Houseman, E.A., Padbury, J.F., & **Marsit, C.J**. *Infant Growth is Associated with Distinct Patterns of DNA Methylation in Human Placenta*. 2nd Biennial IDeA Symposium, Bethesda, MD, 2010.

36. Tyrka, A.R., Price, L.H., **Marsit, & C**., Carpenter, L.L. *Methylation of Leukocyte Glucocorticoid Receptor in Healthy Adults: Associations with Childhood Parenting Experience*. NYAS Behavioral Epigenetics, Boston, MA, 2010.

37. Stroud, L., Bublitz, M., McCallum, M., Padbury, J., and **Marsit, C.J.** *Methylation of Placental Glucorticoid Receptor Gene (NR3C1) as a Mediator of Links Between Maternal Smoking and Infant Neurobehavior*. NYAS Behavioral Epigenetics, Boston, MA, 2010.

38. Filiberto, A.C., Maccani, M.A., Wilhelm, C., Gagne, L.A., & **Marsit, C.J.** *Birthweight is Associated with DNA Promoter Methylation of the Glucocorticoid Receptor in Human Placenta*. NYAS Behavioral Epigenetics, Boston, MA, 2010

39. Bromer, C., **Marsit, C.J.**, Filberto, A.C., Gagne, L.A., Marsit, C.J., & Lester, B. *Methylation of NR3C1 and Infant Neurobehavior*. NYAS Behavioral Epigenetics, Boston, MA, 2010

40. **Marsit, C.J.**, Lambertini, L., Bromer, C., Filiberto, A., Maccani, M., Gagne, L., Padbury, J.F., Lester, B.M., and Chen, J. *Epigenetic Alterations in the Placenta are Associated with Infant Neurobehavioral Outcomes.* Society for Gynecological Investigation Annual Meeting, 2011.

41. Lambertini, L., **Marsit, C.J.**, Sharma, P., Ma, Y., Wetmur, J., and Chen, J. *Imprinted Genes and Fetal Development*. Society for Gynecological Investigation Annual Meeting, 2011.

42. Waterboer, T., Liang, C., **Marsit, C.J.,** McClean, M.D., Nelson, H.H., Pawlita, K., and Kelsey, K.T. *Prognostic significance of HPV-16 serologic markers in head and neck squamous cell carcinoma.* Annual Meeting of German Society of Epidemiology, 2011.

43. Lesseur C, Gilbert-Diamond D, Andrew AS, Mason R, Li Z, Kelsey KT, **Marsit CJ** & Karagas MR. *A case-control study of arsenic metabolism gene polymorphisms and bladder cancer in New Hampshire*. Superfund Research Program Annual Meeting, Lexington, Kentucky, 2011.

44. Lesseur C, Armstrong D, Paquette AD, Koestler DC, Appleton AA, Karagas MR, & **Marsit CJ**. *Pregnancy factors and arsenic exposure effects on Leptin DNA methylation*. Superfund Research Program Annual Meeting, Raleigh, North Carolina, 2012.

45. Maccani MA, Padbury JF, Lester BM, Knopik VS, **Marsit CJ**. *Placental miRNA expression profiles associated with measures of infant neurobehavioral outcomes.* Max Planck Institute Epigenetics Meeting, Germany, 2012.

46. Lesseur C, Armstrong DA, Paquette AG, Appleton AA, Koestler DC, Padbury JF, Karagas MR, **Marsit CJ**. *Cord Blood Leptin Gene Promoter DNA Methylation is Associated with Infant Birthweight.* Society for Gynecological Investigation Annual Meeting, 2013.

47. Paquette AG, Lesseur C, Armstrong DA, Koestler DC, Lester BM, **Marsit CJ**. Epigenetic *Modulation of the Placental Serotonin Response Pathway and its Role in Development.* Society for Gynecological Investigation Annual Meeting, 2013.

48. Koestler DC, Murphy MA, Houseman EA, Karagas MR, Kelsey KT, **Marsit CJ**. *Profiles of DNA methylation in peripheral blood are associated with bladder cancer survival*. Proc Am Assoc Cancer Res, 54, 2013.

49. Marsit CJ, Koestler DC, Maccani JZJ, Lesseur C, Armstrong D, Kelsey KT, Houseman EA, Karagas MR. *Epigenetic Effects of Environmental Trace Metals Exposure In Utero.* NIEHS/USEPA Children's Health Centers Annual Meeting, Washington, DC, 2013.

50. Lesseur C, Armstrong DA, Paquette AG, Li Z, Padbury JF, Marsit CJ. *Maternal Obesity and Gestational Diabetes are Associated with Leptin Promoter DNA Methylation in Human Placenta*. Pediatric Academic Societies Annual Meeting, Vancover BC, 2014.

51. Paquette AG, Lester BM, Armstrong DA, Lesseur C, Marsit CJ. *Placental FKBP5 Genetic and Epigenetic Variation is associated with Infant Neurobehavioral Outcomes.* Pediatric Academic Societies Annual Meeting, Vancover BC, 2014.

Papers Read:

1. **Marsit, C.J**., Bueno, R., and Kelsey, K.T. *Promoter hypermethylation defines clonal fields in lung cancer patients*. AACR Special Conference on Chromatin, Chromosomes, and Cancer Epigenetics, Kona, Hawaii, 2004.

2. **Marsit, C.J.**, Houseman, E.A, Kraunz, K.S., McClean, M.D., and Kelsey, K.T. *Does DNA hypermethylation and genetic deletion occur as distinct pathways in aerodigestive malignancy?* AACR Special Conference Advances and Challenges in Aerodigestive Epithelial Cancer: Genetics, Diagnosis, and Therapy, Charleston, South Carolina, 2007.

3. Christensen, B.C., Avissar, M., Nelson, H.H., Bueno, R., Sugarbaker, D.J., Kelsey, K.T., and **Marsit, C.J**. *MicroRNA Alterations in Malignant Pleural Mesothelioma as Biomarkers of Disease.* 9th International Conference of the International Mesothelioma Interest Group (IMIG), Amsterdam, the Netherlands, 2008.

4. **Marsit, C.J.**, Houseman, E.A., Christensen, B.C., Gagne, L., Wrensch, M.R., Nelson, H.H., Wiemels, J., Zheng, S., Wiencke, J.K., Andrew, A.S., Schned, A.R., Karagas, M.R., & Kelsey, K.T. *DNA Methylation Arrays Identify HOXB2 and KRT13 Methylation as Markers of Invasive Bladder Cancer and Poor Patient Survival.* Am Assoc Cancer Res; Cancer Epigenetics, San Juan, Puerto Rico, 2010.

5. **Marsit, C.J.**, Koestler, D., Christensen, B.C., Nelson, H.H., Schned, A.R., Karagas, M.R., Houseman, E.A., & Kelsey, K.T. *DNA Methylation Array Analysis Identified Profiles of Blood-derived DNA Methylation Associated with Bladder Cancer*. Am Assoc Cancer Res; Future of Molecular Epidemiology, Miami, FL, 2010.

6. **Marsit CJ**, Bromer C, Padbury JF, Lester BM. *Placental Epigenetics and Infant Neurobehavior.* Children's Environmental Health Network Annual Meeting, San Francisco, CA, 2012.

Work in Review:

1. Paquette AG, Lester BM, Armstrong DA, Lesseur C, **Marsit CJ**. *Placental FKBP5 Genetic and Epigenetic Variation is associated with Infant Neurobehavioral Outcomes.*

2. Tan X, Nelson HH, Langevin SM, McClean MD, **Marsit CJ**, Waterboer T, Pawlita M, Kelsey KT, Michaud DS. *Obesity associations with head and neck cancer risk and survival differ by human papillomavirus status*

3. Maccani JZJ, Koestler DC, Houseman EA, **Marsit CJ**, Kelsey KT. *DNA Methylation Changes in the Placenta Associated With Manganese in Utero*

4. Maccani JZJ, Koestler DC, Lester BM, Kelsey KT, **Marsit CJ**. *Placental DNA methylation changes within the EMID2 gene are associated with both infant toenail mercury and adverse neurobehavioral outcomes*

Work in Progress:

1. Koestler DC, Avissar-Whiting MA, Jackson B, Karagas MR, **Marsit CJ**. *Epigenetic effects of methyl-mercury exposure in infant cord blood.*
2. Appleton AA, Murphy MA, Koestler DC, Lesseur C, Paquette AG, Padbury JF, Lester BM, Marsit CJ. *Profiles and Predictors of Infant Neurobehavior in a Healthy Population.*

B. Non-peer-reviewed publications in print or other media:

NA

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PROFESSIONAL EXPERIENCE

Princeton University
Professor of Environmental Engineering and International Affairs (2011-present)
Woodrow Wilson School of Public and International Affairs and
Civil and Environmental Engineering Department
Associate Professor of Environmental Engineering and International Affairs (2009-2011)
Associate Professor of Public and International Affairs (with tenure),
Woodrow Wilson School of Public and International Affairs (2006 - 2009)
Assistant Professor of Public and International Affairs, Woodrow Wilson School (1999- 2006)
Affiliate faculty, Geosciences Department (1999 - present)
Affiliate faculty, Princeton Environmental Institute (1999 - present)
Affiliate faculty, Civil and Environmental Engineering Department (2003 - present)

National Center for Atmospheric Research, Boulder, CO
Visiting Scientist, Atmospheric Chemistry Division (Summer 1999)
Post-doctoral Fellow, Advanced Study Program (1996-1998)

United States Environmental Protection Agency, Washington D.C.
Program Manager, Global Change Division (1989-1990)

Environmental Consulting
Chief Environmental Engineer, Bruce Company, Washington D.C. (1988-1989)
Chemist, ICF Technology Inc., Washington D.C. (1985-1987)

EDUCATION

Harvard University
Ph.D., Atmospheric Chemistry, Earth and Planetary Science Department, 1996
Dissertation: Influence of fossil fuel combustion and biomass burning on tropospheric ozone.
Advisor: Daniel J. Jacob
M.A., Atmospheric Chemistry, Earth and Planetary Science Department, 1992

Stanford University
M.S., Environmental Engineering, 1988

Brown University
Sc.B., with honors, Chemistry, 1985

HONORS & PROFESSIONAL SERVICE

Advisory Board, PANDA, Partnership with chiNa on space DAta, European Commission project (2013-2016)
Science Advisory Board, U.S. Environmental Protection Agency, Advisory Council on Clean Air Compliance (2010-2013)
Executive Committee, Princeton Institute for International and Regional Studies (2011-2015)

Advisory Board, ECLAIRE, Effects of climate change on air pollution impacts and response strategies for European ecosystems, European Commission project (2011-2015)
Assistant Editor, New Directions, *Atmospheric Environment* (2011-2012)

Executive Committee, Cooperative Institute for Climate Science, Princeton University and NOAA Geophysical Fluid Dynamics Laboratory (2006 - present)
Science Steering Committee, International Geosphere Biosphere Program (IGBP), Analysis, Integration and Modeling of the Earth System (including human impacts) (2005 - 2010)

Intergovernmental Panel on Climate Change (IPCC) contributing author.
The IPCC shared the Nobel Peace Prize with Vice President Al Gore (2007)
National Research Council / National Academy of Science, Committee on Air Quality Management in the United States. (2/2001- 4/2004)

NASA New Investigators Program grant (2002-2006)

Advanced Study Program Postdoctoral Fellowship, NCAR. (1996-1998)
Provided 2 years of unconstrained research funding.

AAAS Congressional Science Fellowship (declined) (1996)

NASA Graduate Student Fellowship in Global Change Research (1993 - 1996)
Provided stipend, research and travel funds for 3 years of doctoral research.

Invited participant, Atmospheric Chemistry Conference for Emerging Senior Scientists (ACCESS) and Gordon Conference in Atmospheric Chemistry (June 1995)

Harvard University Certificate of Distinction in Teaching (1992 - 1993)

Harvard University Levinson Teaching Award nomination (1993)

Graduate Student Fellowship, U.S. Dept. of Education, tuition and stipend (1991 - 1993)

Stanford University School of Engineering Fellowship, tuition. (1987 - 1988)

Elected to Sigma Xi (1985)

Sc.B. awarded with departmental honors, Brown University (1985)

TEACHING

Princeton University

WWS594s *Climate Change: Science and Policy* (Spring 2014)
CEE/WWS/ENV334 *Global Environmental Issues* (Spring 2010, Spring 2011, Fall 2012, Fall 2013)
WWS591g *Policy Workshop: Climate Change: Methane Mitigation Strategies* (Fall 2012)
WWS591e *Policy Workshop: Post Copenhagen Climate Change Initiatives: Fast Action Mitigation Strategies* (Fall 2010)
WWS350 *The Environment: Science and Policy* (Spring 2013)
WWS594S *Introduction to Science, Technology and Environmental Policy: Energy and climate policy analysis* (with Frank von Hippel) (Spring 2011)
FRS136 *Science and Policy of Global Environmental Issues* (Spring 2010)
WWS/ENV334 *Global Environmental Issues* (Spring 2009)
FRS136 *Living in a Polluted Greenhouse* (Spring 2009)

WWS591e	*Policy Workshop: Integrating Clean Air and Greenhouse Gas Mitigation Strategies in Future Environmental Policy: A Focus on Black Carbon*	(Fall 2008)
WWS 402d	*Development of Policy Initiatives for the Sustainable Use of Energy at Princeton University*	(Spring 2007)
WWS 591a	*Policy Workshop: Climate Change, State Initiatives, and Coastal Hazards: Mitigation and Adaptation Strategies for New Jersey*	(Fall 2006)
WWS 402e	*Sustainable Development – Can We Do It?*	(Spring 2003)
WWS402e	*Air Pollution, Climate Change and Energy: How China Matters*	(Spring 2001)
WWS402f	*Air Pollution in India and China: Thinking Globally, Acting Locally*	(Spring 2000)
WWS475	*Global Environmental Issues*	(Spring 2003, Spring 2005, Fall 2005)
WWS584	*The Use of Science in Environmental Policy*	(Fall 2004, Spring 2006, 2010)
WWS586e	*Global Environmental Issues: Science and Policy*	(Spring 2005)
WWS588	*Issues in Science, Technology and Environmental Policy*	(Spring 1999)
WWS589	*Methods in Science, Technology and Environmental Policy*	(Fall 1999, 2000 & 2002)
WWS591d	*Environmental Diplomacy* (with Daniel Reifsnyder)	(Fall 1999)

Harvard University, Harvard College, Teaching Fellow
Environmental Science and Public Policy, Profs. M.B. McElroy and W. Clark (Fall and Spring 1993)
Atmospheric Chemistry, Department of Earth and Planetary Science, Prof. D.J. Jacob (Spring 1992)
The Atmosphere, Undergraduate core program, Professor M.B. McElroy (Fall 1991)

Brown University, Department of Chemistry, Teaching Assistant
Honors Chemistry. First year honors course, Professor P. Rieger (Fall 1983)

Princeton Doctoral Students (primary adviser)
Xiaoping Wang (Ph.D. WWS 2004), now World Bank staff.
Junfeng Liu, (Ph.D. WWS 2006), now Assistant Professor, Peking University
Eri Saikawa, (Ph.D., WWS, September 2010), now Assistant Professor, Emory University
Shiri Avnery, (Ph.D., WWS, 2012)
David Kanter, (Ph.D., WWS, 2014), now post-doc Columbia University;
Wei Peng, G3, WWS
Xiaoyuan Li, G2, CEE
Yue Qin, G2, WWS
Junnan Yang, G1, WWS

Princeton Doctoral Students (committee member)
Shardul Agrawala (PhD, WWS, 1999), now climate change administrator, Environment Directorate, OECD, Paris, France.
Shangping, Xu (PhD, CEE 2004), now Associate Professor of Geosciences, University of Wisconsin – Milwaukee.
Yan Zhang, (PhD, CEE, September 2010), now engineering technology entrepreneur.
David Miller, G5, CEE
Megan Konar, (PhD CEE, 2012). Now Asst. Prof. University of Illinois
Carole Dalin, (PhD, CEE, 2014), now post-doc
Matt Reid, (PhD, CEE, 2014), now post-doc
Mary Kang, (PhD, CEE, 2014), now post-doc Stanford University
Xinwo Huang, G3, CEE
David Pal, G2, CEE

Senior Thesis Advisees:

Maha Qasim (CEE/WWS, 2007)
Susan Lyons (WWS, 2008)
Lyra Hass, (Politics, 2008)

Robert Weiss, (WWS, 2009). **Peter W. Stroh '51 Prize for best environmental thesis, as nominated by any department and the Richard H. Ullman Prize for best Woodrow Wilson School thesis on US foreign policy at Princeton**.

Virginia Maloney, (WWS, 2010).

Brooks Barron, (WWS, 2011). American Public Perception of Climate Change. **Peter W. Stroh '51 Environmental Thesis Prize**. The Princeton Environmental Institute (PEI) awards the Stroh Prize annually to a senior from any department who has written the best thesis on an environmental topic.

Lily Fu (WWS, 2011)

Kayley McGrath (WWS, 2012)

Caroline Jo (WWS, 2013), **T.A. Barron Environmental Leadership Prize**.

Andrew Calof (CBE, 2014)

ADMINISTRATIVE RESPONSIBILITIES AT PRINCETON

Director / Acting Director, WWS Science, Technology and Environmental Policy (STEP) program (1999–2000; Spring 2010, 2013-2014)
Director of Graduate Studies, WWS Doctoral Program (2012-present)
Chair, STEP Doctoral Program (1999 – 2001; 2008-present)
Convener of STEP seminar series (1999-2001; 2002-2003; 2004-2007; 2008-2011; 2012-2014)
WWS Faculty Council, ex officio (2012-present)
Princeton Committee on Sustainability (2008 – present)
Princeton Sustainability Steering Council (2013-present)
Andlinger Center for Energy and Environment, Corporate Affiliates Advisory Council (2012-)
Executive Committee, Princeton Institute for International and Regional Studies (2011-2015)
Woodrow Wilson School Faculty Council (Fall 2009–Spring 2010)
Woodrow Wilson School Senior Thesis Prize Committee (1999, 2000)
Masters of Public Policy, Admissions Committee, WWS (1999, 2000, 2010, 2011)
Masters of Public Affairs Admissions Committee, WWS (2002, 2003, 2005, 2006)
University Committee on Libraries and Computing (2002 - 2005)
University Committee on Course of Study (2008 – 2011)
Woodrow Wilson School undergraduate committee (2006, 2007, 2010, 2011)
Scholars in the Nations Service – selection committee (2006, 2008, 2010, 2011)
Faculty fellow, Mathey College (2003 - present)
WWS/CEE faculty search committee (2007-2008)
Andlinger Center Director search committee (2007-2009)

WWS/SEAS joint degree exploratory committee – co-chair (2009)

PROFESSIONAL ACTIVITIES

Editorial Board
Atmospheric Environment

Journal Referee
Science;
Nature;
Nature – Climate Change
Proceedings of the National Academy of Science;
Journal of Geophysical Research - Atmospheres;
Geophysical Research Letters;
Environmental Research Letters;
Atmospheric Environment;
Environmental Science and Technology;
Annual Review of Energy and the Environment;
Environmental Management;
Science of the Total Environment;
Global Environmental Change;
Journal of Atmospheric Science;
Journal of Atmospheric Chemistry;
Atmospheric Chemistry and Physics;
The Royal Society, Proceedings B.

Grant Reviewer
National Aeronautic and Space Association (NASA);
National Science Foundation (NSF);
Environmental Protection Agency;
Research Grants Council of Hong Kong.

Book Reviewer
National Academy of Sciences/ National Research Council;
Prentice-Hall;
Princeton University Press.
The Royal Society, London, U.K.

Conference Session Chairperson

Convener: Black carbons role in global to local air quality and climate change, American Geophysical Union, San Francisco, CA. December 2010
Chair: Measurement and Modeling of Atmospheric Aerosols for Climate and Air Quality Applications, Asia Oceania Geosciences Society, Hyderabad, India. July 2010
Convener: Interconnections between air pollution, climate change, energy and human impacts – science, technology and policy. International Geosphere Biosphere Program (IGBP), Cape Town, South Africa. May 2008
Chair: Megacities, Air Pollution over Asia, International Association of Meteorology and Atmospheric Sciences, Beijing, China. August 2005

Convener: Controlling Emissions of Non-CO2 Greenhouse Gases: Scientific and Policy Challenges, Joint Assembly meeting, New Orleans, LA. May 2005
Chair: Atmospheric Modeling and Dynamics session, Spring American Geophysical Union meeting, Boston, MA. May 2001
Chair: Aspen Global Change Institute, Working Group on Air Quality and Climate Change, Aspen, CO. August 2000

PUBLICATIONS (Peer Reviewed)

Dalin, C, N Hanasaki, H Qiu, **DL Mauzerall** and I Rodriguez-Iturbe, Water for Food: China's inter-provincial and foreign virtual water trade, *Proceedings of the National Academy of Science*, in press 2014.

Shen Z, J Liu, L. W. Horowitz, D. K. Henze, S. Fan, H. Levy II, **D. L. Mauzerall**, J. -T. Lin, and S. Tao, Analysis of Transpacific Transport of Black Carbon during HIPPO-3: Implications for Black Carbon Aging, *Atmospheric Chemistry Physics*, in press 2014.

Avnery, S, **DL Mauzerall**, AM Fiore, Increasing global agricultural production by reducing ozone damages via methane emission controls and ozone resistant cultivar selection, *Global Change Biology*, doi: 10.1111/gcb.12118, 2013.

Smith, KR, H Frumkin, K Balakrishnan, CD Butler, ZA Chafe, I Fairlie, P Kinney, T Kjellstrom, **DL Mauzerall**, TE McKone, AJ McMichael, M Schneider, Energy and Human Health, *Annual Review of Public Health*, 10.1146/annurev-publichealth-031912-114404, 2013.

Kanter, D. **DL Mauzerall**, AR Ravishankara, JS Daniel, RW Portmann, PM Gabriel, WR Moomaw, JN Galloway. A post-Kyoto partner: Considering the stratospheric ozone regime as a tool to manage nitrous oxide, *Proceedings of the National Academy of Science*, 2013.

Robertson, GP, TW Bruulsema, R Gehl, D Kanter **DL Mauzerall**, A Rotz, C Williams. Nitrogen-climate interactions in US agriculture. *Biogeochemistry*, 114 1-3 Pages: 41-70 DOI: 10.1007/s10533-012-9802-4 , July 2013.

Konar, M, Z Hussein, N Hanasaki, **DL Mauzerall**, I Rodriguez-Iturbe, Virtual water trade flows and savings under climate change, *Hydrology and Earth System Sciences* Volume: 17 Issue: 8 Pages: 3219-3234 DOI: 10.5194/hess-17-3219-2013, 2013

G. Philip Robertson, T. W. Bruulsema, R. Gehl, D. Kanter, **D.L. Mauzerall**, A. Rotz and C. Williams. ***Climate-Nitrogen Interactions in Agriculture,*** (2012) In: The Role of Nitrogen in Climate Change and the Impacts of Nitrogen-Climate Interactions on Terrestrial and Aquatic Ecosystems, Agriculture, and Human Health in the United States. A Technical Report Submitted to the US National Climate Assessment. North American Nitrogen Center of the International Nitrogen Initiative (NANC-INI), Suddick, E.C., Davidson, E.A.,(eds) Woods Hole Research Center, 149 Woods Hole Road, Falmouth, MA, 02540-1644
USA. http://www.whrc.org/resources/publications/pdf/SuddicketalWHRC.12.pdf

Y Fang, V Naik, LW Horowitz, **DL Mauzeral**l, Air pollution and associated human mortality: The role of air pollutant emissions, climate change and methane concentration increases

during the industrial period, *Atmospheric Chemistry Physics,* vol 13: 3, 1377-1394 DOI: 10.5194/acp-13-1377-2013, 2013.

Y Fang, **DL Mauzerall**, JF Liu, AM Fiore and LW Horowitz, The impact of climate change on global air pollution-related premature mortality, *Climatic Change, 2013*.

Smith KR, Balakrishnan K, Butler C, Chafe Z, Fairlie I, Kinney P, Kjellstrom T, **Mauzerall DL**, McKone T, McMichael A, Schneider M, Wilkinson P. Energy and health. Chapter 4 in: ***Global Energy Assessment: Toward a Sustainable Future****.* Cambridge, UK: Cambridge University Press and International Institute for Applied Systems Analysis, 2012.

Jacob, D.J., Mauzerall, D.L., Fernandez, J.M., Pennell, W.T. Global Change and Air Quality, in: Hidy, G., Brook, J., Demerjian, K., Molina, L., Pennell, W., Scheffe, R. (Eds.), Technical challenges of multipollutant air quality management. Springer, 2011.

Saikawa, E, J Kurokawa, M Takigawa, J Borken-Kleefeld, **DL Mauzerall**, LW Horowitz, and T Ohara, The impact of China's vehicle emissions on regional air quality in 2000 and 2020: a scenario analysis**,** *Atmos. Chem. Phys*., 11, 9465-9484, 2011.

Kopacz, M, **DL Mauzerall**, J Wang, DK Henze, E Leibensperger. Origin and radiative forcing of black carbon transported to the Himalayas and Tibetan Plateau, *Atmos. Chem. Phys*., 11, 2837–2852, 2011

Avnery, S, **DL Mauzerall**, J Liu, LW Horowitz. Global Crop Yield Reductions due to Surface Ozone Exposure: 1. Year 2000 Crop Production Losses and Economic Damage, *Atmospheric Environment*, 45, 2284-2296, 2011.

Avnery, S, **DL Mauzerall**, J Liu, LW Horowitz. Global Crop Yield Reductions due to Surface Ozone Exposure: 2. Year 2030 Potential Crop Production Losses, Economic Damage, and Implications for World Hunger under Two Scenarios of O_3 pollution, *Atmospheric Environment*, 45, 2297-2309, 2011.

Kopp, RE and **DL Mauzerall**. Assessing the climatic benefits of black carbon mitigation. *Proceedings of the National Academy of Sciences*, **107**:26, 11703-11708, 2010.

Zhang, J, **DL Mauzerall**, T Zhu, S Liang, M Ezzati, J Remais. Environmental health in China: challenges to achieving clean air and safe water, *The Lancet*, **375**:9720, 1110-1119, 2010.

Liu, J, **DL Mauzerall**, L.W. Horowitz, P. Ginoux, A.M. Fiore. Evaluating Inter-continental transport of fine aerosols: (1) Methodology, global aerosol distribution and optical depth, *Atmospheric Environment,* doi:10.1016/j.atmosenv.2009.03.054, 2009.

Liu, J, **DL Mauzerall**, L.W. Horowitz. Evaluating Inter-continental transport of fine aerosols: (2) Global Health Impacts, *Atmospheric Environment, d*oi:10.1016/j.atmosenv.2009.05.032, 2009.

Saikawa, E.; Naik V.; Horowitz, LW; Liu, J; **Mauzerall DL**. Present and potential future contributions of sulfate, black and organic carbon aerosols from China to global air quality, premature mortality and radiative forcing, *Atmospheric Environment*, 43 2814–2822, 2009.

Tong, D.Q. and **Mauzerall, D.L**. Summertime State-Level Source-Receptor Relationships between NO_x Emissions and Downwind Surface Ozone Concentrations over the Continental United States, *Environ. Sci. and Tech.*, 10.1021/es7027636, 2008.

Liu, J., **D. L. Mauzerall**, L. W. Horowitz, Source-Receptor Relationships of Trans-Pacific transport of East Asian Sulfate, *Atmos. Chem. Phys.*, 8, 5537–5561, 2008.

Liu, J. and **D. L. Mauzerall**, Potential influence of inter-continental transport of sulfate aerosols on air quality, *Environmental Research Letters*, **2** 045029, doi:10.1088/1748-9326/2/4/045029, 2007.

Naik, V., **D. L. Mauzerall**, L. W. Horowitz, M. D. Schwarzkopf, V. Ramaswamy, M. Oppenheimer, "Sensitivity of Radiative Forcing from Biomass Burning Aerosols and Ozone to Emission Location," *Geophys. Res. Lett.*, VOL. 34, L03818, doi:10.1029/2006GL028149, 2007.

West, J.J., A.M. Fiore, V. Naik, L.W. Horowitz, M.D. Schwarzkopf, **D.L. Mauzerall**, Ozone Air Quality and Radiative Forcing Consequences of Changes in Ozone Precursor Emissions, *Geophys. Res. Lett.*, 34, L06806, doi:10.1029/2006GL029173, 2007.

Xu, S., Jaffe, P., **Mauzerall, D. L.**, "A Process-based Model for Methane Emission from Flooded Rice Paddy Systems," *Ecological Modeling,* vol. 205, pp. 475-491, 2007.

West, J.J., A. F. Fiore, L. W. Horowitz, **D. L. Mauzerall,** Global health benefits of mitigating ozone pollution with methane emission controls, *Proceedings of the National Academy of Science,* vol. 103, no. 11, March 14, 2006.

Wang, X. and **D. L. Mauzerall**, Evaluating Impacts of Air Pollution in China on Public Health: Implications for Future Air Pollution and Energy Policies, *Atmospheric Environment,* Volume 40, Issue 9, Pages 1706-1721, 2006.

Tong, D. Q. and **D.L. Mauzerall**, Spatial Variability of Summertime Tropospheric Ozone over the Continental United States: Implications of an evaluation of the CMAQ model, *Atmospheric Environment*, 40, 3041-3056, 2006.

Tong, D.Q., N.Z. Muller, **D.L. Mauzerall**, R.O. Mendelsohn, "Integrated Assessment of the Spatial Variability of Ozone Impacts from Emissions of Nitrogen Oxides," *Environmental Science and Technology,* 40:5, 1395-1400, 2006.

Tong, D. Q. and **D.L. Mauzerall**, Technical Note: Numerical instability in the Community Multi-scale Air Quality model and its impacts on aerosol and ozone simulations, *Atmospheric Environment*, submitted November 2005.

Naik, V., **D. L. Mauzerall,** L. W. Horowitz, D. Schwarzkopf, V. Ramaswamy, and M. Oppenheimer, Net Radiative Forcing Due to Changes in Regional Emissions of Tropospheric Ozone Precursors, *J. Geophys. Res.*, Vol. 110, D24306, doi:10.1029/2005JD005908, December 2005.

Wang, X, **D. L Mauzerall,** Y. Hu, A. G. Russell, E. D. Larson, J-H. Woo, D. G. Streets, A. Guenther, A High-Resolution Emission Inventory for Eastern China in 2000 and Three Scenarios for 2020, *Atmospheric Environment,* Volume 39: No. 32, 5917-5933, October 2005.

Mauzerall, D. L., B. Sultan, N. Kim, D. F. Bradford, NO_x Emissions: Variability in Ozone Production, Resulting Health Damages and Economic Costs, *Atmospheric Environment*, Volume 39: No. 16, 2851-2866, May 2005.

Liu, J. and **D. L. Mauzerall,** Estimating the Average Time for Inter-continental Transport of Air Pollutants, *Geophysical Research Letters,* vol 32, doi:10.1029/2005GL022619, 2005.

Liu, J., **D. L. Mauzerall,** L.W. Horowitz, Analysis of Seasonal and Inter-annual Variability in Trans-Pacific Transport, *Journal of Geophysical Research*, 110, D04302, doi: 0.1 029/2004JD005207, 2005.

National Research Council/National Academies of Science, "Air Quality Management in the United States," (with Chameides, W. L, Greenbaum, D., et al.) National Academy Press, 2004.

Wang, X. and **D.L. Mauzerall**, Characterizing distributions of surface ozone and its impact on grain production in China, Japan and south Korea: 1990 and 2020, *Atmospheric Environment*, Vol. 38, pp. 4383-4402, 2004.

Hale, T. and **D. L. Mauzerall**, Thinking Globally and Acting Locally: Can the Johannesburg Partnerships Coordinate Action on Sustainable Development?, *Journal of Environment and Development*, September 2004.

Horowitz, L.W., Walters, S., **Mauzerall, D.L.**, Emmons, L.K., Rasch, P.J., Granier, C., Tie, X., Lamarque, J.F., Schultz, M.G., Tyndall, G.S., Orlando, J.J., Brasseur, G.P., A global simulation of tropospheric ozone and related tracers: Description and evaluation of MOZART, version 2, *Journal of Geophysical Research*, 108 (D24), 4784, doi:10.1029/2002JD002853, 2003.

Mauzerall, D.L. and Wang, X., Protecting Agricultural Crops from the Effects of Tropospheric Ozone Exposure: Reconciling Science and Standard Setting in the United States, Europe and Asia, *Annual Review of Energy and Environment*, 2001.

Contributing author to Climate Change: The Scientific Basis -- Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change, Chapter 4, Atmospheric Chemistry, Cambridge University Press, 2001.

Contributing author to Climate Change: Impacts, Adaptation, and Vulnerability -- Contribution of Working Group III to the Third Assessment Report of the Intergovernmental Panel on Climate Change, Chapter 9, Sector Costs and Co-benefits of Mitigation, Cambridge University Press, 2001.

Mauzerall, D.L., D. Narita, H. Akimoto, L. Horowitz, S. Walters, D. Hauglustaine, G. Brasseur, Seasonal characteristics of tropospheric ozone production and mixing ratios over East Asia: A global three-dimensional chemical transport model analysis, *Journal of Geophysical Research*, 105, 17,895-17,910, 2000.

Mauzerall, D.L., J.A. Logan, D.J. Jacob, B.E. Anderson, A.S. Bachmeier, G.W. Sachse, D.R. Blake, J.D. Bradshaw, H. Fuelberg, B.G. Heikes. Photochemistry in Biomass Burning Plumes and Implications for Tropospheric Ozone over the Tropical South Atlantic, *Journal of Geophysical Research*, 103, 8401-8423, 1998.

Mauzerall, D.L., D.J. Jacob, S.-M. Fan, J.D. Bradshaw, G.L.Gregory, G.W. Sachse, D.R. Blake. Origin of Tropospheric Ozone at Remote High Northern Latitudes in Summer, *Journal of Geophysical Research*, 101, 4175-4188, 1996.

Jacob, D.J., B.G. Heikes, S.-M. Fan, J.A. Logan, **D.L. Mauzerall**, J.D. Bradshaw, H.B. Singh, G.L. Gregory, R.W. Talbot, D.R. Blake, G.W. Sachse. Origin of Ozone and NOx in the Tropical Troposphere: a Photochemical Analysis of Aircraft Observations over the South Atlantic Basin, *Journal of Geophysical Research*, 101, 24235-24250, 1996.

Fan, S.-M., D.J. Jacob, **D.L. Mauzerall**, J.D. Bradshaw, S.T. Sandholm, D.R. Blake, H.B. Singh, R.W. Talbot, G.L. Gregory, G.W. Sachse. Origin of Tropospheric NOx over Subarctic Eastern Canada in Summer, *Journal of Geophysical Research*, 99, 16867-16877, 1994.

Mauzerall, D.L. Protecting the Ozone Layer: Phasing out Halon by 2000. *Fire Journal*. Sept./Oct. 1990.

INVITED LECTURES AND CONFERENCE PRESENTATIONS

Ozone Impacts on Crop Yields: Regional and Global Assessments and Mitigation Potential, (with R van Dingenen, S Avnery, LW Horowitz, AM Fiore, J Liu and F Dentener, Hemispheric Transboundary Air Pollution meeting, Beijing, China, May 21, 2014.

Ozone Impacts on Crop Yields: Regional and Global Assessments and Mitigation Potential, (with R van Dingenen, S Avnery, LW Horowitz, AM Fiore, J Liu and F Dentener, International Conference on Ozone and Plants, Beijing, China, May 17, 2014.

Population Growth, Climate Change and the Future of the Planet, Energy Policy Institute, University of Chicago, April 8, 2014

Climate Change: A Planet in Peril, Nassau Club, Princeton, NJ, April 2, 2014

Air Pollution in China - Impacts on Climate, Health and Food Security, Princeton University, March 14, 2014

China and the Environment, Office of the Chief Economist, U.S. Department of State, Washington D.C., November 8, 2013

Air Pollution Mitigation in China, Potential Implications for Climate Change, China FAQs webinar, World Resources Institute, November 1, 2013

Impacts of Surface Ozone Pollution on Global Agriculture: Present, Future Projections, and Strategies to Reduce Damages, AgMIP Global Workshop, Columbia University, October 28, 2013

World Resources Institute, press conference on China's air quality, July 2, 2013.

Mauzerall, DL, Zhu, T., Keohane, R., moderator: T. Christiansen. Panel Discussion, Interconnections between air pollution and climate change in China. PIIRS and Princeton-Harvard China and the World program, Princeton University, February 27, 2013

Air Pollution in the Future City, Princeton-Fung Global Forum, Shanghai China, February 1, 2013.

A post-Kyoto partner: Considering the stratospheric ozone regime as a tool to manage nitrous oxide, Peking University, Beijing, China, January 28, 2013

A post-Kyoto partner: Considering the stratospheric ozone regime as a tool to manage nitrous oxide, New Zealand Climate Change Research Institute, University of Victoria, Wellington, New Zealand, December 17, 2012.

Hydraulic Fracturing – Potential Implications for Climate Change and America's Energy Future, Moderator. Synergize 2012, Andlinger Center Corporate Affiliates Program, November 12, 2012.

Climate Change and Interconnections with Air Pollution, Research Experiences for Undergraduates program, Engineering School, Princeton University, June 27, 2012.

A Planet in Peril: Climate Change and its Consequences for Global Society, Junior Summer Institute, Woodrow Wilson School, July 11, 2012.

Methane Mitigation: Benefits for air quality, health, crop yields and climate. Air Pollution and Climate Symposium: Creating a science-policy dialogue in Asia, Taipei, Taiwan, November 7, 2011.

Complements to Carbon: Opportunities for near-term action on non-CO2 climate forcers, Woods Hole Research Center, Woods Hole, MA, August 4, 2011.

Long-range Transport of Air Pollution, Health Effects Institute Annual Meeting, Boston, MA. May 3, 2011.

Making Energy Choices that have Co-Benefits for Air Quality, Health and Climate, Rutgers Energy Institute, New Brunswick, NJ, October 8, 2010.

Assessing the Climatic Benefits of Black Carbon Mitigation, The Energy and Resources Insititute (TERI), Delhi, India, July 14, 2010.

Assessing the Climatic Benefits of Black Carbon Mitigation, Asia Oceania Geosciences Society, Hyderabad, India, July 9, 2010.

Assessing Climate Benefits of Carbonaceous Aerosol Emission Reductions**.** Addressing black carbon and ozone as short-lived climate forcers. EPA workshop, Chapel Hill, NC March 3-4, 2010.

Energy Choices and Air Pollution: Present and potential future impacts of aerosol emissions from China on global air quality, premature mortality and radiative forcing, Harvard China Project, Harvard University, January 21, 2010.

Interconnections between air pollution, radiative forcing, and adverse impacts on health and agriculture: an examination of black carbon, sulfate aerosols and ozone. Atmospheric Chemistry seminar series, Harvard University, January 22, 2010.

Regional Cooperation on Energy and the Environment panel, Five University Collaboration on East Asian Security Cooperation and Regional Governance, Princeton University, December 11, 2009.

Interconnections between air pollution, radiative forcing, and adverse impacts on health and agriculture: an examination of black carbon, sulfate aerosols and ozone. Goddard Institute of Space Studies and Columbia University, December 4, 2009.

A Planet in Danger: Climate Change and Its Consequences for Global Society. Junior Statesmen of America, New Jersey, November 21, 2009.

Interconnections between Air Pollution and Climate Change: Co-benefits of mitigation for health, agriculture and climate. Mathey College, Princeton University, October 14, 2009.

Estimating the Health Impacts of Intercontinental Transport of Aerosols and their Effect on Radiative Forcing, Institute for Environment and Sustainability, Joint Research Center, European Commission, Ispra, Italy, June 2009.

Interconnections Between Air Pollution, Climate Change and Health: Promoting Sino - U.S. Cooperation, Woodrow Wilson International Center, Washington D.C. May 2009.

Interconnections Between Air Pollution, Climate Change and Health: Promoting Co-Benefits, Congressional briefing, B-338 Rayburn House Offices, Washington D.C., May 2009.

Present and potential future adverse impacts of surface ozone on food production in Asia, Better Air Quality 2008 conference, Bangkok, Thailand, November 2008.

Estimating the Health Impacts of Intercontinental Transport of Aerosols, National Research Council / National Academy of Science panel on The Significance of International Transport of Air Pollutants, Harvard University, Cambridge, MA, October 20, 2008.

Present and potential future contributions of sulfate, black and organic carbon aerosols from China to global air quality, premature mortality and radiative forcing, Meeting on Technologies and policies to mitigate climate change: Chinese challenges in addressing climate change, Tsinghua University, Beijing, China. October 2008.

Summertime State-Level Source-Receptor Relationships between Nitrogen Oxides Emissions and Surface Ozone Concentrations over the Continental United States, Ozone Transport Commission, Annual Meeting, New Jersey, June 2008.

Health and Agricultural Impacts of Air Pollution, Hemispheric Transport of Air Pollution Workshop, Washington D.C., June 2008.

Interconnections between Air Pollution and Climate Change: Opportunities for Co-Benefits, International Geosphere Biosphere Program (IGBP), Cape Town, South Africa, May 2008.

Global Change and Air Quality, NARSTO Executive Assembly, Mexico City, Mexico, April 2008

Interconnections between Air Pollution, Climate Change, Health and Agriculture: Opportunities for Co-Benefits, Frontier Research Center for Global Change, Yokohama, Japan, March 2008.

Interconnections between Air Pollution, Climate Change and Health: Opportunities for Co-Benefits, National Academy of Engineering, Princeton University, February, 2008. Available at:

http://uc.princeton.edu/main/images/stories/podcast/vodcast/20080304EnergyClimatePU2.mp4

Air Quality and Climate Change: Opportunities for "Co-benefits" for Health, National Academies, Institute of Medicine, San Francisco, September 2007.

Air Quality and Climate Change: Opportunities for "Co-benefits", Gordon Research Conference, Atmospheric Chemistry, Big Sky, MT., August 2007.

Potential Contributions of Emerging Mid-Infrared Detection Technologies to Air Quality Modeling and Policy, Center for Mid-Infrared Technologies for Health and the Environment (MIRTHE), Princeton University, August 2007.

Air Quality and Climate Change: Options for "Co-benefits", World Bank, Washington D.C., (May 2007)

Surface Ozone Distributions and Their Impact on Grain Production in China, Japan and South Korea: 1990 and 2020, University of Tokyo, Tokyo, Japan. (March 2007)

Surface Ozone and its Impact on Grain Yields, Institute of Soil Science, Chinese Academy of Sciences, Nanjing, China (March 2007)

It's Not Just about Climate Change: How Reducing Methane Emissions Can Improve Air Quality and Global Public Health, Congressional briefing, Rayburn building, Washington D.C. (May 2006)

Health Implications of Regional and Long-Range Transport of Air Pollutants, Health Effects Institute annual meeting, San Francisco, CA (April 2006)

Evaluating the Impact of Air Pollution on Agriculture and Human Health in China, Project Asian Brown Cloud (ABC): The First Workshop on the Impact Assessment Program, Bangkok, Thailand (December 2005)

Local and regional air pollution and its impacts on human health and crops – and its linkages to GHG abatement, Mitigation of air pollution and climate change in China: A policy workshop on co-benefits and co-control, Beijing, China (November 2005)

Air Pollution: Science, Impacts and Policy, Department of Atmospheric and Oceanic Science, University of Maryland, College Park, MD (October 2005)

Air Pollution: Science, Impacts and Policy, Bradford Seminars in Science, Technology and Environmental Policy, Princeton University, Princeton, NJ (September 2005)

Evaluating Impacts of Air Pollution in China on Public Health: Implications for Future Air Pollution and Energy Policies, International Association of Meteorology and Atmospheric Sciences, Beijing, China (August 2005)

Assessing Global Radiative Forcing due to Regional Emissions of Tropospheric Ozone Precursors: A Step Towards Climate Credit for Ozone Precursor Emissions, International Association of Meteorology and Atmospheric Sciences, Beijing, China (August 2005c)

Air Pollution and International Climate Change Policy – To Credit or Not to Credit? Joint Assembly conference, New Orleans, LA. (May 2005)

Regional Attribution of Ozone Production and Associated Radiative Forcing: A Step towards climate credit for reductions in emissions of ozone precursors, Joint Assembly conference, New Orleans, LA. (May 2005c)

*An Integrated Assessment of the Impacts of Air Pollution on Health in Eastern China: A valuation with implications for future air pollution and energy policies***,** Air Pollution as a Climate Forcing workshop, East-West Center, Honolulu, Hawaii. (April 2005)

*An Integrated Assessment of the Impacts of Air Pollution on Health in Eastern China: Implications for future air pollution and energy policies***,** Asian Brown Cloud science team meeting, Shanghai, China (declined due to prior commitment) (April 2005)

*Charging NO_x Emitters for Health Damages: An Exploratory Analysis***,** National Bureau of Economic Research, Environmental Economics working group, Cambridge, MA. (April 2005)

NO_x Emissions: Variability in Ozone Production, Resulting Health Damages and Economic Costs, American Geophysical Union Fall Meeting, San Francisco, CA. (December 2004)

Regional Attribution of Ozone Production and Associated Radiative Forcing: A Step Towards Climate Credits for Ozone Reductions, Intercontinental and Climatic Effects of Air Pollutants Workshop, Chapel Hill, NC. (October 2004)

Air Pollution in Asia: From local impacts on agriculture and health to inter-annual variability in trans-Pacific transport, Atmospheric Chemistry Division, National Center for Atmospheric Research, Boulder, CO. (June 2004)

Air Pollution Impacts: From Effects on Agriculture and Health in China to a New Proposal for U.S. NO_x Emission Control, Environmental and Societal Impacts Group, National Center for Atmospheric Research, Boulder, CO. (June 2004)

U.S. Air Quality: A New Proposal for Domestic NO_x Emission Control and an Examination of Inter-Annual Variability in Trans-Pacific Transport, National Oceanic and Atmospheric Administration Aeronomy Lab, Boulder CO. (June 2004)

Analysis of Seasonal and Inter-Annual Variability in Trans-Pacific Transport, Vertical and long-range transport of trace gases and aerosols session, European Geosciences Union 1st General Assembly, Nice, France. (April 2004)

The Cost of Dirty Air: Using Atmospheric Models to Quantify the Impact of Air Pollution on Agriculture and Human Health in China, Harvard University Center for Environment: China project, Harvard University, Cambridge, MA. (April 2004)

From regional to global: Using science to develop sound air quality policy, Princeton Environmental Institute Associated Faculty Forum, Princeton, NJ. (April 2004)

Linking Air Pollution to Health and Agricultural Damages: U.S. and China, Sustainability Seminar Series, New Jersey Department of Environmental Protection, Trenton, NJ (April 2004)

Nitrogen Oxide Emissions from Power Plants – How Damage Varies in Space and Time: Should Emission Charges Vary with Damage?, Woodrow Wilson School Washington Seminar Series, Washington D.C. (March 2004)

Air Pollution in Asia: Assessing Impacts on Agricultural and Forest Productivity, Bangkok, Thailand. (declined due to prior commitment) (November 2003)

MOZART-2 Applications, GEOS-CHEM meeting, Harvard University, Cambridge, MA (June 2003)

Factors Regulating the Seasonal Cycle of Intercontinental Air Pollution Transport between Asia, the United States and Europe, Hemispheric Air Pollution conference, Bad Breisig, Germany. (October 2002)

Factors Regulating the Seasonal Cycle of Inter-Continental Pollution Transport, Telluride Atmospheric Chemistry workshop, Telluride, Colorado. (August 2002)

The Adverse Impact of Surface Ozone on Agricultural Crops, Air Pollution as a Climate Forcing workshop, Honolulu, Hawaii. (April 2002)

Transport of Ozone and Related Air Pollutants in the Boundary Layer over East Asia: A global modeling analysis, Center for Environmental Sciences, Beijing University, Beijing, China (October 2001)

Transport of Ozone and Related Air Pollutants in the Boundary Layer over East Asia: A global modeling analysis, Workshop on local and regional contribution to air pollution and local radiative balance in Asian developing countries, Guangzhou, China (September 2001)

Transport of Ozone and Related Air Pollutants in the Boundary Layer over East Asia: A global modeling analysis, Joint Sino-US workshop on China-MAP, Hong Kong (September 2001)

Intercontinental Transport of CO, NOx, and PAN from Fossil Fuel and Biomass Burning Emissions, Photooxidants, Particles, and Haze across the Arctic and North Atlantic: Transport Observations and Models Workshop, Columbia University Lamont-Doherty Earth Observatory, Palisades, New York. (June 2001)

Escalating Interconnections between Regional and Global Air Pollution: Science and International Policy, Energy and Resources Group Colloquium, University of California, Berkeley, CA. (April 2001)

Linkages Between Regional and Global Air Pollution: Reconciling Science and Policy, Princeton Environmental Institute Associated Faculty Seminar Series, Princeton University, Princeton, NJ. (April 2001)

Photochemical Budgets and Fluxes of O_3, CO, HNO_3 and PAN over East Asia, International Institute for Applied System Analysis, Laxemburg, Austria. (September 2000)

Comparison of Boundary Layer Regional Photochemical Budgets: East Asia, United States and Europe, Aspen Global Change Institute, Aspen, CO. (August 2000)

The *Interconnections between Local, Regional and Global Air Pollution*, Center for Energy and Environmental Studies, Princeton University, Princeton, NJ. (April 1999)

The Potential Impact of Asian Development on Global Air Quality, Woodrow Wilson School, Princeton University, Princeton, NJ. (March 1999)

Preliminary Analysis of Regional Tropospheric Ozone Budgets using MOZART-2, a global photochemical tracer model, International Symposium on Tropospheric Ozone in East Asia and its Potential Impacts on Vegetation, Tokyo, Japan, 1998. (December 1998)

Influence of Fossil Fuel Combustion and Biomass Burning on Tropospheric Ozone - Data Analysis and Modeling, Atmospheric Chemistry Division / National Center for Atmospheric Research, Boulder, CO. (March 1997)

Protecting Stratospheric Ozone: the EPA's Domestic and International Role, School of Engineering, University of Colorado, Boulder, CO. (February 1997)

Origin of Tropospheric Ozone at Remote Northern Latitudes in Summer, Atmospheric Chemistry Conference for Emerging Senior Scientists (ACCESS) (June 1995)

Panel member, Education, Training and Environmental Careers, Harvard University Committee on Environment, Cambridge, MA (December 1993)

Plenary talk, The Science of Stratospheric Ozone Depletion, International Conference on Halon Alternatives, Hongzhou, China (September 1990)

PUBLICATIONS (Book chapter, working papers and other Selected Unrefereed)

DL Mauzerall, Methane mitigation – Benefits for air quality, health, crop yields and climate, *IGAC Newsletter*, pp. 17-18, October 2011.

Jacob, DJ, **DL Mauzerall**, JM Fernandez, WT Pennell. Global Change and Air Quality, In: Technical challenges of multipollutant air quality management, Editor(s): Hidy GM; Brook JR; Demerjian KL; et al. Pages: 395-432 DOI: 10.1007/978-94-007-0304-9_11, Springer, 2011.

West**,** J. J., L. Emberson, E. Ainsworth, S. C. Anenberg, S. Arnold, M. Ashmore, R. Atkinson, N. Bellouin, A. Cohen, B. Collins, P. Delmelle, R. Doherty, N. Farah, J. Fuhrer, K. Hicks, T. Holloway, K. Kobayashi, J. Liu, **D.L. Mauzerall**, L. Mercado, G. Mills, M. Sanderson, D. Shindell, S. Sitch, D. Stevenson, J-P Tuovinen, R. van Dingenen, J. Wang, H. Yu, C. Zdanowicz (2010) Impacts on Health, Ecosystems, and Climate, Chapter 5 in *Hemispheric Transport of Air Pollution: Part A: Ozone and Particulate Matter*, F. Dentener, T. Keating and H. Akimoto (Eds.), Air Pollution Studies No. 17, Economic Commission for Europe, Geneva. (link: look under "Assessment Reports/HTAP 2010")

Mauzerall, DL, Sultan, B., Kim, N., Bradford, D.F., "*Charging NO_x Emitters for Health Damages: An Exploratory Analysis"*, Center for Economic Studies ifo Working Paper 1442, Munich, Germany, April 2005.

Mauzerall, DL, Sultan, B., Kim, N., Bradford, D.F., "*Charging NO_x Emitters for Health Damages: An Exploratory Analysis"*, NBER working paper series, Working paper #10824, http://www.nber.org/papers/w10824, Cambridge, MA, 2004.

Mauzerall, D.L., Sultan, B., Kim, N., Bradford, D.F., "NO_x Emissions from Large Point Sources: Variability in Ozone Production, Resulting Health Damages and Economic Costs", *Eos Trans. AGU* 85(47), Fall Meeting Suppl., Abstract A22A-04-INVITED, 2004.

Wang, X., **Mauzerall, D.L**., "Impacts of Air Pollution on Health in Eastern China: Implications for Future Air Pollution and Energy Policies, *Eos Trans. AGU* 85(47), Fall Meeting Suppl., Abstract A31D-03, 2004.

Tong, D.Q., **Mauzerall, D.L**., "Quantifying Source-Receptor Relationships between NO_x Emissions and O_3 Concentrations in Downwind States in the Continental U.S.", *Eos Trans. AGU* 85(47), Fall Meeting Suppl., Abstract A23A-0775, 2004.

Naik, V. **Mauzerall, D.L**., Horowitz, L., Schwarzkopf, D. Ramaswamy, V., Oppenheimer, M., "Regional Attribution of Ozone Production and Associated Radiative Forcing: A Step to Crediting NO_x Emission Reductions", *Eos Trans. AGU* 85(47), Fall Meeting Suppl., Abstract A23A-0762, 2004.

Mauzerall, D.L., Tong, Q. "A Preliminary Estimate of the total Impact of Ozone and PM2.5 Air Pollution on Premature Mortalities in the United States", 27th NATO/CCMS International Technical Meeting on Air Pollution Modeling and its Application, Conference papers, October 2004.

Tong, Q., **Mauzerall, D.L**., Mendelsohn, R., "Modeling Source-Receptor Relationships and Health Impacts of Air Pollution in the United States", 27th NATO/CCMS International Technical Meeting on Air Pollution Modeling and its Application, Conference papers, October 2004.

Mauzerall, D.L., Sultan, B., Kim, N., Bradford, D.F. "Charging NO*x* Emitters for Health Damages: An Exploratory Analysis", National Bureau of Economic Research, Inc., Working Paper 10824, October 2004.

Mauzerall, D.L., Babar Sultan, Namsoug Kim, and David F. Bradford, "Charging NOx Emitters for Health Damages: An Exploratory Analysis", Princeton Center for Economic Policy Studies, CEPS Working Paper No. 103, September 2004

Mauzerall, D.L., Liu, J., Analysis of Seasonal and Inter-annual Variability in Trans-Pacific Transport, *Geophysical Research Abstracts*, Vol. 6, 04552, 2004 SRef-ID: 1607-7962/gra/EGU04-A-04552, 2004

Mauzerall, D.L., B. Sultan, N. Kim, D. Bradford, An Alternative to NOx Cap-and-Trade Programs: An Exploratory Analysis of Charging NOx Emitters for Health Damages. *Eos Trans. AGU, 84*(46), Fall Meet. Suppl., Abstract U31D-03, 2003.

Wang, X., **D. L. Mauzerall**, Y. Hu, A.G. Russell, J. Woo, D.G. Streets. Evaluating the Impact of Air Pollution on Human Health in China: the Price of Clean Air. *Eos Trans. AGU, 84*(46), Fall Meet. Suppl., Abstract U31D-03, 2003.

Mauzerall, D.L., X. Wang, Q. Tong, D. Bradford, R. Mendelsohn. Integrated Assessments: Using Regional Models to Evaluate Health Impacts of Air Pollution in the United States and China, One Atmosphere, One Community, One Modeling System: Models-3 Users' Workshop, October 27-29, 2003, Research Triangle Park, North Carolina, 2003.

Kobayashi, K., **D.L. Mauzerall**, X. Wang. Possible impact of increasing atmospheric ozone on rice production in China, Japan-China Atmospheric Environmental Science Symposium, Shanghai, China, December 2002.

Mauzerall, D.L., The Use of Atmospheric Science to Determine Optimal Air Quality Management Regions, *Eos. Trans. AGU 83(19)*, Spring Meet. Suppl., Abstract A42C-04 Invited, 2002.

Mauzerall, D.L., L. Horowitz, G. Brasseur, Preliminary analysis of regional tropospheric ozone budgets using MOZART-2, a global photochemical tracer model, Proceedings of the International Symposium on Tropospheric Ozone in East Asia and its Potential Impacts on Vegetation, Tokyo, Japan, 1998.

Mauzerall, D.L., D. Hauglustaine, G. Brasseur, Production and Export of Tropospheric Ozone from Asia - Global Modeling and Analysis of PEM-West B Data, International Symposium on Atmospheric Chemistry and the Future Global Environment, Extended abstracts, Nagoya, Japan, 1997.

Mauzerall, D.L., J.A. Logan, D.J. Jacob, B.E. Anderson, A.S. Bachmeier, G.W. Sachse, D.R. Blake, J.D. Bradshaw, H. Fuelberg, B.G. Heikes. Relationships between Biomass Burning Emissions and Photochemical Tracers over Source Regions and the Tropical South Atlantic - Analysis of TRACE-A Expedition Measurements, September-October 1992. Chapman Conference on Biomass Burning and Global Change, March 1995.

Andersen, S.O., **Mauzerall, D.L**. The Future of CFCs in Electronic Cleaning - A Regulatory Update. Proceedings of the Technical Program of the National Electronic Packaging and Production Conference, NEPCON West. 1990.

Mauzerall, D.L. Aqueous Cleaning - An Economic Alternative to the Use of Chlorinated and Chlorofluorocarbon (CFC) Solvent in the Electronic and Metal Cleaning Industries. Proceedings of the Hazardous Materials Management Conference / West. 1987.

Charles D. McConnell

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PROFESSIONAL EXPERIENCE

William Marsh Rice University **2013 – Current**

Executive Director, Energy and Environment Initiative (EEi)

EEi is a program that leverages the multi-discipline expertise at Rice to promote collaborative research in the areas of energy and environment science, engineering, economics, policy, and humanities.

U.S. Department of Energy **2011 – 2013**

Assistant Secretary, Fossil Energy

Politically appointed and Senate confirmed to lead policy, strategy, external relationships within the U.S. government and private stakeholders, as well as the functional operation of the Fossil Energy Department.

Four Departments —Yearly Budget $750MM / 3,500 Employees

Coal • EPRI, Coal Utilization Research Council, Nat. Grid Reliability • $3.2B Clean Coal project portfolio for Carbon Capture, Utilization & Storage with a $14B industry cost share. Corresponding R&D 10-year roadmap for applications planning and budgeting. **Oil & Gas** • Domestic & International Oil and EOR • Interagency MOU with DOI, EPA and DOE for unconventional oil exploration and natural gas fracking	**Strategic Petroleum Reserve** • 5 locations and 1,500 employees • IEA & EIA coordination * 720MMBBL capacity for strategic crude oil supply **National Energy Technology Laboratories** * Process and materials science R&D and project management supporting DOE programs

Battelle, Inc., *Columbus, Ohio* **2009 – 2011**

VP Energy Technology, Carbon Management

Recruited into a newly created senior leadership position by the CEO to develop & build a carbon dioxide capture and storage business. A new business model and strategic plan developed to provide a long term, over-the-fence, service company to meet the anticipated demands of the electric power and manufacturers industries for CO2 in a carbon constrained marketplace.

- Sales Growth — $5MM - $35MM/yr
- Staff Growth — 10 – 45 Professionals
  Geologic Analysis & Resource Assessment, Project Management, R&D, Systems Engineering, Business Development & Analysis, Strategic Market Analysis and Planning

Responsibilities

Full P&L and Strategic Planning — R&D and Applications Planning
National Lab Strategic Leadership — Sales, MARCOM, and Public Affairs
*President of the Mid-West Regional Carbon Sequestration Partnership – 45 stakeholders from industry and NGO's

Praxair, Inc. (1977 – 2009)

Corporate VP, Corporate Energy & Business Development (Domestic & International) **2002 – 2009**

Global Hydrogen & Energy Business Development

- Sales Growth — $500-$850MM/yr
- Expanded global footprint with $1.1B new contracts – 6 new countries in Asia, South America and Europe
- Joint venture creation in China and Mexico for integrated gases and energy supply to grassroots industrial parks

PROFESSIONAL EXPERIENCE *Continued*

Oilfield Services
- Capital Investments of $150 MM targeted to grow existing $100MM/yr sales base
- Sales revenue from new contracts + $120MM/yr
- Upstream domestic & international EOR - PEMEX, Petrobras, SINOPEC, Exxon

Global R&D Technology Applications Planning
- $70MM/yr portfolio
- H2, CO, and CO2 gases and energy technologies
- DOE, domestic & international cooperative demonstrations

Praxair Sustainability & Productivity Leadership
- Investor Relations (Energy)
- Dow Jones Sustainability Index – Corporate
- Productivity & Lean Six Sigma for North America Business Unit
- National Manufacturing Association & Industrial Gases Association

VP/GM H2/CO North America Business, Sales and Operations **1999 – 2002**
- Secured long-term contracts to connect supply pipelines to 86% of Gulf Coast refinery capacity
- Expanded pipeline capacity and range by 250 miles and expanded the number of U.S. sites from 11 to 21.
- Sales increase from $150 to $400MM/yr – customer base of 85 chemicals and refining clients
- Secured corporation commitment to expand H2/CO business globally to 6 countries

Managing Director, Asia Business Development (*Singapore Asia Headquarters)* **1995 – 1999**
- New country entries into China, India, Indonesia, Malaysia
- Hiring and on-boarding of 400+ local new hires
- Drove region sales from $80 to $235MM/yr. Long-term supply contracts secured to grow $1B region business by 2009
- Strategic relationships with global customers
- International Business Development (licenses, permits, financial structure, etc.)

Business Director, Praxair & Texaco (Joint Venture), *continued to serve as chair of BOD* **1992 – 1995**
A start-up JV was created to provide H2 & CO to the chemical and refining industry. Texaco gasification & Praxair long-term operations and supply model for gas sales. Texas City, TX is the site of the $100MM gas and cogeneration JV that also provides power and steam.

Regional Sales Manager, *Houston, Texas and Southwest region Gulf Coast* **1988 – 1992**
Operations Management, *East & Mid-west U.S.* **1977 – 1987**

EDUCATION
BS Chemical Engineering, Carnegie Mellon University 1977
MBA Finance, Cleveland State University 1984

PROFESSIONAL ASSOCIATIONS
Gasification Technologies Council – Chair (Former)
Gulf Coast Carbon Center – Board Director (Former)
T&P Syngas Company – Board Director (Former)
Clean Carbon Foundation of Texas – Board Director (Former)
Pittsburgh Coal Council – Board Member
American Institute of Chemical Engineers – Member
Energy & Environmental Research Center – Board Member

PROFESSIONAL COMPETENCIES
Business P&L
Strategic Planning & Execution
Risk Management
Productivity & Lean Six Sigma
Govt. Affairs
Sustainability
International
Joint Ventures

William Thomas (Tom) McDonald

[redacted]

[redacted] Cell

Objective

Utilize my experience, leadership, communication skills and enthusiasm as a member of a progressive agribusiness team.

Profile

- 28 years of professional experience in agricultural environmental management.
- Oversee family's ranching enterprise in eastern New Mexico.
- Ability to evaluate complex situations and find simple, logical solutions.
- Strong leadership capabilities, both within JBS Five Rivers and the industry.
- Ability to lead national workgroups and taskforces to a unified position around complex issues.
- Innovative thinker with the ability to challenge the status quo.

Education

M.S., Beef Cattle Production and Management, The University of Tennessee
B.S., Animal Science, West Texas A&M University

Relevant Experience & Accomplishments

- Develop environmental and sustainability strategy.
- Responsible for environmental compliance, monitoring and training.
- Direct capital expenditures for environmental system improvements.
- Direct environmental research and development.
- Responsible for environmental due diligence for acquisitions and divestitures.
- Installed a dissolved air floatation machine to remove phosphorus from feedyard wastewater.
- Developed pollution prevention plan for concentrated animal feeding operations.
- Championed the construction of a pilot sized feedlot manure gasifier.
- Provided input for environmental regulations and permits to EPA Region 6, Texas Commission on Environmental Quality, Oklahoma Department of Agriculture, Colorado Department of Public Health and Environment and Arizona Department of Environmental Quality.
- Served on the national review panel for USDA Agricultural Research Service's National Program Assessment.
- Served on Texas Governor Rick Perry' Blue Ribbon Committee for the 2010 Texas Environmental Excellence Awards.
- Honored as West Texas A&M Graduate of Distinction in 2015

Employment

JBS Five Rivers Cattle Feeding LLC (formerly Five Rivers Ranch Cattle Feeding LLC, ContiBeef LLC and Continental Grain Company Cattle Feeding Division)

- Vice President of Environmental Affairs *2006-present*

- Director of Environmental Affairs *2003-2006*
- Manager of Environmental Affairs *1997-2003*
- Manager of Human Resources and Environmental Affairs *1995-1997*
- Manager of Human Resources *1995*

Texas Cattle Feeders Association

- Environmental Manager *1993-1995*
- Market Network Manager/Secretary of Research Committee *1989-1993*

Industry Involvement

National Cattlemen's Beef Association, Executive Committee, Board Of Directors, Vice Chairman of the Property Rights and Environmental Management Committee, Chairman of the CAFO Working Group and Member of the Key Technologies Working Group

U.S. Environmental Protection Agency, charter member of the Farm, Ranch and Rural Communities Federal Advisory Committee

Texas Cattle Feeders Association, Past Chairman of the Board of Directors and Legislative / Regulatory Committee

Invited to speak at the Global Conference for Sustainable Beef Production in 2014 at Sao Paulo, Brazil and in 2016 at Banff, Alberta, Canada

U.S. Roundtable for Sustainable Beef, Board of Directors

Represented Texas Beef Industry on an international beef promotion campaign in Japan, Hong Kong and China

Colorado Agricultural Air Quality Technical Workgroup, Member

American Society of Agronomy, Certified Crop Advisor

Texas Cooperative Research, Education and Extension Triangle, Advisory Council

Executive Education

Harvard Business School Executive Education – Corporate Social Responsibility

Darden Executive Education – Leadership for Extraordinary Performance

Center for Continuous Quality Improvement – System Improvement Methods

DR. MARC W. MELAINA

Senior Engineer, Team Lead for Infrastructure Systems Analysis
Transportation and Hydrogen Systems Center, National Renewable Energy Laboratory (NREL)
Golden, Colorado • (303) 275-3836 • Marc.Melaina@nrel.gov • *Updated July 14, 2017*

GOOGLE SCHOLAR PROFILE

Google Scholar Citation Indices: *Total Citations: 899; h-index: 14; i10-index: 15*
Publications available at: *https://scholar.google.com/citations?user=0gYcG64AAAAJ&hl=en*

EDUCATION

University of Michigan, Ann Arbor, Michigan, 1997-2005
Ph.D. in Natural Resources and Environment, December 2005
Program Track: Resource Policy and Behavior
Dissertation: Initiating hydrogen infrastructures: analysis of technology dynamics during the introduction of hydrogen fuel for passenger vehicles
Committee: T. Gladwin, G. Keoleian, M. Ross, R. Bierbaum, J. Bulkley
M.S.E. Civil and Environmental Engineering, April 2002

University of Utah, Salt Lake City, Utah, 1990-1996
B.A. Physics, April 1996

WORK EXPERIENCE

Senior Engineer and Team Lead, 2007 to present. Transportation and Hydrogen Systems Center, National Renewable Energy Laboratory. Infrastructure Systems Analysis Team includes 6-10 analysts focusing on techno-economics, finance, markets, policy, and future scenarios for zero-emission vehicles. Main clients include the U.S. Department of Energy (DOE) and the California Energy Commission (CEC). Team lead for 8-12 projects annually, supported through $12.5 million in U.S. DOE funds and and $6.7 million in CEC funds.

Consultant, National Research Council, Summer 2011 to Fall 2012. *The Potential for Light Duty Vehicle Technologies, 2010-2050. Cost, Impacts, Barriers and Timing*. Committee on Transitions to Alternative Vehicles and Fuels. Contributed to scenarios for 2013 committee report on achieving an 80% reduction in light-duty vehicle GHGs by 2050.

Consultant, National Research Council, Fall 2007. Board on Energy and Environmental Systems. Hydrogen transportation scenario modeling to support the 2008 NRC report: *Transitions to Alternative Transportation Technologies – A Focus on Hydrogen*.

Project Scientist, Institute of Transportation Studies, U.C. Davis, 2005 to 2007. Collaboration with an interdisciplinary team of researchers directed by Drs. Daniel Sperling and Joan Ogden. Research Track Director for policy and business strategy track. Research Director for first year of the Sustainable Transportation Energy Pathways (STEPS) project.

Consultant, Argonne National Laboratory, U.S. Department of Energy, 2003 to 2006. Researched renewable energy systems with Dr. Don Hanson and John "Skip" Laitner, with a

focus on wind and hydrogen technology techno-economics.

Consultant, Defense Logistics Agency, Department of Defense, March 2005 to July 2005. Conducted technology characterization and facility location analysis for hydrogen infrastructure systems. Contract through San Diego State University's Research Foundation.

Consultant, Industrial Economics, Incorporated (IEc), Cambridge, MA, May 2003. Addressed recycling issues for fuel cell and hydrogen technologies.

Assistant to the Energy Coordinator, City of Ann Arbor Energy Office, 1999 to 2003. Maintained city energy records, conducted technical analysis for the Climate Change Action Plan, wrote grants and developed outreach materials the Ann Arbor Clean Cities Coalition.

TEACHING EXPERIENCE

Principle Instructor, Transportation Energy Analysis and Modeling, UC Davis, Spring 2007. Designed graduate course and co-taught with Dr. Mark Delucchi.

Graduate Student Instructor, Energy and the Environment, Residential College, University of Michigan, 1999-2003. Designed course and was primary instructor for five semesters.

RESEARCH EXPERIENCE

Doctoral Research, Natural Resources and Environment, University of Michigan, 2000-2005. Combined engineering, economic, policy and historical analyses to articulate a scenario for rapid hydrogen infrastructure development.

Student Internship, Oakridge National Laboratory, U.S. Department of Energy, National Transportation Research Center, Summer 2004. Research to support hydrogen infrastructure modeling with David Greene and Paul Leiby.

Research Assistant, Center for Sustainable Systems, University of Michigan, 1999-2003. Curriculum development for a graduate course in hydrogen energy (Winter 2003). Hydrogen infrastructure and life cycle modeling (Winter 1999 and Winter 2002).

JOURNAL ARTICLES

M. Bazilian, A.R. Brandt, L. Billman, G. Heath, J. Logan, M. Mann, **M.W. Melaina**, P. Statwick, D. Arent, S.M. Benson, 2014. Ensuring benefits from North American shale gas development: Towards a research agenda, Journal of Unconventional Oil and Gas Resources, 7:71-74.

Becker, W.L., R.J. Braun, M. Penev, **M.W. Melaina**, 2012. Design and technoeconomic performance analysis of a 1 MW solid oxide fuel cell polygeneration system for combined production of heat, hydrogen, and power. *Journal of Power Sources* 2012: 34-44.

Melaina, M.W., K. Webster, 2011. Role of Fuel Carbon Intensity in Achieving 2050 Greenhouse Gas Reduction Goals within the Light-Duty Vehicle Sector. Environmental Science and Technology 45 (9): 3865-3871.

Collantes, G., **M.W. Melaina**, 2011. The co-evolution of alternative fuel infrastructure and vehicles: A study of the experience of Argentina with compressed natural gas. *Energy Policy* 39(2): 664-675.

Melaina, M.W., J. Bremson, 2008. Refueling availability for alternative fuel vehicle markets: Sufficient urban station coverage. *Energy Policy* 36(8): 3233-3241.

Melaina, M.W., 2007. Turn of the century refueling: A review of innovations in early gasoline refueling methods and analogies for hydrogen. *Energy Policy* 35(10): 4919-4934.

Zhao, J., **M.W. Melaina,** 2006. Transition to hydrogen-based transportation in China: Lessons learning from alternative fuel vehicle programs in the United States and China. *Energy Policy* 34(11): 1299-1309.

Melaina, M.W., 2003. Initiating hydrogen infrastructures: preliminary analysis of a sufficient number of initial hydrogen stations in the U.S. *International Journal of Hydrogen Energy* 28(7): 743-755.

Björklund, A., **M.W. Melaina,** G. Keoleian, 2001. Hydrogen as a transportation fuel produced from thermal gasification of municipal solid waste: an examination of two integrated technologies. *International Journal of Hydrogen Energy* 26(11): 1209-1221.

Melaina, M.W. (Jensen), M.H. Ross, 2000. The ultimate challenge: developing an infrastructure for fuel cell vehicles. *Environment* 42, 10-22.

CONFERENCE PROCEEDINGS

M.W. Melaina, M. Muratori, J. McLaren, P. Schwabe, 2017. Investing in Alternative Fuel Infrastructure: Insights for California from Stakeholder Interviews, Transportation Research Board 96th Annual Meeting, Transportation Research Board.

M.W. Melaina, J. Sperling, 2017. Toward a Sustainability Framework for Hydrogen: Results and Discussion from an Expert Roundtable, Transportation Research Board 96th Annual Meeting, Transportation Research Board.

M.W. Melaina, Y. Sun, B. Bush, 2014. Retail Infrastructure Costs Comparison for Hydrogen and Electricity for Light-Duty Vehicles, SAE 2014 World Congress and Exhibition, 7-11 April 2014, Detroit, Michigan. Preprint: NREL/CP-5400-60944, National Renewable Energy Laboratory, Golden, Colorado.

M.W. Melaina, B. Bush, Y. Sun, 2015. Alternative Transportation Fuel Investment Risks

Due to Technological and Petroleum Price Uncertainty, Conference Paper, The Dynamic Energy Landscape, 33rd USAEE/IAEE North American Conference, Oct 25-28, 2015.

M.W. Melaina, G. Saur, 2013. Cost Comparison of Wind Energy Delivered as Electricity or Hydrogen for Vehicles, Society of Automotive Engineering, SAE World Congress and Exhibition, Detroit, Michigan.

Melaina, M.W., Bremson, J., & Solo, K. (2012). Consumer convenience and the availability of retail stations as a market barrier for alternative fuel vehicles. Presented at the 31st USAEE/IAEE North American Conference, Austin, TX, November 4-7.

Webster, K., **M.W. Melaina**, A. Milbrandt, 2011. A Low-Carbon Fuel Standard in Texas, Transportation Research Board 90th Annual Meeting, Washington, DC, January 23-27, 2011.

Melaina, M.W., M. Penev, P. Devlin, 2010. Analysis of Hypothetical Geothermal Hydrogen Systems in Hawaii. Proceedings of the 5th International Renewable Energy Storage Conference (IRES 2010), 22-24 November 2010, Berlin, Germany.

Hitchcock, D., **M.W. Melaina,** 2009. Texas Hydrogen Roadmap, Annual Meeting of the National Hydrogen Association. March 30th – April 3rd, Columbia, South Carolina.

Bush, B., **M. W. Melaina,** O. Sozinova, D. Steward, 2009. Optimal regional layout of least-cost hydrogen infrastructure. Annual Meeting of the National Hydrogen Association. March 30th – April 3rd, Columbia, South Carolina (poster).

Melaina, M.W., J. Bremson, 2008. The cost of refueling availability to urban vehicle purchasers. Annual Meeting of the National Hydrogen Association. March 1st – April 4th, Sacramento, California (poster).

Melaina, M.W., J.M. Ogden, M. Miller, M. Nicholas, 2007. Simulating a Hydrogen Infrastructure Rollout in Los Angeles, California. 18th Annual Meeting of the National Hydrogen Association. March 19-22, 2007. San Antonio, Texas (presentation only).

Melaina, M.W., J. Bremson, 2006. Regularities in early hydrogen station size distributions. Energy in a World of Changing Costs and Technologies, 26th North American Conference, International Association of Energy Economics. Ann Arbor, Michigan, September 24-27.

Melaina, M.W., 2006. Initiating early hydrogen infrastructures. 6th National Conference on Science, Policy and the Environment. Washington, D.C., January 26-27, 2006 (poster).

Melaina, M.W., 2005. Estimating relative station sizes in early hydrogen station networks. 16th Annual Conference of the National Hydrogen Association Annual. Washington, D.C., March 29 - April 1.

Melaina, M.W., 2004. Addressing the chicken and egg problem: modeling network-level transitions between modes of hydrogen delivery. The International Hydrogen Energy Forum. Beijing, China, May 25-28.

Melaina, M.W., 2004. Turn of the century refueling: lessons from the past for introducing hydrogen fuel for 21st century vehicles. 15th Annual U.S. Hydrogen Conference and Exposition of the National Hydrogen Association. Hollywood, CA, April 26-30.

Zhao, J., **M.W. Melaina,** 2003. Transition to hydrogen-based transportation: lessons learned from alternative fuel vehicles in the United States and China. Sustainable Multi-Modal Transportation for Chinese Cities. Shanghai, China, October 20-21.

Melaina, M.W., 2003. Initiating hydrogen infrastructures: the role of the chicken and egg problem in increasing energy security and reducing greenhouse gas emissions in the U.S. 14th Annual U.S. Hydrogen Conference and Exposition of the National Hydrogen Association. Washington, D.C, March 4-6.

Melaina, M.W., 2002. Initiating hydrogen infrastructures. 14th World Hydrogen Energy Conference: The Hydrogen Planet. Montreal, Quebec, Canada. June 9-13, 2002 (poster).

Melaina, M.W., G. Keoleian, 2001. Urban energy metabolism: framework and case study. Inaugural Meeting of the International Society for Industrial Ecology: The Science & Culture of Industrial Ecology. Leiden, The Netherlands, November 12-14.

Melaina, M.W., G. Keoleian, 2001. A framework for urban energy metabolism studies: an Ann Arbor, Michigan case study. The Alliance for Regional Resource Management (ARM) Workshop. Zurich, Switzerland, August 28-30.

Björklund, A., **M.W. Melaina**, G. Keoleian, 1999. Hydrogen as a transportation fuel produced from thermal gasification of municipal solid waste: an examination of two integrated technologies. University of Michigan, International Workshop on Environmental Systems Analysis, November 19-20, 1999 (poster).

BOOK REVIEWS

Melaina, M.W., C. Yang, Review of the book *The Hype about Hydrogen: Fact and Fiction in the Race to Save the Planet,* by Joseph J. Romm, Island Press, Washington D.C., 2005. Journal of Ecological Economics 63(1): 244-245.

REPORTS

E. Wood, S. Raghavan, C. Rames, J. Eichman, **M.W. Melaina**, Regional Charging Infrastructure for Plug-In Electric Vehicles: A Case Study of Massachusetts, Technical Report, National Renewable Energy Laboratory (NREL), Golden, Colorado.

M.W. Melaina, B. Bush, J. Eichman, E. Wood, D. Stright, V. Krishnan, D. Keyser, T. Mai, J.

McLaren, 2016. National Economic Value Assessment of Plug-in Electric Vehicles: Volume I, Technical Report NREL/TP-5400-66980, National Renewable Energy Laboratory, Golden, Colorado.

A. Milbrandt, B. Bush, **M.W. Melaina**, 2016. Biogas and Hydrogen Systems Market Assessment, Technical Report NREL/TP-6A20-63596, National Renewable Energy Laboratory, Golden, Colorado.

M. Penev, **M.W. Melaina**, B. Bush, M. Muratori, E. Warner, Y. Chen, 2016. Low-Carbon Natural Gas for Transportation: Well-to-Wheels Emissions and Potential Market Assessment in California, Joint Institute for Strategic Energy Analysis, National Renewable Energy Laboratory, Technical Report NREL/TP-6A50-66538.

J. Eichman, A. Townsend, **M.W. Melaina**, 2016. Economic Assessment of Hydrogen Technologies Participating in California Electricity Markets, Technical Report NREL/TP--5400-65856, National Renewable Energy Laboratory, Golden, Colorado.

D. Gagne, S. Haase, B. Oakleaf, D. Hurlbut, S. Akar, A. Wall, C. Turchi, P. Pienkos, J. Melius, **M.W. Melaina**, 2015. The Potential for Renewable Energy Development to Benefit Restoration of the Salton Sea. Analysis of Technical and Market Potential. Technical Report NREL/TP--7A40-64969, National Renewable Energy Lab, Golden, Colorado.

J. Eichman, **M.W. Melaina**, 2015. Hydrogen Energy Storage and Power-to-Gas: Establishing Criteria for Successful Business Cases, Technical Report NREL/PR-5400-65386, National Renewable Energy Laboratory, Golden, Colorado.

M.W. Melaina, J. Eichman, 2015. Hydrogen Energy Storage: Grid and Transportation Services, Technical Report NREL/TP-5400-62518, National Renewable Energy Laboratory, Golden, Colorado.

M.W. Melaina, M.S. Helwig, 2014. California statewide plug-in electric vehicle infrastructure assessment, California Energy Commission, Report Number CEC-600-2014-003.

B. Bush, **M.W. Melaina**, M Penev, W Daniel, 2013. SERA Scenarios of Early Market Fuel Cell Electric Vehicle Introductions: Modeling Framework, Regional Markets, and Station Clustering, Technical Report NREL/TP-5400-56588, National Renewable Energy Laboratory, Golden, Colorado.

M.W. Melaina, M. Penev, D. Heimiller, 2013. Resource assessment for hydrogen production Authors, Technical Report NREL/TP-5400-55626, National Renewable Energy Laboratory, Golden, Colorado.

M.W. Melaina, G. Heath, D. Sandor, D. Steward, L. Vimmerstedt, E. Warner, K.W. Webster, 2013. Alternative fuel infrastructure expansion: costs, resources, production capacity, and

retail availability for low-carbon scenarios, Technical Report DOE/GO-102013-3710, National Renewable Energy Laboratory, Golden, Colorado.

M.W. Melaina, O. Antonia, M. Penev, 2013. Blending hydrogen into natural gas pipeline networks: a review of key issues, Technical Report NREL/TP-5600-51995. National Renewable Energy Laboratory, Golden, Colorado.

Denholm, P., Dillon, A., Drury, E., Glatzmaier, G., Logan, J., **Melaina, M.W.**, Neubauer, J., Reindl, D., Santhanagopalan, S., Smith, K., Steward, D., Succar, S. (2012). Energy Storage for Power Grids and Electric Transportation: A Technology Assessment. 146 pp.; NREL Report No. TP-6A20-51252.

Vimmerstedt, L., Brown, A., Heath, G., Mai, T., Ruth, M., **Melaina, M.W**., Simpkins, T., Steward, D., Warner, E., Bertram, K., Plotkin, S., Patel, D., Stephens, T., Vyas, A. (2012). High Penetration of Renewable Energy in the Transportation Sector: Scenarios, Barriers, and Enablers; Preprint. 9 pp.; NREL Report No. CP-6A20-54442.

Vimmerstedt, L., Brown, A., Heath, G., Mai, T., Ruth, M., **Melaina, M.W.**, Simpkins, T., Steward, D., Warner, E., Bertram, K., Plotkin, S., Patel, D.; Stephens, T., Vyas, A. (2012). WREF 2012: High Penetration of Renewable Energy in the Transportation Sector: Scenarios, Barriers, and Enablers. Proceedings of the World Renewable Energy Forum, 13-17 May 2012, Denver, Colorado (CD-ROM). Boulder, CO: American Solar Energy Society (ASES) 7 pp.; NREL Report No. CP-6A20-57045.

Melaina, M.W.; Steward, D.; Penev, M.; McQueen, S.; Jaffe, S.; Talon, C. (2012). Hydrogen Infrastructure Market Readiness: Opportunities and Potential for Near-term Cost Reductions; Proceedings of the Hydrogen Infrastructure Market Readiness Workshop and Summary of Feedback Provided through the Hydrogen Station Cost Calculator. 70 pp.; NREL Report No. BK-5500-55961.

Sozinova, O., M. Penev, **M.W. Melaina**, 2011. Hydrogen Delivery in Natural Gas Networks. NREL Report No. TP-5600-51995.

Texas Hydrogen Roadmap, 2009. Report from the Houston Advanced Research Center, The Woodland, Texas.

Melaina, M.W., S. McQueen, J. Brinch, Refueling Infrastructure for Alternative Fuel Vehicles: Lessons Learned for Hydrogen; Workshop Proceedings. 2008. Technical Report, National Renewable Energy Laboratory, NREL/BK-560-43669.

Arons, S.M., A.R. Brandt, M.A. Delucchi, A. Eggert, A.E. Farrell, B.K. Haya, J. Hughes, B.M. Jenkins, A.D. Jones, D.M. Kammen, S.R. Kaffka, C.R. Knittel, D.M. Lemoine, E.W. Martin, **M.W. Melaina**, J.M. Ogden, R.J. Plevin, D. Sperling, B.T. Turner, R.B. Williams, C. Yang, 2007. A Low-Carbon Fuel Standard for California, Part 1: Technical Analysis.

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Brandt, A.R., A.E. Farrell, B.K. Haya, J. Hughes, B.M. Jenkins, A.D. Jones, D.M. Kammen, C.R. Knittel, **M.W. Melaina**, M. O'Hare, R.J. Plevin, D. Sperling, 2007. A Low-Carbon Fuel Standard for California, Part 2: Policy Analysis. Available Online: http://www.lcfs.ucdavis.edu.

Lutsey, N., J. Regnier, A. Burke, **M.W. Melaina,** J. Bremson, M. Keteltas, 2006. Assessment of Tire Technologies and Practices for Potential Waste and Energy Use Reductions. Prepared by the Institute of Transportation Studies, University of California Davis, for the California Integrated Waste Management Board, Sacramento, CA. Prepared under contract IWM-03079.

BOOK CHAPTERS

M.W. Melaina, M. Penev, J. Zuboy, 2015, Hydrogen Blending in Natural Gas Pipelines, Handbook of Clean Energy Systems, Publisher John Wiley & Sons, Ltd.

M.W. Melaina, D. Steward, J. Eichman, J. Zuboy, 2015. Hydrogen Energy Storage Systems for Grid and Community Applications, Handbook of Clean Energy Systems, Publisher John Wiley & Sons, Ltd.

FORMAL PRESENTATIONS (SELECTED)

Melaina, M.; Penev, M. (2012). Infrastructure Analysis Tools: A Focus on Cash Flow Analysis. Presentation at the Hydrogen Infrastructure Meeting, Hosted by the International Council for Clean Transportation (ICCT) and the Breakthrough Technologies Institute (BTI). 19 pp.; NREL Report No. PR-5600-55563

Melaina, M.W. Understanding transitions in the transport sector. 2011 NextSTEPS Research Symposium, Institute of Transportation Studies, University of California at Davis, Davis, CA, November 7, 2011.

Melaina, M.W., D.L. Greene. Rethinking U.S. Hydrogen Infrastructure Transition Scenarios: What Comes Next? Poster Presentation. Fuel Cell and Hydrogen Technologies Merit Review, Washington DC, May 9-13, 2011.

Melaina, M.W., 2010. Innovation across the transportation value chain. Panel Discussion. Net Impact Conference, Ann Arbor, Michigan, October 29, 2010.

Melaina, M.W. Discrete choice analysis of consumer preferences for refueling availability. Hydrogen Infrastructure and Fuel Cell Technologies Program Annual Merit Review, Washington, D.C., May 19th, 2009.

Melaina, M.W., K. Webster. Reliable Muddle: Transportation Scenarios for the 80% Greenhouse Gas Reduction Goal for 2050, California Air Resource Board Scenario Modeling Meeting, Sacramento, CA, October 28, 2009.

Melaina, M.W. Lessons learned for fueling infrastructure. Hydrogen Infrastructure and Fuel Cell Technologies Program Annual Merit Review, Washington, D.C., June 12th, 2008.

Melaina, M.W. Discrete choice analysis of consumer preferences for refueling availability. Hydrogen Infrastructure and Fuel Cell Technologies Program Annual Merit Review, Washington, D.C., June 13th, 2008.

Melaina, M.W. How to mitigate the coming transportation energy crisis: A technology perspective. San Antonio Transportation Choices Forum, San Antonio, Texas, March 28th, 2008.

Melaina, M.W. Alternative Fuels and the California Low Carbon Fuel Standard. 6th Annual UC/CSU/CCC Sustainability 2007 Conference. UC Santa Barbara, June 24-27, 2007.

Melaina, M.W. Regional Hydrogen Transition Modeling: Lessons from the Hydrogen Pathways Program. IEA/IPHE Workshop on Building the Hydrogen Economy: Enabling Infrastructure Development, Detroit, Michigan. April 2-4, 2007.

Melaina, M.W. California's low carbon fuel standard and implications for biofuel development. California Biomass Collaborative, Sacramento, California. March 27-29, 2007.

Melaina, M.W. Life cycle energy use and greenhouse gas emissions from passenger vehicles. Society of Automotive Engineers World Congress. 8-11 March, 2004, Detroit, Michigan.

Melaina, M.W. Life cycle energy of a future fuel cell vehicle. Industrial Ecology for a Sustainable Future. International Society of Industrial Ecology Second International Conference, University of Michigan, Ann Arbor, Michigan. June 29 – July 2, 2003.

Melaina, M.W. Initiating hydrogen infrastructures: preliminary estimates of a sufficient number of hydrogen stations in the U.S. Market Challenges of Fuel Cell Commercialisation. Fuel Cell and Hydrogen Research Center, Berlin, Germany. September 12-13, 2002 (Proceedings published in the International Journal of Hydrogen Energy, June 2003).

Melaina, M.W., G. Keoleian, Municipal energy metabolisms: an Ann Arbor case study. The Science & Culture of Industrial Ecology. International Society of Industrial Ecology Inaugural Meeting. Leiden, The Netherlands. November 12-14, 2001.

Melaina, M.W., G. Keoleian, Municipal energy metabolisms: an Ann Arbor case study. Alliance for Regional Resource Management: Workshop ‘01. Swiss Federal Institute of Technology, Zurich, Switzerland. August 28-30, 2001.

EVENTS ORGANIZED

Plug-in Electric Vehicle Infrastructure Planning workshop, California Energy Commission, Sacramento, California, January 30, 2013.

Early Market Readiness Workshop, Held in conjunction with the Fuel Cell and Hydrogen Energy Association Annual Meeting, Washington DC, February 19, 2011.

International Partnership for a Hydrogen Economy, Infrastructure Workshop, Sacramento, California, February 25-26, 2010.

Delivering Renewable Hydrogen: A Focus on Near-Term Applications. Held in conjunction with the Fuel Cell Seminar, Palm Springs, California, November 16, 2009.

Transportation and Stationary Power Integration Workshop, Sponsored by the U.S. Department of Energy, the U.S. Fuel Cell Council, and the National Renewable Energy Laboratory. Phoenix, Arizona, October 27, 2008.

Refueling Infrastructure for Alternative Fuel Vehicles: Lessons Learned for Hydrogen. Sponsored by the U.S. Department of Energy and the National Renewable Energy Laboratory, Sacramento, California, April 2-3, 2008.

University of Michigan Interdepartmental Fuel Cell Technology Meeting. December 2000. Included presentations on current research on the U of M campus related to fuel cell technology.

Fuel Cells for Motor Vehicles Seminar Series. University of Michigan, sponsored by the Department of Physics and College of Engineering. Fall 1998 and winter 1999. Speakers included Dr. Margaret Steinbugler (United Technologies, International Fuel Cells), Dr. Joan Ogden (Princeton University), James Adams (Ford) and Moshen Shabana (GM).

ACADEMIC SERVICE

Research Thread Leader, Scenarios and Case Studies Thread within the Sustainable Transportation Energy Pathways program (STEPS), Institute of Transportation Studies, UC Davis, January 2007 to present.

Research Track Director, Policy and Business Strategy Track, Hydrogen Pathways Program, Institute of Transportation Studies, UC Davis, 10/05 to 12/06.

Journal Article Reviews (28 articles since 2005)

Environmental Science and Technology	(10 articles)
Energy Policy	(9 articles)
European Journal of Operational Research	(2 articles)
International Journal of Hydrogen Energy	(3 articles)
Energy & Fuels	(1 article)

Transportation Research, Part E	(1 article)
Journal of Public Policy	(1 article)
Journal of Transport Geography	(1 article)
Technovation	(1 article)

PROFESSIONAL SOCIETIES

- Society of Automotive Engineers
- International Association for Energy Economics

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2900 W Dallas, Apt 617
Houston, TX 77019

robndot1201@gmail.com
713-898-8603
linkedin.com/in/rob-merritt-b8616013

CV

Education

I obtained a Bachelors of Science in Geology at the University of Kansas before pursuing a Master in Structural Geology at the University of Texas. My thesis was on the "Structure of the Ceballos Meurto Mountains of Big Bend National Park, Texas".

Publication - W.R. Muehlberger and R W Merritt, Notes on the Pull-Apart Grabens near Bouquillas Canyon, Big Bend National Park, Texas. Guidebook of the West Texas Geologic Society, October, 1985.

Employment

1979-1981

Research Assistant at the Texas Bureau of Economic Geology, Austin, Texas

Employed by the Waste Isolation Pilot Project, exploring potential locations for permanent storage of nuclear waste in salt deposits.

1981-1984

Geologist at the Exxon USA Inc., Houston, Texas

Began work in exploration of the Wilcox in Louisiana, transferred to an exploration data support group, was instrumental in transitioning that group off of a punch-card based systems and on to computer terminals.

1984-1990

Supervisor of Aids to Interpretation, Elf Aquitaine Petroleum, Houston, Texas

Recruited to Elf to manage a multi-year, nine million dollar project called the Technical Data Management System (TDMS) which involved creation of an integrated database system to hold all of the commercial and proprietary data required for oil and gas exploration.

Advisor, Elf Venture Capital, Houston, Texas

Frequently loaned out by the local Affiliate as an advisor and analyst to a small headquarters team that sought to leverage early investments in new technology to gain proprietary access.

1990-2000

Manager of Exploration Information, Elf Exploration, Inc., Houston, Texas

Role expanded to include supervision of all physical filerooms and document management, all drafting and computer aided design, as well as continued responsibility over TDMS and mapping services.

Company Representative and Secondee, Petrotechnical Open Software Corporation (POSC)

Represented Elf at the founding of POSC (now Energistics) which had a mission of developing, supporting, evolving, and promoting open standards for information management of the oil and gas exploration and production industry. Later I chaired the committee tasked with collection and consolidation of industry design input for drilling and production information and in 1993 I was seconded to POSC for six months to perform the first live tests of the database. I was seconded again in 1994 to oversee the first commercial implementation of this database by representatives of various oil and gas application vendors

Publication - Douglas Zahniser, R W Merritt, C K Chan, Project Evaluates POSC Specification for Infill Drilling, Oil & Gas Journal, 1994, Vol. 92, No. 20, pp 29-31.

2000-2017

Manager of Geoscience Information (IGeo), Total E&P Inc., Houston, Texas

Following the acquisition of Elf by Totalfina, oversaw an expanded portfolio charged with integrating the technical data assets of Elf, Total and Fina. Continued management of all document management, drafting and database and mapping activities. Significant projects include:

Balancing environmental and economic factors in permafrost zones of the Alaska North Slope – developed proprietary satellite analysis techniques to identify and map zones of heightened environmental risk in combination with zones of highest potential prospectivity to identify best potential drill sites with the lowest potential risk. Reduced survey time for field crews from weeks to single day.

Document Unit/GIS Coordinator for the Total E&P Oil Spill Response Plan – as an associate of Total E&P's Health, Safety and Environment (HSE) team, I have been trained for a specific role in the FEMA Incident Command System. This came about during the response to Hurricane Ivan in 2004 which caused significant damage to the Offshore Gulf of Mexico oil and gas infrastructure. The traditional, hardcopy methods of tracking this fast developing situation failed, and I was asked to step in to successfully resolve the problem with digital solutions.

Developing an evacuation plan for the Affiliate in case of disaster – following the Katrina disaster in 2005, I was tasked with developing a plan to evacuate 100 employees in case of a similar occurrence in Houston. Three weeks later, Hurricane Rita threatened Houston, and the plan was successfully put into action. Since then, my role has evolved into the Hurricane Watch Commander, using my training in meteorology and HSE to work with our meteorological contractor and Harris County Office of Emergency Management to evolve the plan and monitor weather conditions throughout the hurricane season.

Canyon Express Pipeline failure – during Hurricane Ivan, our Canyon Express deepwater pipeline was damaged by an anchor chain from a runaway drilling platform. Using integrated bathymetric data, design documents and observations from remotely operated vehicles, I put together a compelling case documenting what had occurred. As part of this process, I testified to my findings in Federal Court.

Acquisition of Unconventional Play Data for the Barnett Field – when Total acquired a minority interest in the shale gas Barnett field of north Texas in 2010, I was tasked with creating a mirror image of the operator's collection of technical and legal documents and databases that could be kept synchronized. Given that this field was at the time the oldest horizontally drilled and fracked field in the US with more than 300,000 land owners, and 20 rigs in operation, this was no small task. I established a methodology for automatic monthly transfer of documents from the operator's Electronic Document Management System into an FTP document structure that could then be mapped to a copy on our local directory. In addition, I worked with a contractor, to develop a technique that was acceptable to the operator for extracting all relevant data from their internal databases, and after filtering out the proprietary information, directly update the data into our database. We expanded this technique to include the Utica when we acquired an interest in that shale gas play.

Tsearch Windows Search Tool – I designed and oversaw the creation of the Tsearch tool, which allows efficient searching of the contents of disorganized network drives far more quickly than is possible using Window Search. It is particularly valuable for locating information in legacy directories of departments or organizations that no longer exist, or new data collections obtained as part of asset acquisition. This system was submitted for a Patent.

Smart Predictive Analytics (SPA) – I received company-wide recognition for my contributions to the Smart Predictive Analytics project, which takes data from existing shale gas wells to identify future production trends, processing that data using artificial intelligence algorithms, to allow better prediction of the performance of new wells. I supervised the team who prepared the analysis dataset and performed the first phase of testing of artificial intelligence techniques.

MARK MONIQUE

[redacted] Email: [redacted]

Summary: Bachelor's degree with more than 20 years senior management experience in manufacturing and military environments. Expertise in leadership, strategic planning and implementation with superior project management acumen. Specific skills include quality assurance, finding innovative and creative solutions to complex problems, resourcefulness, and team building.

SKILLS

- Written and Oral Communication
- Teambuilding
- Troubleshooting
- E, H & S
- Process Design
- Managing Profitability
- Quality Assurance
- Product Development

SELECTED ACCOMPLISHMENTS and WORK HISTORY

President 2007 – Present

Savogran Company, Norwood, MA

- **Chief executive officer** of the corporation with general supervision and control of the business.
- **Responsible** for providing strategic leadership for the company by working with the Board and senior management to establish long-range goals, strategies, plans and policies.
- **Plan**, develop, organize, implement, direct and evaluate the corporation's fiscal function and performance.
- **Provide** strategic financial input and leadership on decision making issues affecting the corporation
- **Develop**, implement and enhance policies and procedures of the corporation by way of systems that improve the overall operation and effectiveness of the organization.
- **Create** the long and short term strategies surrounding the marketing of products.
- **Research and development** of current and new products
- **Continually** review the performance of the corporation
- **Assess** the performance of subordinates

Member 2016 – Present

Massachusetts Advisory Committee to the Toxic Use Reduction Administrative Council

- **Small business representative** providing stakeholder input to the Toxic Use Reduction Administrative Council on the coordination of toxics laws and regulations.
- **Comment** on proposed regulations pertaining to toxics production and use, hazardous waste, industrial hygiene, worker safety, public exposure to toxics or releases of toxics into the environment prior to their promulgation.
- **Participate** in deliberations regarding the designation of substances as higher hazard or lower hazard in accordance with the Toxic Use Reduction Act.

Technical Director 1988 - 2007
Savogran Company, Norwood, MA [Chief Chemist 1988-1989]
Identified manufacturing productivity improvements.

- **Led** management team in the specification and purchase of new manufacturing equipment. Specified the purchase and installation of a $275,000 Schneider case packer.
- **Oversaw** the engineering of a filling line including capping, conveying and packing.
- **Performed** as lead manager in the design, permitting and installation of new 50,000 gallon underground storage tank farm. Managed the removal of existing tank farm.
- **Managed** product costs and monitored margins and identified raw material and container savings opportunities through effective negotiation contracts with suppliers.
- **Managed** quality control minimizing product liability and consumer issues.
- **Formulated** new products for the allied paint and cleaning markets.
- **Reformulated** existing products to stay current with emerging environmental regulations.
- **Designed** product packaging including warnings and directions and prepared marketing materials such as sell sheets and catalogs.
- **Performed** all aspects of environmental, health and safety including DOT HAZMAT compliance.
- **Prepared** air permits for the States of Massachusetts and Illinois.
- **Managed** computer system, i.e. Batchmaster/Platinum, EDI application, E-mail, website, server and workstation maintenance.
- **Toxic** Use Reduction Planner (TURP)

Chief Chemist 1987 - 1988
Camger Chemical Systems, Norfolk, MA

- **Formulated** coatings for the industrial and commercial markets.
- **Provided** technical support to sales and manufacturing.

Application Chemist 1986 - 1987
Sanncor Industries, Leominster, MA

- **Formulated** waterborne urethane coatings.
- **Provided** technical support to sales and manufacturing.

MILITARY

Lieutenant Colonel-Chemical Branch (Retired) 1981 - 2007
Massachusetts Army National Guard
Assignments

- Chief, Environmental Management Office, JF-HQ MA ARNG
- Training Operations and Training Officer, ARNG Training Site, Camp Edwards
- Environmentalist, State Area Command
- Chemical Officer, State Area Command
- Chemical Officer, 42d Division Artillery
- Commander, 272d Chemical Company
- Platoon Leader, 272d Chemical Company

EDUCATION

Civilian:

- Bachelor of Science, Chemistry — 1986
  Framingham State College, Framingham, MA

Military:

- Chemical School, Officer Basic Course — 1986
- Chemical School, Officer Advanced Course — 1994
- Combined Arms and Services Staff School — 1996
- Command and General Staff Officer Course — 2001
- Antiterrorism Program Manager Course — 2003
- Environmental Program Manager Course — 2004

Larry S. Monroe, Ph.D.
Energy and Environmental Consultant

[redacted]

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Blountsville, AL 35031
205-429-3227
lsmonroe@otelco.net

SUMMARY:

Dr. Larry Monroe recently retired as the Chief Environmental Officer and SVP of Research for Southern Company, and is currently a consultant for energy and environmental issues. Dr. Monroe has served as an industry leader in the regulatory process and technology of emissions control from fossil fuel combustion, serving in leadership roles with the Electric Power Research Institute, the Coal Utilization Research Council, and the Utility Air Regulatory Group. He has participated as an industry representative in the Environmental Protection Agency's Clean Air Act Advisory Committee stakeholder process for developing regulations for controlling mercury emissions from coal-fired power plants and for greenhouse gas Best Available Control Technology (BACT) guidance.

Dr. Monroe has testified before the United States Senate on mercury control technology (http://epw.senate.gov/public/index.cfm?FuseAction=Hearings.Testimony&Hearing_ID=dae88db9-802a-23ad-462e-86f348663bcb&Witness_ID=a5fae4cf-6d31-47a8-a682-cc6c27482df4) and the U.S. House on coal technology issues (http://science.house.gov/publications/hearings_markups_details.aspx?NewsID=2375).

EDUCATION:

Auburn University, Auburn, Alabama
B.S. Chemical Engineering – 1979

Massachusetts Institute of Technology, Cambridge, Massachusetts
Ph.D. Chemical Engineering – 1989

Dissertation Title: "An Experimental and Modeling Study of Residual Fly Ash Formation in Combustion of a Bituminous Coal" (http://dspace.mit.edu/handle/1721.1/14195)

PROFESSIONAL EXPERIENCE:

Energy and Environmental Consultant, Braselton, Georgia
Principal (Apr. 2017 – present)
Currently supporting Southern Company, including marketing of the U.S. Department of Energy's National Carbon Capture Center at Alabama Power's Plant Gaston

Southern Company Services, Birmingham, Alabama
Chief Environmental Officer and SVP Research & Environmental Affairs (Mar. 2014 – Apr. 2017)

- Led the business through an intense period of federal environmental rulemaking, including significant final rules on greenhouse gases, water quality, and coal ash – representing Alabama Power and the other operating companies to ensure fair, science-based regulations
- Created the vision for the expansion of the company's R&D activities to address the transition of the utility industry as renewable generation, batteries, and digital customer transactions begin to dominate the business
- Led this expanded vision for the R&D team to successfully engage in a groundbreaking experiment at Ross Bridge in Hoover, Alabama, to partner with residential customers in highly efficient homes in a smart neighborhood (http://alabamanewscenter.com/2017/04/21/alabama-power-signature-homes-launch-smart-neighborhood-ross-bridge/)

Georgia Power Company, Atlanta, Georgia
General Manager, Environmental Affairs (Jan. 2011 – Mar. 2014)

- Led a staff of over 40 professionals to ensure environmental compliance with all air emission environmental regulations for the Georgia Power generating fleet
- Oversaw the construction of a new $14M Environmental Laboratory for Georgia Power which also supports Alabama Power's Plant Farley near Dothan

Southern Company Services, Birmingham, Alabama
Senior Research Consultant and Program Manager (1998 – 2011)

- Managed the company's technology development for air emissions reduction as the company invested over $10B in capital in power plants across the Southeast, including Alabama Power's Plants Barry, Gaston, Gorgas, and Miller
- Led the electric utilities effort on the regulations and control of mercury emissions, and was frequently called the "de facto" spokesman for the industry by the trade press (http://www.nbcnews.com/id/4532505/ns/us_news-washington_post/t/technology-bottleneck-slows-mercury-cleanup/#.WTbXBYWcFdh)
- Led the project to evaluate the feasibility of adding Selective Catalytic Reduction to Alabama Power's largest facility, Plant Miller, located in Quinton, Alabama, to reduce nitrogen oxide emissions. Based on this R&D, the $365M systems were installed to the benefit of Alabama citizens through cleaner air (http://mygreenbirmingham.com/2011/02/09/alabama-power-completes-environmental-improvements-at-plant-miller/)
- Testified before the U.S. Senate on mercury emissions (2003, https://www.epw.senate.gov/hearing_statements.cfm?id=213216) and before the U.S. House on the U. S. Department of Energy (DOE) Advanced Coal Programs, highlighting the U.S. DOE and Southern Company National Carbon Capture Center in Wilsonville, Alabama (2009, http://archives.democrats.science.house.gov/Media/file/Commdocs/hearings/2009/Energy/11mar/Monroe_Testimony.pdf)

Southern Research Institute, Birmingham, Alabama
Manager, Combustion Research (1990-1998)

- Completed construction, performed initial startup, and began the R&D program for the Combustion Research Facility in partnership with Southern Company that enabled the use of cleaner Alabama coal
- Performed approximately $15M of R&D at the facility for the Department of Energy, the U.S. EPA, the Electric Power Research Institute (EPRI), Southern Company and other utilities, and coal companies

Massachusetts Institute of Technology, Cambridge, Massachusetts
Staff Research Engineer (1989-1990)

- Performed research at the MIT Combustion Research Facility, improving industry understanding of opportunities for cleaner coal combustion

AWARDS:

- In 2013, Larry was named by Power Magazine as the 16th Most Influential Person in the Power Generation industry over the last 25 years, joining Jack Welsh of GE, Tom Fanning of Southern Company, and Dr. Ernie Moniz, the Secretary of Energy (http://www.power-eng.com/articles/2013/10/who-is-the-power-generation-industry-s-most-influential-person.html)
- With U.S. DOE and EPRI, Larry led the first mercury control project test at a full-scale power plant in the U.S. at Alabama Power's Gaston Steam Plant in Wilsonville, Alabama. This project received a 2003 R&D 100 Award from R&D Magazine, known as the "Oscars for Innovation" and given across all industries and laboratories (See http://www.power-eng.com/articles/2003/10/activated-carbon-for-mercury-emissions-control-earns-rd-100-award.html)
- In 2015 for work at Alabama Power's Plant Barry in Bucks, Alabama, a team under Larry's management won two R&D 100 Awards by R&D Magazine, winning the gold award for corporate social responsibility, as well as an additional R&D 100 award in the process/prototyping category (http://alabamanewscenter.com/2015/11/17/alabama-powers-plant-barry-recognized-in-rd-100-awards/#sthash.6inUchhI.dpuf)
- Larry received numerous Technology Transfer Awards from the EPRI for efforts to develop and share technology advancements, including work initiated at Alabama Power plants (2001, 2003, 2006, 2008)
- Over the years, Larry delivered numerous keynote addresses at international conferences on air pollution control

COMMUNITY INVOLVEMENT:

Adjunct Professor, UAB School of Engineering

BEST (Boosting Engineering Science and Technology) Robotics, Center Street Middle School, Birmingham, Alabama (2001 – 2005)

Clean Air Campaign, Atlanta, Georgia (2011 – 2014)

BOARDS:

Auburn University Research Advisory Board, Auburn, Alabama (2013 – present)

National Renewable Energy Laboratory, Boulder, Colorado (2013 – present)

EPRI Research Advisory Board (Executive Committee), Charlotte, North Carolina (2013 – 2017)

Western Research Institute, Laramie, Wyoming (2005 – 2011)

PUBLICATIONS:

Esposito R.A., Monroe, L.S., and Friedman, J. S., (2011) Deployment Models for Commercialized Carbon Capture and Storage, Environmental Science & Technology, 45, 139–146.

"Plant Crist Mercury Plume Study," Matthew Landis, with J. Ryan and E. Oswald, EPA Office of Research and Development, Research Triangle Park, North Carolina; J. Jansen, L. Monroe, and J. Walters, Southern Company, Birmingham, Alabama; L. Levin and A. ter Schure, EPRI, Palo Alto, California; and D. Laudal, EERC, Grand Forks, North Dakota, Air Quality VII: An International Conference on Carbon Management, Mercury, Trace Substances, SOx, NOx, and Particulate Matter, Arlington, VA, October 26-29, 2009.

"Interpreting Enhanced Hg Oxidation with Br Addition at Plant Miller," Stephen Niksa, President, with C. Naik, Niksa Energy Associates, Belmont, California; and M. Berry and L. Monroe, Southern Company Services Inc., Birmingham, Alabama, Air Quality VI: International Conference on Mercury, Trace Elements, SO3, Particulate Matter and Greenhouse Gases, Arlington, VA, September 24-27, 2007.

A Review of Sulfuric Acid formation and Behavior in Coal-Fired Power Plants, L. Monroe, N. Irvin, Southern Company, Power Plant Air Pollutant Control "Mega" Symposium, Baltimore, MD, August 28-31, 2006.

“Interconversion of Emitted Atmospheric Mercury Species in Coal-Fired Power Plant Plumes,” Eric Prestbo, Senior Research Scientist – Atmospheric Trace Metals, with P. Swartzendruber, Frontier Geosciences Inc., Seattle, WA, USA; L. Levin, EPRI, Palo Alto, CA, USA; W. Aljoe, DOE NETL, Pittsburgh, PA, USA; J. Jansen and L. Monroe, Southern Company, Birmingham, AL, USA; D. Michaud, We Energies, Milwaukee, WI, USA; D. Laudal, R. Schulz, and G. Dunham, EERC, Grand Forks, ND, USA; and R. Valente, Tennessee Valley Authority, Muscle Shoals, AL, USA, Air Quality V: International Conference on Mercury, Trace Elements, SO3, and Particulate Matter, Arlington, VA, September 18-21, 2005.

“Full-Scale Evaluation of Activated Carbon Injection,” Mark Berry, Principal Research Engineer, Southern Company Generation, Birmingham, AL, USA, and Carl Richardson, Senior Scientist, URS Corporation, Austin, TX, USA; with K. Dombrowski, URS Corporation, Austin, TX, USA; D. Chapman, DOE NETL, Morgantown, WV, USA; R. Chang, EPRI, Palo Alto, CA, USA; L. Monroe, Southern Company Generation and Energy Marketing, Birmingham, AL, USA; S. Glessman and T. Campbell, ADA–ES, Littleton, CO, USA; and K. McBee, Georgia Power Plant Yates, Newnan, GA, USA, Air Quality V: International Conference on Mercury, Trace Elements, SO3, and Particulate Matter, Arlington, VA, September 18-21, 2005.

Sorbent Injection for Mercury Control Upstream of Small-SCA ESPs, K. Dombrowski, C. Richardson, T. Machalek, URS Corporation; D. Chapman, U.S. DOE-NETL; R. Chang, EPRI; L. Monroe, M. Berry, N. Irvin, Southern Company Generation and Energy Marketing; K. McBee, Georgia Power; S. Sjostrom, ADA-ES; et al., Combined Power Plant Air Pollutant Control Mega Symposium, Washington, DC, August 2004.

An Evaluation of Activated Carbon and Sodium Tetrasulfide for the Removal of Vapor Phase Mercury from PRB Flue Gas at Pilot-Scale, L. Monroe, M. Berry, N. Irvin, Southern Company; R. Merritt, R. Heaphy, T. Gale, Southern Research Institute; R. Chang, EPRI, Combined Power Plant Air Pollutant Control Mega Symposium, Washington, DC, August 2004.

Mercury Takes Centre Stage, Larry Monroe, Environmental Finance, November 2003.

"Long-Term Evaluation of Activated Carbon Injection for Mercury Control Upstream of a COHPAC Fabric Filter," C. Jean Bustard, Executive Vice President, with C. Lindsey, P. Brignac, T. Taylor, T. Starns, S. Sjostrom, and R. Schlager, ADA Environmental Solutions, LLC, Littleton, CO; S. Renninger, DOE NETL, Morgantown, WV; L. Monroe and M. Berry, Southern Company, Birmingham, AL; R. Miller, Hamon Research-Cottrell, Inc., Walnutport, PA; and R. Chang, EPRI, Palo Alto, CA, Conference on Air Quality IV: Mercury, Trace Elements, and Particulate Matter, Arlington, VA, September 22-24, 2003.

Results of Activated Carbon Injection for Mercury Control, Upstream of a COHPAC Fabric Filter, J. Bustard, ADA Environmental Solutions; S. Renninger, NETL; R. Chang, EPRI; R. Miller, Hamon Research-Cottrell; L. Monroe, Southern Company; S. Sjostrom, EMC Engineering, Combined Power Plant Air Pollutant Control Mega Symposium, Washington, DC, May 19-22, 2003.

Removing Mercury from Coal, Larry Monroe and Rich Miller, Pollution Engineering, April 1, 2003.

"Full-Scale Evaluation of Sorbent Injection for Mercury Control on Coal-Fired Power Plants," Jean Bustard, Executive Vice President, with M. Durham, T. Starns, C. Martin, R. Schlager, C. Lindsey, and K. Baldrey, ADA Environmental Solutions, LLC, Littleton, CO; L. Monroe, Southern Company, Birmingham, AL; T. Coughlin and D. Johnson, Wisconsin Electric Power, Milwaukee, WI; S. Renninger, DOE NETL, Morgantown, WV; and R. Chang, EPRI, Palo Alto, CA, Conference on Air Quality III: Mercury, Trace Elements, and Particulate Matter, Arlington, VA, September 10-12, 2002.

Full Scale Evaluation of Mercury Control with Sorbent Injection and COHPAC on the Alabama Power E.C. Gaston, C. Jean Bustard, ADA-ES. Michael Durham, ADA-ES, LLC, Cherles Lindsey, ADA-ES, LLC, Travis Starns, ADA-ES, LLC, Ken Baldrey, ADA-ES, LLC, Cameron Martin, ADA-ES, LLC, Sharon Sjostrom, Apogee Scientific, Rick Slye, Apogee Scientific, Scott Renninger, US Department of Energy, Larry Monroe, Southern Company, Power Plant Air Pollutant Control "Mega" Symposium, Baltimore, MD, August 28-31, 2006, Chicago, IL, August 20-23, 2001.

Laura Mooney, PG

• [redacted] •
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Education

Auburn University
June 1997 Master of Science, Geology

- Structural Geology and Metamorphic Petrology of Northern Norway

Auburn University
June 1994 Bachelor of Science, Geology

- Minor in Mathematics and Psychology

Registration

- Professional Geologist, Florida, No. 2872

Specialized Training and Committees

- OSHA HAZMAT 40 Hour and 8 Hour Refresher
- Master Evaluator Certification, Energy WorldNet, November 2015
- Pipeline Safety Regulatory Compliance, Gas Technology Institute, February 2016
- EMS Internal Auditor Training, City of Tallahassee Underground Utilities and Public Infrastructure (UUPI), April 2016
- Natural Gas Career Progression Panel Chairman, (April 2016-present)
- Division Leader, Internal EMS Audit Team, Stormwater Drainage, May 2016
- Panelist, Renewing and Diversifying Your Workforce, 2016 FNGA Summit, September 2016
- Local Environmental Management Representative, (October 2015-present)
- New Public Servant Initiative, Class of 2016
- Health and Wellness Coordinator (August 2016-present)
- Strategic Planning Team member, (December 2016-Present)
- Succession Planning Committee Member (February 2017-Present)
- 2017 UUPI Relay for Life Team Member
- UUPI Toastmasters Charter Club Member
- Committee Member for the Evaluation of Gas Main and Electric Conduit Installation proposals (RFP 0031-17-RM-RC)
- ICS-100, Introduction to Incident Command System (May 2017)
- ICS-700, National Incident Management System (NIMS) (May 2017)
- ICS-200, Single Resources and Initial Action Incident (May 2017)

Experience

City of Tallahassee, Underground Utilities and Public Infrastructure, Tallahassee, Florida

Regulatory Compliance Manager, Natural Gas

October 2015-Present

Job Responsibilities

- Operations Manager-Construction, Maintenance and Cathodic Protection
- Regulatory compliance representative to the Florida Public Service Commission
- Operator Qualification (OQ) program administrator
- Management of environmental and safety training by internal and external trainers
- Coordination and Implementation of the Public Awareness and Damage Prevention Programs
- Natural Gas Utility Emergency Response Plan Administration
- Distribution Integrity Management Program (DIMP) Administration
- Natural Gas Operations and Maintenance Plan Administrator
- Coordination and Implementation of Inactive Service Line Assessment and Abandonment program
- Management of the Gas and Water Valve maintenance program consisting of over 35,000 system valves on a 5-yr maintenance cycle
- Preparation and Submittal of the PHMSA 7100 Annual report, EPA Greenhouse Gas Report, DOE Natural Gas Purchases and Deliveries Report
- Maintain compliance with Ch. 25-12, and Parts 191, 192 and 199, Title 49, Code of Federal Regulations.

Tri-Con, Inc., Tallahassee, Florida

Operations Manager

November 2013 – October 2015

Job Responsibilities

- Managed a staff of construction workers consisting of a foreman, lead driller and helpers, equipment operators, truck drivers and concrete batch plant operator
- Performed construction project tracking, planning, permitting, scheduling and invoicing
- Reviewed bid solicitations, prepared construction bids and change orders
- Communicated with construction crew, subcontractors, material suppliers and clients to make sound, practical decisions to complete projects on time and within budget
- Executed and successfully completed assessment and remediation projects using the following methods-conventional excavation, large diameter auger excavation with and without driven casing, AS/SVE system installation, chemical injection, soil gas investigations, monitor well installations
- Prepared weekly payroll
- Prepared and submitted payroll tax returns and payments
- Managed accounts payable and accounts receivable
- Annual preparation of W-2's and 1099's
- Managed recruitment of new-hires and company training programs
- Coordinated with insurance companies on annual insurance renewals-workers compensation, automotive, professional liability, pollution liability, health and life insurance
- Assisted owners with operational activities of related entities

Fortis Environmental Group, LLC, Tallahassee, Florida

Operations Manager

May 2006-November 2013

Job Responsibilities

- Managed a staff of engineers, geologists, environmental scientists, environmental technicians, administrative assistant, marketing researcher, marketers, construction workers
- Performed project tracking, planning and scheduling, construction project scheduling, invoicing and tracking of all project deliverable submittals for up to 50 projects
- Prepared cost proposals for Phase I ESAs, site assessment and remediation projects
- Reviewed and analyzed field and laboratory analytical data
- Authored geologic reports and limited scope remedial action plans
- Provided oversight to subcontractors and in-house construction crew during assessment and remediation projects
- Prepared permit applications for projects involving work within FDOT right-of-way and dewatering and discharge under NPDES permit
- Conducted soil and groundwater sampling, monitor well installation oversight, emergency response incident oversight
- Signatory authority for company to execute work orders from FDEP petroleum cleanup program
- Prepared weekly payroll for Fortis and its sister company, Tri-Con, Inc.
- Prepared and submitted payroll tax returns and payments
- Managed accounts payable and accounts receivable
- Annual preparation of W-2's and 1099's
- Provided FDEP with file information for work order audits to ensure compliance with terms and conditions of work orders
- Managed recruitment of new-hires and company training programs
- Coordinated with insurance companies on annual insurance renewals-workers compensation, automotive, professional liability, pollution liability, health and life insurance
- Prepared monthly report of operating expenses for company owners
- Generated annual revenue and operating expense budget projections
- Attended meetings to track the legislative process related to FDEP implementation of the petroleum cleanup program
- Monthly communication with clients regarding site cleanup progress
- Assisted owners with operational activities of related entities

Florida Department of Environmental Protection, Petroleum Cleanup and Office of Water Policy, Tallahassee, Florida

Environmental Specialist

***January 1999** –May 2006*

Job Responsibilities

- Provided management of site assessment and remedial action activities for petroleum cleanup projects funded with state cleanup dollars
- Assisted the professional geologist with review and evaluation of proposals and technical documents for technical adequacy, compliance with FDEP preapproval program standard operating procedures and Ch. 62-770, F.A.C.

- Generated work orders through proposal negotiations with preapproval contractors
- Reviewed and approved project deliverables and invoices
- Assisted in the evaluation of funding allocation proposals and preparation of funding allocation agreements for sites with co-mingled program and non-program discharges
- Monitored, reviewed and assessed rulemaking activities of the water management districts for compliance with Ch. 62-40, F.A.C.
- Assisted in the review of the District Water Management Plans and Regional Water Supply Plans
- Represented FDEP on water shortage issue workgroup

Burns and McDonnell, Division of Remediation Services, Kansas City, Missouri

Assistant Geologist

August 1998-January 1999

Job Responsibilities

- Conducted Phase I site reconnaissance for remediation services division project managers
- Prepared field sampling packets and site health and safety plans
- Provided oversight during monitor well and soil boring installations

Northwest Florida Water Management District, Division of Resource Regulation, Havana, Florida

Hydrogeologist

June 1997-August 1998

Job Responsibilities

- Coordinated activity for the Ch. 62-524 delineated areas program to tag potable wells located within EDB areas
- Prepared monthly and quarterly summary reports to FDEP
- Served on the water well contractor workgroup
- Served as the project manager for the district well abandonment program and provided technical oversight for district inspectors during potable well installations

JAMES C. MOORE II

Cell

QUALIFICATIONS

Experienced energy executive. Involved in all aspects of the utility industry including strategic planning, M&A, IRP, regulatory work, financial analysis, budgeting and engineering. Commodity management with experience hedging, trading and brokering in the energy industry. Transactional in coal, power, heating oil, emissions, RECs and natural gas. Strengths include creativity, data visualization, market knowledge, developing contacts, spotting opportunities and capitalizing on them.

BUSINESS EXPERIENCE

SPIRE INC—St. Louis, Missouri Aug 2014-Present

Utility Market Analyst in the Sales department. Develop tools and models to support sales reps; budget prep and reporting; Salesforce software admin; long term forecasts; peer benchmarking; gas vs electric analysis; federal and state regulatory work.

EXPERIENCE ON DEMAND—Chesterfield, Missouri Feb 2014-Aug 2014

Consulting business focused on risk management, commodity strategies and financial analysis.

BLACK BEAR COMMODITIES, LLC—St. Louis, Missouri Jul 2013-Present

Brokerage house focused on moving commodities around the world.

AMEREX BROKERS LLC—Houston, Texas April 2012-June 2013

Established Amerex coal broker desk covering U.S. and international coal markets.

AMEREN CORPORATION—St. Louis, Missouri 1984- 2012

Managed Ameren commodity positions–coal, natural gas, crude, refined products, power, emissions and renewables. Extensive interaction with senior management, internal risk management and external counterparties. Established new financial hedge program that saved $3 million on coal procurement cost in 1st quarter 2012. Saved ratepayers $90 million using a heating oil hedge in 2008. Saved several $100 million in EPA Clean Air Act compliance costs.

Spent seven years in Corporate Planning. Analysis and research supporting M&A for CIPS, CILCO, IP mergers; integrated resource planning; strategic planning; testified in front of Missouri PSC; worked with numerous consultants; analyzed new business opportunities; worked with corporate model. Seven years as a design engineer at Callaway nuclear plant.

TEACHING EXPERIENCE

ABET–Engineering Technology accreditation evaluator.

WEBSTER UNIVERSITY–Adjunct professor in the Business school teaching Operations Management and Corporate Finance at undergrad and graduate level.

MERAMEC COMMUNITY COLLEGE–Adjunct professor teaching Corporate Finance.

UNIVERSITY OF COLORADO–DENVER–Guest lecturer on the energy industry, risk management, commodities, hedging and trading.

UNIVERSITY OF OKLAHOMA–Guest lecturer on the energy industry, risk management, commodities, hedging and trading.

WASHINGTON UNIVERSITY–Lectures to MBA, Master of Finance and Master of Accounting classes. Spoke to organizations, involved in mentoring, shadowing and recruiting programs. Led student teams to analyze hedging issues at Ameren.

US EPA–Moscow delegation to discuss emission trading with Gazprom and Russian government.

UNIVERSITY OF MISSOURI-COLUMBIA–Participated in mentoring and shadowing program.

UNIVERSITY OF MISSOURI-ST. LOUIS–Worked with student teams to analyze forecast data.

EDUCATION

Master of Business Administration–Washington University, John M. Olin School of Business–1991–Graduated with honors, BΓΣ honorary fraternity, electives emphasized finance and international affairs, founder of Part Timer's Association (served as treasurer and director).

Advanced Certificate in International Affairs–Washington University, School of Arts and Sciences–1991–Emphasis on Far East, Chinese power industry.

Bachelor of Science in Electrical Engineering–University of Missouri-Rolla, School of Engineering–1983–Cum Laude; HKN and ΦΗΣ honorary fraternities; KΣ social fraternity (president, secretary and St. Pat's Board rep); AΦΩ service fraternity; St. Pat's Board.

CERTIFICATIONS

NFA Series 3 and Series 30 Registration
Registered as a Professional Engineer in Missouri
Institute of Electrical and Electronics Engineers Senior Member

OTHER EXPERIENCE

Environmental Markets Association 1995–2010

Served as Treasurer on the Board of industry trade group

Chicago Board of Trade 1998

Served on ComEd and TVA electricity futures and options advisory group

UEFEDPAC, UEPAC—St. Louis, Missouri 1994–1998

Served as Secretary of the Executive Committee of Union Electric's political action committees.

Electro Savings Credit Union—St. Louis, Missouri 1989–1997

Served as Chairman of the Board, Secretary, Director and on Supervisory Committee of a credit union with $48 million in assets.

Everyday Microsoft Office user. High proficiency with Microsoft Excel. Wide ranging software experience–Matlab, SAS, R, Python, database programs and many others.

Highly rated speaker in front of audiences from large conferences to small training sessions.

Member of cycling teams, compete in road, cyclocross and mountain bike races; avid skier.

Christopher W. Moore
Gas Technology Institute
Sr. Scientist, Energy Delivery and Utilization
(E) chris.moore@gastechnology.org · ([redacted]

Education	2011	**University of Maryland, Ph.D.** Field: Marine Estuarine Environmental Science [Advisor: Dr. Mark Castro]	College Park, Maryland
	2007	**University of Virginia, M.S.** Field: Environmental Sciences [Advisors: Drs. Jack Cosby and Jim Galloway]	Charlottesville, Virginia
	2003	**West Virginia University Institute of Technology, B.S.** *Magna Cum Laude* Field: Chemistry Minors: Business Administration and Accounting	Montgomery, West Virginia

Experience *Research*

02/2016-Present	Gas Technology Institute **Senior Scientist** Energy Delivery and Utilization	Des Plaines, Illinois
12/2013-01/2016	Desert Research Institute (DRI) **Assistant Research Professor** Division of Atmospheric Sciences	Reno, Nevada
02/2015-01/2016	University of Nevada, Reno **Graduate Faculty** Environmental Sciences and Health Atmospheric Sciences	Reno, Nevada
10/2011-11/2013	Desert Research Institute (DRI) **Postdoctoral Fellow** Division of Atmospheric Sciences [Advisor: Dr. Daniel Obrist]	Reno, Nevada
04-05/2011	National Oceanic and Atmospheric Administration **Research Fellow** Research Participation Program Atmospheric Turbulence and Diffusion Division	Oak Ridge, Tennessee
07-08/2010	National Oceanic and Atmospheric Administration **Research Fellow** Research Participation Program	Oak Ridge, Tennessee

Teaching

2004-2006	University of Virginia **Teaching Assistant** *Fundamentals of Geology*	Charlottesville, Virginia
2005	University of Virginia **Teaching Assistant** *Aqueous Geochemistry*	Charlottesville, Virginia
2000-2003	WVU Tech **Teaching Assistant** *Fundamentals of Chemistry 1 and 2*	Montgomery, West Virginia
2001-2003	WVU Tech **Teaching Assistant** *Survey of Chemistry 1 and 2*	Montgomery, West Virginia
2000-2003	WVU Tech **Tutor** *Student Support Services, Chemistry*	Montgomery, West Virginia

Research Grants

Funded

California Energy Commission: Multi-tiered Greenhouse Gas Emissions Measurements of California's Natural Gas Powered Industrial and Fueling Infrastructure.
Stephanie Shaw(PI); Electric Power Research Institute
C.Moore and Kristine Wiley (subcontract); Gas Technology Institute
$300,000
In Contracting

U.S. Department of Energy: Classification of Methane Emissions from Industrial Meters, Vintage vs New Plastic Pipe, and Plastic-lined Steel and Cast Iron Pipe.
C.Moore (PI); Kristine Wiley (Program Manager)
$1,364,000 ($1,091,000 DOE; $273,000 cost share)
10/2016 – 3/2019

Operations Technology Development, NFP: Center for Methane Research.
C. Moore (PI); Kristine Wiley (Program Manager)
$425,000
7/2016 – 6/2017

Operations Technology Development, NFP: Methane Sensors State-of-the-Art Investigation.
C. Moore (PI); Kristine Wiley (Program Manager)
$300,000
7/2016 – 6/2018

Funded (Cont.)

National Science Foundation: Collaborative Research: GEOTRACES Arctic Section: Determination of atmospheric wet and dry deposition and air-sea exchange of mercury species from coastal and offshore waters.
R. Mason (PI); **C. Moore (Co-I)**; S. Brooks (Co-I).
$266,426 (DRI portion $75,281).
2/2015 – 1/2017

National Science Foundation: Collaborative Research: Soil-Snow-Atmosphere Exchange of Mercury in the Interior Arctic Tundra.
D. Obrist (PI); D. Helmig (Co-I), **C. Moore** (post-doc).
$832,810 (DRI portion $415,918).
10/2013 – 9/2017

National Park Service: Assess Atmospheric Transport Trajectories and Variation in the Wet Deposition of Mercury Across Alaska.
C. Moore (PI)
$30,000
9/2015 – 12/2016

Desert Research Institute, Division of Atmospheric Sciences: Development of a cold plate sampler to measure atmospheric mercury and volatile organic compounds.
C. Moore (PI), D. Obrist (Co-I).
$33,196.
8/2012 – 8/2013

California Institute of Technology, Jet Propulsion Laboratory Subcontract: Implications of Arctic Sea Ice Reduction on Tropospheric Bromine, Ozone, and Mercury Chemical Process, Transport, and Distribution.
D. Obrist D (PI); **C. Moore** (Co-I).
$59,857 (incl. cost share).
11/2011 – 10/2013

Publications

20. Obrist, D., Y. Agnan, M. Jiskra, C. L. Olson, D. P. Colegrove, J. Hueber, **C. W. Moore**, J. E. Sonke and D. Helmig (2017). Tundra uptake of atmospheric elemental mercury drives Arctic mercury pollution. *Nature* **547**(7662): 201-204.

19. Simpson W.R., Peterson P.K., Frieß U., Sihler H., Lampel J., Platt U., **Moore C**., Pratt K., Shepson P., Halfacre J., Nghiem S.V. (2017). Horizontal and vertical structure of reactive bromine events probed by bromine monoxide MAX-DOAS spectroscopy. Atmospheric Chemistry and Physics. DOI: 10.5194/acp-2017-187. Accepted.

18. Agnan, Y., Le Dantec, T., **Moore, C.W.,** Edwards, G.C., Obrist, D. (2016). New Constraints on Terrestrial Surface–Atmosphere Fluxes of Gaseous Elemental Mercury Using a Global Database. *Environmental Science and Technology.* DOI: 10.1021/acs.est.5b04013.

Publications (cont.)

17. Castro, M., Moore, C. (2016). Importance of Gaseous Elemental Mercury Fluxes in Western Maryland. *Atmosphere*. DOI:10.3390/atmos7090110
16. Peleg, M., Tas, E., Obrist, D., Matveev, V., **Moore, C**., Gabay, M., Luria, M. (2015). Observational Evidence for Involvement of Nitrate Radicals in Nighttime Oxidation of Mercury. *Environmental Science and Technology.* DOI: 10.1021/acs.est.5b03894.
15. Pierce, A., **Moore, C.,** Wohlfahrt, G., Hortnagl, L., Kljun, N., Obrist, D. (2015). Eddy covariance flux measurements of gaseous elemental mercury using cavity ring-down spectroscopy. *Environmental Science and Technology.* DOI: 10.1021/es505080z.
14. **Moore, C.W.**, Obrist, D., Steffen, A., Staebler, R. M., Douglas, T. A., Nghiem, S. V. (2014). Convective forcing of mercury and ozone in the Arctic boundary layer induced by leads in sea ice. *Nature*. DOI:10.1038/nature12924.
13. **Moore, C. W**., Zielinska, B., Pétron, G., Jackson, R. B. (2014). Air Impacts of Increased Natural Gas Acquisition, Processing, and Use: A Critical Review. *Environmental Science & Technology.* DOI: 10.1021/es4053472.
12. Obrist, D., Pokharel, A., **Moore, C.** (2014). Vertical Profile Measurements of Soil Air Suggest Immobilization of Gaseous Elemental Mercury in Mineral Soil. *Environmental Science & Technology*. DOI: 10.1021/es4048297.
11. Ren, X., Luke, W., Kelley, P., Cohen, M., Ngan, F., Artz, R., Walker, J., Brooks, S., **Moore, C.,** Bauer, D., Remeika, J., Hynes, A., Dibb, J., Rolison., J., Krishnamurthy, N., Landing, W., Hecobian, A., Shook, J., Huey, G., Swartzendruber, P. (2014). Mercury Speciation at a Coastal Site in the Northern Gulf of Mexico: Results from the Grand Bay Intensive Studies in Summer 2010 and Spring 2011. *Atmosphere.* DOI: 10.3390/atmos5020230.
10. Pierce, A., Obrist, D., Moosmüller, H., Faïn, X., **Moore, C.** (2013). Cavity ring-down spectroscopy sensor development for high-time-resolution measurements of gaseous elemental mercury in ambient air. *Atmospheric Measurement Techniques*. 6, 1477-1489.
9. Nghiem, S. V., Clemente-Colón, P., Douglas, T., **Moore, C.**, Obrist, D., Perovich, D., Pratt, K., Rigor, I., Simpson, W., Shepson, P. B., Steffen, A., Woods, J. (2013). The Bromine, Ozone, and Mercury Experiment. *EOS.* 94, 33: 289-291
8. **Moore, C.W.**, Obrist, D., Luria, M. (2013). Atmospheric mercury depletion events at the Dead Sea: spatial and temporal aspects. *Atmospheric Environment*. 69: 231-239.
7. Zhang, Y., Xiu, G., Wu, X., **Moore, C.** W., Wang, J., Cai, J., Zhang, D., Shi, C., Zhang, R. (2013). Characterization of mercury concentrations in snow and potential sources, Shanghai, China. *Science of the Total Environment*. 449: 434-442.

Publications (cont.)

6. **Moore, C. W.** and Castro, M. S. (2012). Investigation of factors affecting gaseous mercury concentrations in soils. *Science of the Total Environment*. 419: 136-143.
5. Castro, M.S., **Moore, C. W.**, Sherwell, J., Brooks, S. B. (2012). Dry deposition of gaseous oxidized mercury in Western Maryland. *Science of the Total Environment*. 417-418: 232-240.
4. **Moore, C. W.**, Castro, M. S., Brooks, S. B. (2011). A Simple and Accurate Method to Measure Total Gaseous Mercury Concentrations in Unsaturated Soils. *Water, Air, and Soil Pollution*. 218:3–9.
3. Brooks, S. B. **Moore, C.**, Lew, D., Lefer, B., Tanner, D. (2011). Temperature and Sunlight Controls on Mercury Oxidation and Deposition Atop the Greenland Ice Sheet. *Atmospheric Chemistry and Physics*. 11, 8295-8306.
2. **Moore, C. W.**, Cosby, B. J., Galloway, J. N., Castro, M. S. (2009). Relationship Between pH and Stream Water Total Mercury Concentrations in Shenandoah National Park. *Water, Air and Soil Pollution*. 201: 233 - 238.
1. **Moore, C.**, Chan, S.P., Demas, J.N. and DeGraff, B.A. (2004). Comparison of methods for rapid evaluation of lifetimes of exponential decays. *Applied Spectroscopy*. 58:603-607.

Presentations *Conferences*

38. Obrist D, Agnan Y, **Moore C**, Helmig, D, Huebert J, Paxton D. Two-year record of trace gas (CO_2, CH_4, O_2, and Hg^0) concentrations and dynamics in arctic tundra soils of northern Alaska – non-linear temperature controls and impacts of diffusivity. American Geophysical Union Fall Meeting. San Francisco, CA. December 2016.
37. Hedge C, Obrist D, Agnan Y, **Moore C**, Biester H, Jiskra M, Helmig D. Soil and Pland Hg Dynamics in the Arctic Tundra. International Conference on Heavy Metals in the Environment. Ghent, Belgium. September 2016.
36. Obrist D, Helmig D, Agnan Y, Hedge C, **Moore C**, Paxton D, Hueber J. Mercury dynamics of a tundra ecosystem in northern Alaska and feedback controls on atmospheric concentrations. American Geophysical Union Fall Meeting. San Francisco, CA. December 2015.
35. Agnan Y, Obrist D, **Moore C**, Hedge C, Helmig D, Paxton D, Hueber J. Spatial and temporal variability of methane concentrations and exchanges in and between soil, snow, and the atmosphere in a tundra system in northern Alaska. American Geophysical Union Fall Meeting. San Francisco, CA. December 2015.
34. Hedge C, Obrist D, Agnan Y, **Moore C**, Biester H, Helmig, D. Soil and plant mercury concentrations and pools in the Arctic tundra of norther Alaska. American Geophysical Union Fall Meeting. San Francisco, CA. December 2015.

Conferences (cont.)

33. **Moore C**, Obrist D, Steffen A, Staebler R, Douglas T, Simpson WR, Peterson P, Nghiem S. Role of Snow and Ice Surfaces in the Atmospheric Cycling of Mercury in the Arctic. International Conference on Mercury as a Global Pollutant. Jeju, South Korea. June 2015.
32. Obrist D, Helmig D, Agnan Y, Hueber J, Hedge C, **Moore C**, Steffen A, Brooks S. Mercury dynamics of an inland tundra ecosystem in northern Alaska: an attempt for a first mass balance. International Conference on Mercury as a Global Pollutant. Jeju, South Korea. June 2015.
31. Hedge C, Obrist D, Agnan Y, **Moore C**. Soil and plant mercury concentrations and pools in the Arctic tundra of northern Alaska. International Conference on Mercury as a Global Pollutant. Jeju, South Korea. June 2015.
30. Howard D, Edwards G, **Moore C**, Obrist D. Observation of night time GEM depletion events over an Australian mid-latitude Alpine grassland. International Conference on Mercury as a Global Pollutant. Jeju, South Korea. June 2015.
29. Agnan Y, **Moore C**, Edwards G, LeDantec, T, Obrist D. A global analysis of surfaces-atmosphere exchange of gaseous elemental mercury (Hg0). International Conference on Mercury as a Global Pollutant. Jeju, South Korea. June 2015.
28. Steffen A, Cole A, Dastoor A, **Moore C,** Obrist D. Potential impacts of emissions, increases in temperature and sea ice loss on the mercury cycle in the high Arctic. International Conference on Mercury as a Global Pollutant. Jeju, South Korea. June 2015.
27. Obrist D, Agnan Y, Moore C, Hedge C, Helmig D, Hueber J, Paxton D. Mercury Cycling in Tundra Ecosystems. American Geophysical Union Joint Assembly. Montreal, Quebec, Candada. May 2015.
26. Agnan Y, Obrist D, **Moore C**, LeDantec, T. A comprehensive database of global soil-atmosphere flux studies of mercury. American Geophysical Union Fall Meeting. San Francisco, CA. December 2014.
25. Helmig D, Obrist D, **Moore C**, VanDam B, Hueber J, Molnar T, Williams M, Kramer L, Doskey, P, Fain X. The role of snow cover on surface trace gas exchanges at Toolik Lake, AK. American Geophysical Union Fall Meeting. San Francisco, CA. December 2014.
24. Obrist D, **Moore C**, LeDantec T, Agnan Y, Pearson C. Soil mercury sequestration and re-mobilization: importance for the global cycling of mercury. Soil Science Society of America Annual Meeting. Long Beach, CA. November 2014.

Conferences (cont.)

23. LeDantec T, Agnan Y, Obrist D, **Moore C.** A comprehensive database of global soil-atmosphere flux studies of mercury. Soil Science Society of America Annual Meeting. Long Beach, CA. November 2014.
22. Castro M, Sherwell J, **Moore C**. Atmospheric Mercury in Western Maryland from 1996 to 2013. National Atmospheric Deposition Program Annual Meeting. Indianapolis, IN. October 2014.
21. **Moore C**, Obrist D, Brooks S, Steffen A. An overview of mercury speciation measurements and analysis at high latitudes. Data collection, analysis, and application of speciated mercury workshop. San Francisco, CA. July 2014.
20. **Moore C**, Obrist D, Steffen A, Staebler R, Douglas T, Nghiem S. Mercury Depletion, Deposition, and Re-emission in Snowpack over the Arctic Tundra and Ocean. Goldschmidt Conference, Sacremento, CA. June 2014.
19. Obrist D, Pokharel AK, **Moore CW**. Elemental Mercury Depletion in Soils: An Unaccounted Mercury Sink? International Conference on Mercury as a Global Pollutant. Edinburgh, Scotland, July 2013.
18. **Moore CW**, Steffen A, Obrist D, Staebler R, Douglas TA, Nghiem SV. Effects of Sea Ice Dynamics on Arctic Atmospheric Mercury Cycling. International Conference on Mercury as a Global Pollutant, Edinburgh, Scotland. July 2013.
17. Pierce A, Obrist D, **Moore C**, Moosmüller M. Atmospheric mercury concentration measurements and eddy covariance flux measurements using cavity ring-down spectroscopy. International Conference on Mercury as a Global Pollutant. Edinburgh, Scotland, July 2013.
16. Darby SB, Pierce A, **Moore CW**, Moosmüller H, Venables DS, Obrist D. An atmospheric simulation chamber study of the bromine-initiated oxidation of mercury at a range of temperatures. International Conference on Mercury as a Global Pollutant. Edinburgh, Scotland, July 2013.
15. Luria M, Obrist D, **Moore CW**, Peleg M, Matveev V. Is nitrate radical a major oxidant of elemental mercury in the atmosphere? International Conference on Mercury as a Global Pollutant. Edinburgh, Scotland, July 2013.
14. Nghiem SV, Shepson PB, Simpson W, Perovich DK, Sturm M, Douglas T, Rigor IG, Clemente-Colón P, Burrows JP, Richter A, Steffen A, Staebler R, Obrist O, **Moore C**, Bottenheim J, Platt U, Pöhler D, General S, Zielcke K,Fuentes JD, Hall DK, Kaleschke L, Woods J, Hager C, Smith K, Sweet CR, Pratt K, Custard K, Peterson P, Walsh S, Gleason E, Saiet E, Webster M, Lieb-Lappen R, Linder C, Neumann G. Science Progress from the BRomine, Ozone, and Mercury EXperiment (BROMEX). Davos Atmosphere and Cryosphere Assembly 2013 Air, Ice & Process Interactions. Davos, Switzerland. July 2013.

Conferences (cont.)

13. Nghiem SV, Shepson PB, Simpson W, Perovich DK, Sturm M, Douglas T, Rigor IG, Clemente-Colón P, Burrows JP, Richter A, Steffen A, Staebler R, Obrist D, **Moore C**, Bottenheim J, Platt U, Pöhler D, General S, Zielcke J, Fuentes JD, Hall DK, Kaleschke L, Woods J, Hager C, Smith J, Sweet CR, Pratt K, Custard K, Peterson P, Walsh S, Gleason E, Saiet E, Webster M, Lieb-Lappen R, Linder C, Neumann G,. Arctic sea ice reduction and tropospheric chemical processes. The Fourth International Conference on Bioenvironment, Biodiversity and Renewable Energies, BIONATURE. Lisbon, Portugal. March 2013.
12. **Moore. C.**, Steffen, A., Obrist, D., Staebler, R., Nghiem, S. Influence of Sea Ice Dynamics on Atmospheric Mercury and Ozone Concentrations and Fluxes during the BROMEX Campaign (A31D – 0065). American Geophysical Union Fall Meeting. San Francisco, CA. December 2012.
11. Obrist, D., **Moore, C.**, Douglas, T., Steffen, A., Staebler, R., Nghiem, S. Snow Mercury Concentrations during the BROMEX campaign: Relationships to Ion Concentrations, Mercury Depletion Events, and Sea Ice Dynamics. American Geophysical Union Fall Meeting. San Francisco, CA. December 2012.
10. Luria, M., Obrist, D., **Moore, C.,** Peleg, M., and Matveev, V. Is nitrate radical a major oxidant of elemental mercury in the atmosphere? American Geophysical Union Fall Meeting. San Francisco, CA. December 2012.
9. **Moore, C.W.**, Steffen, A., Obrist, D., Staebler, R., Douglas, T. and Nghiem, S. Mercury Surface-Atmosphere Flux and Speciation Measurements in Barrow, Alaska, USA during the BROMEX campaign. European Geosciences Union General Assembly. Vienna, Austria. April 2012.
8. Tas, E., Obrist, D., **Moore, C**., Peleg, M., Luria, M. Bromine-induced atmospheric mercury depletion events at the Dead Sea: Magnitude, frequency, spatial extent, and modeled reaction pathways. European Geosciences Union General Assembly. Vienna, Austria. April 2012.
7. Pierce, A., Obrist, D., Moosmuller, H., **Moore, C**. Cavity ring-down spectroscopy (CRDS) system for measuring atmospheric mercury using differential absorption. European Geosciences Union General Assembly. Vienna, Austria. April 2012.
6. **Moore, C.W.,** Castro, M.S., Gardner, R.H., and Brooks, S.B. Measurements of Gaseous Mercury Fluxes in Western Maryland with Micrometeorological Techniques. International Conference on Mercury as a Global Pollutant. Halifax, Nova Scotia, Canada. July 2011.
5. Castro, M.S., **Moore, C.W.,** Sherwell, J., and Brooks, S.B. Dry Deposition of Gaseous Oxidized Mercury in Western Maryland at AMNet Site MD08. International Conference on Mercury as a Global Pollutant. Halifax, Nova Scotia, Canada. July 2011.
4. **Moore, C. W.** and Castro, M.S. Soil Redox Potential as a Control of Soil Total Gaseous Mercury Fluxes in Background Soils. AGU Fall Meeting. San Francisco, CA. December 2010.

Conferences (cont.)

3. Brooks, S. B., **Moore, C. W.**, Southworth, G., Dibb, J., Stutz, J., Von Glasow, R., Lefer, B. Temperature and Sunlight Controls on Atmospheric Mercury Atop the Greenland Ice Cap. International Conference on Mercury as a Global Pollutant. Guiyang, China. June 2009.
2. **Moore, C. W.**, Castro, M. S., Sherwell, J., Garrison, M. "Relative Importance of Mercury Dry Deposition to MD08 in Western Maryland. National Atmospheric Deposition Program Fall Technical Meeting. Boulder, CO. October 2007
1. **Moore, C. W.**, Galloway, J. N., Cosby, B. J. A Survey of Mercury in Water and Brook Trout of Shenandoah National Park, Virginia. National Atmospheric Deposition Program Fall Technical Meeting. Norfolk, VA. October 2006.

Invited

2014 **Moore, C. W.** Effects of Sea Ice Dynamics on Arctic Atmospheric Mercury and Ozone Cycling. University of Alaska – Fairbanks.

2013 **Moore, C. W.** Air Impacts of Shale Gas Extraction and Distribution. National Resource Council, Workshop on Risks of Unconventional Shale Gas Development, Washington, D.C.

2009 **Moore, C. W.** Mercury: Globally Transported….Locally Persistent. University of Maryland Marine, Estuarine, Environmental Sciences Department Colloquium, Annapolis, MD.

2008 **Moore, C. W.** Atmospheric Mercury Fluxes Across the Air-Surface Interface: Will Emission Regulations be Enough? Colgate University, Hamilton, NY.

Moore, C. W. Is Mercury a Problem in Western Maryland? UMCES Appalachian Laboratory, Open House, Frostburg, MD.

2006 **Moore, C. W.** Mercury in Our Environment - How Does it Affect Us? West Virginia University Institute of Technology, Montgomery, WV.

Awards

2011 Appalachian Lab Director's Fellowship

2010 UMCES, Graduate committee research grant

2010 UMCES, Travel Grant

2006 UMCES, Presidential Fellowship

2002 WVU Tech, Champe Scholarship

NSF, Research Experience for Undergraduates, Airak, Inc.

2001 NSF, Research Experience for Undergraduates, Univ. of Virginia, Chemistry Department

Field Campaigns

2012	First-ever eddy covariance gaseous elemental mercury flux measurements	Palomino Valley, Nevada
2012	Atmospheric mercury and halogen measurements at the Hebrew University	Jerusalem, Israel
2012	Bromine, Ozone, and Mercury Experiment (BROMEX)	Barrow, Alaska
2010-2011	Atmospheric mercury speciation and flux measurements	Grand Bay, Mississippi
2009-2010	Gaseous elemental mercury flux measurements via micrometeorological techniques and flux chambers	Western Maryland
2008	Speciated gaseous mercury concentration measurements	Summit Station, Greenland

Professional Service

Reviewing

Nature Geoscience, Atmospheric Measurement Techniques,

Environmental Science & Technology

Atmospheric Chemistry and Physics, Atmospheric Environment

Biogeosciences, The Science of the Total Environment

Journal of the Air & Waste Management Association

US-Israeli Bi-national Science Foundation

Committees

2015	Institutional Library Committee **Member**	DRI
2015	Environmental Science and Health **Website Redesign Committee Member**	University of Nevada, Reno
2014	Critical Objectives Task Force **Research Excellence Committee Member**	DRI
2006-2010	Allegany County Solid Waste Management Board **Appalachian Lab Representative**	Cumberland, MD
2005-2006	University of Virginia, Environmental Sciences Graduate Student Association **Co-Chair**	Charlottesville, VA

Memberships

Professional Organizations

American Geophysical Union

American Association for the Advancement of Science

CURRICULUM VITAE

THOMAS C. MUELLER
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University of Tennessee, Knoxville
Knoxville, TN 37996-4561
phone: [redacted]
865-974-5365 (FAX)
Email: tmueller@utk.edu

[redacted]

I. PERSONAL DATA

[redacted]

II. EDUCATION

Degree	Major	Institution	Date
	Chemistry	Belleville Area College	1981
B.S.	Agronomy	University of Illinois	1983
M.S.	Crop Science	University of Kentucky	1987
Ph.D.	Crop Science	University of Georgia	1990

III. EXPERIENCE

2003-present. University of Tennessee, Department of Plant Sciences, Professor with tenure. Research (80%) focuses on agronomic weed control in corn, soybeans, and wheat; and environmental fate of herbicides. Teaching (20%) includes undergraduate course in Weed Management (3 hours), and graduate courses in Herbicide Mode of Action (3 hours) and Integrated Pest Management (team taught).

2005-2007. University of Tennessee, Departmental Coordinator of Research.

1996 to 2003. University of Tennessee, Department of Plant Sciences and Landscape Systems, Associate Professor with tenure. (See above description) .

1999. Texas A&M University, Department of Soil and Crop Sciences, College Station, TX. Visiting Scholar. Conducted laboratory research; guest lectured in classes.

1991 to 1996. University of Tennessee, Department of Plant and Soil Sciences. Assistant Professor. (See above description).

1990-1991. USDA-ARS. Southern Weed Science Laboratory, Stoneville, MS. Soil Scientist. Conducted research examining herbicide behavior under field and laboratory conditions, analytical method development, bioavailability of herbicides, and validation of models simulating xenobiotic movement through surface soils.

1987-1990. University of Georgia. Agronomy Department. Graduate Research Assistant. Ph.D. in Crop Science. Dissertation: Biological Activity and Environmental Fate of RE-40885.

1985-1987. University of Kentucky. Agronomy Department. Graduate Research Assistant. M. S. in Crop Science. Thesis: Effect of 2,4-D on Fenoxaprop, Haloxyfop, and Sethoxydim Activity on Johnsongrass.

1984-1985. Clinton County Service Co., Breese, Il. County-wide salesman for crop production needs (fertilizer, chemicals, and seed).

1984.Vermillion County Service Co. Sidell, Il. Fertilizer Plant Manager. Retail sales of fertilizer, ag chemicals, and seeds. Specific duties included FS production system (GreenPlan), operation of custom application equipment, inventory of equipment and products, and personnel management.

1983. Ford-Iroquois Service Co. Gilman, Il. Management Trainee. Entry-level training position to broaden perspective of the Growmark System.

1982. Monsanto Agricultural Products. Decatur, IL. Summer Sales Assistant. Coordinated farmer-field day plot demonstrations and conducted herbicide use survey with emphasis on competitive products.

1981. Washington County Service Co. Nashville, IL. Commercial Spray Operator. Applied herbicides and insecticides to farmer's fields during spraying season.

1980-1981. Belleville Area College. Belleville, IL. Chemistry Laboratory Assistant. Prepared teaching lab sections in inorganic, organic and quantitative analysis classes, and tutored students in introductory chemistry courses.

1979-1980. Ravendale Farms, Freeburg, IL. Herdsman on 100+ cow dairy operation.

1979. Pfizer-Genetics, Inc. Crop Scout. Scouted >5000 acres for pests including weeds, insects, and diseases; and documented various management parameters.

IV. HONORS

Outstanding Review, WSSA (2016)
Fellow, Weed Science Society of America (2014)
Award of Excellence, Society for Technical Communication, Washington, DC (2009)
University of Tennessee Chancellor's Research & Creative Achievement Award (2008)
Distinguished Service Award, Southern Weed Science Society (2008)
Fulbright Senior Specialists Roster (2006-2010)
Outstanding Educator Award, Southern Weed Science Society (2007)
US-EPA Scientific Advisory Board, Ecological Processes and Effects (2003-2006)
Outstanding Paper-Honorable Mention, American Society of Ag Engineers (2002)
Outstanding Young Scientist Award, Weed Science Society of America (2000)
Outstanding Young Scientist Award, Southern Weed Science Society (1998)
First Place in Research Paper contest at Southern Weed Science Society (1989)
University of Illinois Bronze Tablet (top 3% GPA) (1983)
Gamma Sigma Delta (1983)
Alpha Gamma Sigma Scholar (1982, 1983)
University of Illinois Agronomy Club IPM Contest Winner (1983)

V. PROFESSIONAL ORGANIZATIONS

American Chemical Society (ACS) (Agrochemicals subdivision)
- Program Committee, Symposium Coordinator (2013)

International Union of Pure & Applied Chemistry (IUPAC)
- Pest Management & Crop Protection Theme Committee (2010)

Weed Science Society of America
- Secretary (2006-2008)
- Publications Board (2000-2006)
- Editorial Board-Weed Science (1991-1997)
  - Reviewer (1991-1993)
  - Associate Editor (1993-1997)
- Editorial Board-Weed Technology (2003 - 2007)
  - Associate Editor (2003-2007)
- Program Committee
  - Chairman, Agronomic Crops Section 2012
  - Chairman, Soil & Environmental Aspects 2002, 2015
  - Chairman, Poster Section 2003, 2007
- Awards committee
  - Chairman, Early Career Outstanding Scientist Award (2002-2009)
- Water Quality Committee (1994-1996)
- Weed Technology Outstanding Research Article subcommittee (1993)
- Moderator, Agronomic Crops section 1995
  Integrated Weed Management Section 2005

Southern Weed Science Society
- Past President (Awards and Nominations Chair), 2013-2014
- President, 2012-2013
- President Elect, Program chair 2011-2012
- Vice President, 2010-2011
- Quiz Bowl Coordinator (2006-present)
- Secretary-Treasurer (2002-2005)
- Newsletter Editor (1996-1998, 2002-2005)
- Meeting Site Selection Committee (1999-2002, Chair 2001)
- Program Committee
  - Local Arrangements Chair (2007)
  - Chairman, Posters (2003)
  - Chairman, Agronomic Crops Sections (1997)
  - Chairman, Soil & Environmental Aspects (1993, 1996, 1998)
  - Graduate Program committee (1997-1999, Chairman 1999)
- Host for SWSS annual weed science field contest (1997, 2003)
- Awards Committee (2001-2003)
  - Chairman, Outstanding Young Scientist committee (2003)
- Long Range Planning (1998-2000)
- Computer Applications Committee (1998-2001)
- Local Arrangements Committee (1995)
- Newsletter Information Committee (1994-present)
- Southern Weed Science Contest Committee (1991 to present)
- Research Paper Contest Judge (1990-1993, 1998, 2001-2004)
- Outstanding Educator Award Subcommittee (1996-1998)

S-254 Regional Research Project
- Secretary (1995)
- Vice-Chairman, Local Arrangements Chairman (1996)
- Chairman (1997)
- Chairman of Revision committee (project became S-286)

S-271 Regional Research Project
- Vice-Chairman (1998)
- Chairman (1999)

S-1011 Regional Research Project
- Chairman (2003-2008)

Tennessee Agricultural Chemicals Association
- Poster Section Chairman, 1996

Tennessee Agricultural Production Association
- Program Committee, 1999-2000
- Poster Section Chairman, 2004

National Alliance of Independent Crop Consultants
- Newsletter Information Committee, 2001
- Scholarship Committee, 2004-2007

Southern Soybean Conference Planning Committee (1996)
National Association of Colleges and Teachers of Agriculture (1995)
Alpha Zeta
Gamma Sigma Delta

VI. SERVICE ACTIVITIES

University of Tennessee at Knoxville

PSLS Department Head Search Committee Member, 2001-2002
OHLD Department Head Search Committee Member, 1999-2000
Chancellor Evaluation of Administrator's Service (subcommittee Chairman 1999)

Tennessee Agricultural Extension Service

Cavender Publications Award Selection Committee (2007-2012)
Cooperative Extension Agent Training Group (1997, 1998, 1999)
Weed Control Recommendation Committee (1991 to present)
Search Committee, Weed Science Extension Specialist (1997-1998)
Milan No-Till Field Day Contributor (1991 to present)
Presentation to 4-H visitors (1994, 1995, 1996)

Tennessee Agricultural Experiment Station

Work Plan Revision Committee (Chair) 2013
Faculty Interactions committee (sub-group leader) (2010)
UTIA Advisory council-Experiment Station representative (2002-2005)
Plant Biotech Building Steering Committee (2003-2006)
Technician Training committee (1996-1997, 2002)
Knox Station Review Committee (1998)
Ag Day Committee (1996)
Ames Plantation Water Quality Research Group (1991 to 1997)
CSRS site visit committee (1992)

Department

Search Committee, Business Manager, (Chair) (2014)
Coordinator of Research (2005-2007)
Search Committee, Faculty position (Systems Agronomy), Chair (2006-07)
Search Committee, Faculty position (Weed Science in Horticulture) (2007)
Search Committee, Faculty position (Weed Science in Turf), Chair (2003)
Search Committee, Faculty position (Weed Science in Crops), member, (2003)
PhD program review Committee, multi-department group (2002)
Search Committee, Departmental Bookkeeper, (Chair 2000)
Department Reorganizational Steering Committee, Chairman (2000)
Graduate Student Admissions and Review (1997-1998, 2003-2005)

NEWSS graduate team coach, third place (1997)
SWSS Weed Science Team Coach (1991 to present)
Subcommittee on Department Stipends (1996)
Space and Facilities Committee (1992 to 1999)
Equipment Committee (1994, chairman 1995-2000, 2008)
Greenhouse Committee (1994-2002)
Professional Societies Newsletter Submissions (1997-2012)
Undergraduate Student Club (Co-advisor, 1994-1995, Advisor 1996-1998)
Staff Seminar Committee (1992, 1993 Chairman 1993)
Varsity Visit Committee (department representative 1991, 1992, 1994, 1995)
Curriculum Committee (1992 to 1997)
    subcommittee on Statistics (1993)
    subcommittee on Environmental Science program (1993)
Graduate Student Advising: Approved to direct Ph.D. Dissertation research, 1994
    Major Professor
        9 Ph.D. students; 10 M.S. students
    Committee member
        10 Ph.D. students, 17 M.S. students
Awards Committee (2004-2010)

Community Service

President of Subdivision Homeowners Association (2001-2005)
Coach for middle school Science Olympiad Team (2004-2006)
Softball coach for middle school girls team (2006-2007)

VII. INVITED REVIEWER

Journal of Pest Management Science
North Central Region IPM grants review Panel
US EPA Scientific Advisory Panel: Ecological Risk Assessment
Journal of Agricultural and Food Chemistry
Weed Science Journal
Journal of Association of Official Analytical Chemists
Weed Technology Journal
Journal of Environmental Quality
Soil Science
Journal of Precision Agriculture
Institute of Environmental Studies Grant (Illinois)
Journal of Environmental Science and Health
Kentucky Water Resources Research Institute Grants
Critical Review in Plant Sciences
Pesticide Biochemistry and Physiology
Journal of Environmental Science and Technology

VII. INTERNATIONAL EXPERIENCE (Invited Speaker IS)

Keynote Speaker at International Weed Science Congress, Prague 2016 (IS)
Conference Speaker, FarmTech, Calgary, Alberta, CA 2016 (IS)
Keynote Speaker at Special Seminar Series on NoTill, England, November 2015 (IS)
European Conference on Precision Agriculture, Tel Aviv, Israel 2015 (IS)
3rd International Symposium on Glyphosate, Botucatu, Brazil, 2011 (IS)
International Union of Pure & Applied Chem., Melbourne, Australia, 2010 (IS)
European Weed Science Society, Santorini, Greece, 2009 (IS)
International Weed Science Congress, Vancouver, Canada, 2008 (IS)
Pan Pacific Conference on Pesticide Science, Honolulu, HA, 2008
European Weed Research Society, Hamar, Norway, 2007
International Union of Pure and Applied Chemists, Kobe, Japan, 2006
Pan Pacific Conference on Pesticide Science, Honolulu, HA, 2003
International Union of Pure and Applied Chemistry, Basel, Switzerland, 2002
Brighton Crop Protection Conference, Brighton, England, 2001
Uppsala University and Swedish Chemical Inspectorate, 1992 (IS)

IX. INTERDISCIPLINARY AND COOPERATIVE RESEARCH PROJECTS

Neonic Insecticides in Environment	Scott Stewart, Jerome Grant (EPP)
Atrazine degradation in soils	Mark Radosevich (BESS)
Glyphosate resistant weeds	Plant Sciences/Biotech faculty
Weed Control Recommendations Committee	Extension
RoundupReady Soybean profitability analysis	Agricultural Economics
Water Quality Initiative	Ag & Biosystems Engineering
Southern Regional Project S-254, S-286	Other Experiment Stations (states)
Southern Regional Project S-271, S-1011	Analytical Chemists (other states)
Site-specific farming research	Ag & Biosystems Engineering
South. Region Pesticide Impact Assessment Prog.	Other Experiment Stations (MS, GA)
Herbicide Drift Reduction Group	Ag & Biosystems Engineering

X. PROFESSIONAL DEVELOPMENT

Chemstation Software, Data management	Agilent, Atlanta 2015
LC Hardware Maintenance Workshop	Agilent, Atlanta 2013
Excel Computer Software Training	SkillPath Seminars-2005, 2013
Strategies for Different Learning Styles	University of Tennessee, 2008
Ecological Risk Assessment for Pesticides	ACS workshop, PPCPS 2008
Mass Spec Training, ACS	ACS-San Francisco 2008
Agilent GC training	Agilent, Nashville 2008
Teach Pedagogy for Generation NeXt	Mark Taylor Seminar-2007

Non-Profit Organization Management Certificate	University of Tennessee-2004
Introduction to Good Laboratory Practices	University of Tennessee-2004
Shared Leadership for a Changing Agriculture	CAST-ICL - 2003
Step Up to Leadership Seminar	Dale Carnegie - 2002
Communicating with Diplomacy/Professionalism	SkillPath Seminars - 2001
ARM Software Seminar	NAICC meeting- 2000,2007
Visiting Scholar	Texas A&M University - 1999
FrontPage for Web Design and Optimization	COMPUSA - 1998
Purdue Herbicide Mode of Action Short Course	Purdue University-1998
First Things First (Setting Priorities)	SkillPath Seminars- 1997
Handling Multiple Agendas & Objectives	SkillPath Seminars- 1996
GC-Mass Spec Utilization	ACS- Blacksburg, VA - 1994
Good Lab Procedures in Field Studies	Novartis Crop Protection- 1992
Radiation Safety Short Course	University of Georgia- 1989

XI. PUBLICATIONS

a. Refereed Articles (126)

Giacomini D. A., AM Umphres, H Nie,, TC Mueller, LE Steckel, BG Young, RC Scott, PJ Tranel. 2017. Two new PPX2 mutations associated with resistance to PPO-inhibiting herbicides in Amaranthus palmeri. Pest Manag Sci (DOI: 10.1002/ps.4581).

Cundiff GT, DB Reynolds, and TC Mueller. 2017. Evaluation of Dicamba Persistence among Various Agricultural Hose Types and Cleanout Procedures Using Soybean (Glycine max) as a Bio-Indicator Weed Sci 65:305 316

Z Ti, EN. Johnson, TC Mueller and CJ. Willenborg. 2017. Early Application of Harvest Aid Herbicides Adversely Impacts Lentil. doi:10.2134/agronj2016.07.0419

Breeden SM, JT Brosnan, TC Mueller, GK Breeden , BJ Horvath and SA Senseman. 2017 Confirmation and Control of Annual Bluegrass (Poa annua) with Resistance to Prodiamine and Glyphosate. Weed Technol 31:111-119.

Phillips, W.P., T. D. Israel, T. C. Mueller, G. R. Armel, D. R. West,J. D. Green, G. N. Rhodes. 2016. Utility of Aminocyclopyrachlor for Control of Horsenettle (Solanum carolinense) and Tall Ironweed (Vernonia gigantea) in Cool-Season Grass Pastures. Weed Technol. 30:472-477 .

Benton, E.P., J. F. Grant, T. C. Mueller, R. J. Webster, R. J. Nichols. 2016. Consequences of imidacloprid treatments for hemlock woolly adelgid on stream water quality in the southern Appalachians. Forest Ecology and management 360:152-158 .

Israel, T. D. G. E. Bates, T. C. Mueller, J. C. Waller, G. N. Rhodes. 2016. Effects of Aminocyclopyrachlor Plus Metsulfuron on Tall Fescue Yield, Forage Quality, and Ergot Alkaloid Concentration. Weed Technol. 30: 171-180 .

Elmore, M.T., J. T. Brosnan, G. R. Armel, D. A. Kopsell, M. D. Best, T. C. Mueller, J. C. Sorochan. 2016. Cytochrome P450 Inhibitors Reduce Creeping Bentgrass (Agrostis stolonifera) Tolerance to Topramezone. PLOS ONE 10:e0130947.

Crow, W. D, L. E. Steckel, T. C. Mueller, R. M. Hayes. 2016. Management of Large, Glyphosate-Resistant Palmer Amaranth (Amaranthus palmeri) in Corn. Weed Technol. 30:611-616.

Peacock, A.D., C. A. Lytle, W. E. Hart, D. C. Yoder, T. C. Mueller. 2015. Evaluation of a Soil-Based System to Dissipate Multiple Pesticides. Remediation 25:89-97.

Crow, W.D., L. E. Steckel, R. M Hayes and T. C. Mueller. 2015. Evaluation of POST-Harvest Herbicide Applications for Seed Prevention of Glyphosate-Resistant Palmer Amaranth (Amaranthus Palmeri). Weed Technol. 29:405-411.

Cardinale, V.C.B., A.C.R. Dias, T.C. Mueller, L. Abercrombie, C.N. Stewart, Jr., P.J. Christoffoleti. 2015. Shikimate accumulation, glyphosate absorption and translocation in horseweed biotypes. Planta Daninha 33: 109-118

Mueller, TC. Methods to measure Herbicide Volatility .2015. Weed Sci. 63(sp1):116-120.

Mueller T. C. and S. A. Senseman. 2015. Methods related to Herbicide Dissipation or Degradation under Field or Laboratory Conditions. Weed Sci. 63(sp1):133-139.

Mueller, T. C., B. W. Boswell, S. S. Mueller and L. E. Steckel. 2014. Dissipation of Fomesafen, Saflufenacil, Sulfentrazone and Flumioxazin from a Tennessee Soil under Field Conditions. Weed Sci 62:664-671

Vargas, J. J., J. T. Brosnan, T. C. Mueller, D. A.Kopsell, W. E. Klingeman, and G. R. Armel. 2014. Biokinetics and Efficacy of Aminocyclopyrachlor-methyl ester as Influenced by Diflufenzopyr. Weed Sci. 62:538-547.

Wiggins, M.S., B.G. Lieb, T. C. Mueller and C. L.Main. 2014. Cotton Growth, yield, and fiber quality response to irrigation and water deficit in soil of varying depth to a sand layer. Cotton Sci. 18:145-152.

Stewart, S., G. Lorenz, A. Catchot, J. Gore, D. Cook, J. Skinner, T. C. Mueller, D. Johnson, J. Zawislak, J. Barber. 2014. Potential Exposure of Pollinators to

Neonicotinoid Insecticides from the Use of Insecticide Seed Treatments in the Mid-Southern U. S. Environ Sci & Tech 48:9762-9769.

Brosnan, J.T., E. H. Reasor, J. J. Vargas, G. K Breeden, D. A. Kopsell, M. A. Cutulle, and T. C. Mueller. 2014. A Putative Prodiamine-Resistant Annual Bluegrass *(Poa annua*) Population is Controlled by Indaziflam. Weed Sci. 62:138-144.

Mueller, T.C., D. R. Wright and K. M. Remund. 2013. Effect of Formulation and Application Time of Day on Detecting Dicamba in the Air under Field Conditions. Weed Sci. 61:586-593.

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b. Abstracts (~ 240 in various regional , national and international outlets)

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ACADEMIC POSITIONS

2017 - Associate Affiliate Faculty, Colorado Water Center, Colorado State University, Fort Collins, CO

2014 - Scholar and Affiliate Faculty. Colorado State University School of Global Environmental Sustainability, Fort Collins, CO.

2012 - Emeritus Professor of Environmental Health Sciences, Colorado State University, Fort Collins, Colorado

2005 - 2012 Professor, Dept. of Environmental and Radiological Health Sciences, Colorado State University, Fort Collins, Colorado

1991 - 2005 Associate Professor (Special Appointment), Dept. of Environmental and Radiological Health Sciences, Colorado State University, Fort Collins, Colorado

1992 - 2007 Director, Environmental Health Advanced Systems Laboratory, Dept. of Environmental and Radiological Health Sciences, Colorado State University, Fort Collins, Colorado

2004- 2010 Member. University of Colorado Cancer Center. Clinical & Community Cancer Prevention and Control Program.

2003- 2010 Graduate Faculty – Special Appointment (Adjunct). Analytical Health Sciences – Epidemiology Program. University of Colorado Health Sciences Center. Denver, Colorado.

1980 -1982 Research Assistant, University of Kentucky, Department of Agricultural Engineering, Lexington, Kentucky

1976 -1979 Research Specialist, University of Kentucky, Department of Agricultural Engineering, Lexington, Kentucky

OTHER POSITIONS

2012- Principal, JRN Environmental Health Sciences, North Bethesda, MD

1982 - 1991 Principal, Technical Consulting Services, Inc., Lexington, Kentucky

1979 – 1982 Staff Environmental Scientist – Appalachian Research and Defense Fund, Legal Services Corporation, Lexington, KY

1979 - 1980 City Engineer and Environmental Consultant, City of Danville, Kentucky

1974 - 1976 Staff Environmental Engineer, G. Reynolds Watkins Engineers, Lexington, KY

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Books/Chapters/Monographs:

Raynal, J.A., **Nuckols, J.R**., Reyes, R., and Ward, M. (editors). 2000. Environmental

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Nuckols, J.R., Reich, R., Beseler, C., Chiou, C.R., and Windesheim, E. 1996. Development of a geographic information system for communities surrounding the Rocky Mountain Arsenal. Chapter 5, pp. 51-67 in Reproductive, Neurobehavioral, and Other Disorders in Communities Surrounding the Rocky Mountain Arsenal (Reif, J.S., editor). Agency for Toxic Substances and Disease Registry. USDHHS. Atlanta, GA.

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Nuckols, JR. 2017. Dark Clouds and Silver Linings: Climate Change and Environmental Health Case Study: Mexico. In Facing the Threat: Climate Change. Proceedings of the Second International Conference on Hydrometeorological Risks and Climate Change. Cholula November 11-13, 2015. UNESCO/UDLAP. Universidad de las Americas Puebla. Mexico.

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Nuckols J.R., Riggs P.D., Maxwell S.M., Miller R.S., Ward M.H. 2002. A Geographic information system (GIS)-based exposure metric for estimating nitrate in drinking water supplies. Published Abstract. Epidemiology 13(4) 208.

Ward, M.H., **Nuckols J.R**., Giglierano J, Wolter C, Miller R.S., Colt J.S., Camann D, Hartge P. 2002. Proximity to Crops and Residential Exposure to Agricultural Pesticides in Iowa. Published Abstract. Epidemiology 13(4) 208.

Lynberg, M., Ashley, D., Mendola, P., **Nuckols, J.R**., Cantor, K., Blount, B., Singer, P., Wilkes, C., Backer, L., and Langlois, P. 2002. An Integrated Research Agenda to Evaluate Tap Water Disinfection Byproducts and Human Health. Epidemiology 13(4).

Example Hydrology / Water Quality Consultant Reports (1982-1989):

Over 50 technical reports during the period 1982-1989 while in private practice as a consultant hydrologist. Examples of these publications:

Nuckols J.R, J. Thrailkill. 1989, Report on preliminary investigation: Recommendation for remedial action concerning incidence of environmental contamination at the T. Simmons property, Euclid and Oldham Avenues, Lexington, Kentucky.

Nuckols, .J.R. 1989. Summary of findings, hydrologic investigation of the proposed construction plans for Harrods Creek Marina, Jefferson County, Kentucky.

Nuckols, J,R. 1989, Preliminary report: Hydrologic findings regarding potential contamination of the Lloyd Story Spring by the Carpenter landfill, Fleming County, Kentucky.

Nuckols J.R., H, Spencer, S. Porter, B. Olup, S. Hubbs, J. Smith. 1988. Environmental impact assessment of extraction of potential coal reserve in the Cannon Creek Lake watershed, Bell County, Kentucky, by surface mining. Chemodynamics, Inc. Louisville, KY and Technical Consulting Services, Inc. Lexington, KY.

Nuckols, J.R, 1987. Hydrologic impact study: Nally and Hamilton Enterprises, Inc. Artemus Coal Tipple, Knox County, KY.

Nuckols J.R., J. Thrailkill. 1987. Hydrologic evaluation of storm water drainage characteristics in the area of the Crabtree property at Paris Pike, Lexington, KY.

Nuckols, J.R. 1986. Hydrologic investigation of hydrocarbon contamination in a private water supply well.

Nuckols, J.R. 1986. Off site hydrologic impact analysis: Champions Golf Course and residential development, Jessamine County, KY.

Nuckols, J.R., T. Thompson, E. Morford. 1985. Hydrologic design of Lexington Green Development in Lexington, KY.

Nuckols, J.R. 1985. Hydrologic Impact Assessment: Ikerd-Bandy coal mining

operations, White Oak, Kentucky.

Nuckols, J.R. 1985. Field investigation report: Impact assessment of Eastern Coal Company permit 698-8029 tipple slurry injection on Pond Creek Aquifer and surface waters.

Nuckols, J.R. 1983. Research report: Water quality assessment at Big Brushy Creek watershed above highway 386 in Nicholas County, KY.

Nuckols, J,R., N. Crawford. 1983. Warren Meadows Golf Club: Water supply report.

CONTRACTS & GRANTS

Funded Projects as PI (some project periods approximated; Total project cost shown):

2012-2014 **Consulting Agreement. Environmental and Cancer Unit, Leon Brevard Cancer Research Hospital, Lyon FR**. Appox $100,000, renewable. Co-Investigator. (*PROJECTS LISTED IN NEXT SECTION*)

2011- 2012 **PHASE I: Inhalation and Dermal Exposure to Trihalomethanes during /after Showering**. CDC Foundation. $10,000. Principal Investigator.

2008- 2011 **Intergovernmental Personnel Agreement. Division of International Epidemiology and Population Studies. Fogary International Centre. U.S. National Institutes of Health.** Approx $360,000 direct. Principal Investigator. (*PROJECTS LISTED IN NEXT SECTION*)

2002- 2010 **Intergovernmental Personnel Agreement. Occupational and Environmental Epidemiology Branch. U.S. National Cancer Institute.** Approx $1,040,000 direct. Principal Investigator. (*PROJECTS LISTED IN NEXT SECTION*)

2001 - 2008 **Geographic-based Exposure Assessment of Agricultural Chemicals.** DHHS.NIH.NCI. RO1CA92683-01. $978,000. Principal Investigator.

2003 - 2005 **Human Controlled Experiment Investigations – Task Order 25 [Development of Exposure Metric for the National Birth Defects Prevention Study]**. Battelle Memorial Institute. PO 182124 Mod 02. $137,000. Principal Investigator.

2002 - 2003 **Linking Geographic Water Utility Data with Study Participants from the National Birth Defects Prevention Study.** American Water Works Assn. $175,000. Principal Investigator.

1999 - 2001 **Geographic Information System for Agricultural Chemical Exposure.** NCI/NIH $226,666. Principal Investigator.

2000 - 2002 **Development of Methods for Predicting Trihalomethane and Haloacetic Acid Concentrations in Exposure Assessment Studies.** AWWARF/USEPA. $249,990. Principal Investigator.

1999 **Feasibility Study: Exposure Assessment to Agricultural Chemicals and Childhood Leukemia.** California Dept Health Services. $25,000. Principal Investigator.

1997 - 2000 **Feasibility Study: Exposure Assessment – Birth Defects and Disinfection Byproducts.** CDC/NCEH. $410,000. Principal Investigator.

1995 - 2000 **Core C: Spatial Analysis and Statistics: Integrated Research on Hazardous Chemical Mixtures.** $471,250. Co-Principal Investigator. In the Center Grant "Integrated Research on Hazardous Chemical Mixtures", R.S.H.Yang, PI). NIEHS.

1998 **International Symposium: Environmental Engineering and Health Sciences**. NIEHS, NCI,ATSDR. $45,000.

1997 - 2000 **Agricultural Pesticides and Childhood Cancer.** NCI. $150,000. Principal Investigator.

1998 - 2000 **Estimating Exposure to Nitrate and Pesticides in Drinking Water in the Platte River Valley.** NCI/Westat. $110,000. Principal Investigator.

1996 **Summit County GIS Project – Environmental Health**. Summit County Health Department, Summit County, Colorado Water Quality Commission. $27,483. Principal Investigator.

Funded Projects as CoPI / Co-Investigator (Approximate dates):

2015-16 **Development and implementation of a consortium to assess the role of common freeliving amoebae in environmental persistence and facilitation of pathogenic organisms.** Colorado State University, Vice-President for Research. One Health Project Award. (Mary Jackson, PI. $100,000). Role: consultant – environmental health assessment.

1997 **Epidemiological Research Design for DBPs: Identifying Geographical Areas for Possible Future Epidemiological Studies**. (R. Raucher, Stratus Consulting Inc. Boulder, CO, PI). Subcontract. $60,145

1994 - 96 **Evaluation of priority health conditions at the Rocky Mountain Arsenal.** J. Reif, ERHS, Colorado State University PI. ATSDR. $150,000

1994 –96 **Colorado Farm Family Health and Hazard Surveillance project.** Grant Number U04/CCU806060. L. Stallones, PI. National Institute of Occupational Safety and Health, Centers for Disease Control and Prevention. $150,000

1992 - 94 **Pilot Study to Evaluate the Relationship between Birth Weight and Exposure to Byproducts of Disinfections.** (J. Reif, PI. USEPA. $332,629)

PROJECTS: PERSONNEL AGREEMENTS – OTHER RESEARCH INSTITUTIONS

2017 **Residential proximity to industrial combustion facilities and cancer risk in the NIH-AARP Diet and Health Study** (Rena R. Jones, NCI-OEEB, Bethesda, MD, PI). **ROLE:** ***Consultant, application of environmental and spatial sciences in exposure assessment.***

2013 **Determinants of dioxins and furans in carpet dust** (Nicole Deziel, NCI-OEEB, Bethesda, MD, PI) Intramural NCI Competitive Grant. $38,850. **ROLE:** ***Consultant, application of environmental and spatial sciences in exposure assessment***

2012 **Enhanced individualized exposure assessment and omic profiling for high priority environmental exposures in Europe.** (P. Vineis, Imperial College, London, PI). European exposome initiative - FP7-ENV-2012. Approx $9,000,000. **ROLE:** ***Consultant, Centre for Environmental Epidemilogical Research (CREAL), Barcelona, FR. (M. Kogevinas, PI); application of environmental and spatial sciences in exposure assessment.***

Funded Projects under Consulting Agreement – CEU-CLB, Lyon FR:

2012-14 **SIGEXPO - pilot study – pesticides exposure for the TESTES Epidemiological Study** (Remi Beranger, IARC, CEU-CLB, PI). Funding Source and Budget Details requested. **ROLE:** ***Senior Research Scientist; Mentor – Pre- and Post-Doctoral Fellows; Data analysis ; Technical Supervisor – GIS support***

2013-14 **TESTES Epidemiological Study** (Beatrice Fervers, Center Leon Brevard, PI). Funding Source and Budget Details requested. **ROLE:** ***Senior Research Scientist; Co-Lead Exposure Assessment study design, implementation, and data analysis; Mentor – Pre- and Post-Doctoral Fellows; Technical Supervisor – GIS support***

2014 **GEO3N, Dioxin Exposure Assessment in the E3N/4N French Cohort Study** (Laure Dossus, INSERM, Université Paris-Sud, PI). Funding Source and Budget Details requested. **ROLE:** ***Senior Research Scientist; Technical advisor - Exposure Metric Development and GIS support***

Funded Projects under Intergovernmental Personnel Agreement – DEEPP-FIC-NIH, Bethesda, MD

2009-2011 Malnutrition Enteric Disease Network (Mal-ED Network). Gates Foundation. (Mark Miller, FIC, and Michael Gottlieb, NIHF, co-PIs); Modeling Component @ $400,000

Funded Projects under Intergovernmental Personnel Agreement – OEEB-NCI-NIH, Bethesda, MD:

2002-2010 In addition to providing general consultation in the area of exposure assessment for environmental epidemiology under the terms of this IPA, Dr. Nuckols was a key member of research teams on the following intramural research projects:

New England Health and Environment Study (D. Silverman and D. Baris, Co-PIs) Exposure assessment – arsenic and disinfection byproducts. @$2,000,000. **ROLE:** ***Senior Research Scientist; Co-Lead Exposure Assessment design, implementation, and data analysis; Mentor – Pre- and Post-Doctoral Fellows; Technical Supervisor – GIS support contract.***

Childhood Leukemia Study (M.H. Ward, PI). Exposure assessment – agricultural pesticides. @$1,000,000. **ROLE:** ***Senior Research Scientist; Co-Lead Exposure Assessment design, implementation, and data analysis; Mentor – Pre- and Post-Doctoral Fellows; Technical Supervisor – GIS support contract.***

Levels of Selected Potentially Carcinogenic Drinking Water Disinfection Byproducts in Whole Blood after Showering: The Effect of Genetic Polymorphisms.

(K.Cantor, L. Backer (CDC) Co-PIs). Exposure assessment – disinfection byproducts. @$200,000. **ROLE:** ***Senior Research Scientist; NCI Co-Lead Study Design, Implementation, and Data Analysis.***

Non-Hodgkin's Lymphoma-SEER Study. (P. Hartge, PI). Exposure assessment – agricultural pesticides and industrial emissions. @$250,000. **ROLE:** ***Senior Research Scientist; Co-Lead Exposure Assessment design, implementation, and data analysis; Mentor – Pre- and Post-Doctoral Fellows; Technical Supervisor – GIS support contract.***

Platte River Nitrate Study (MH Ward, PI). Exposure assessment – nitrates in drinking water supply @$200,000. **ROLE:** ***Senior Research Scientist; Co-Lead Exposure Assessment design, implementation, and data analysis; Mentor – Pre- and Post-Doctoral Fellows; Technical Supervisor – GIS support contract.***

Amish Cohort Study (MH Ward, PI). Exposure assessment – nitrates in drinking water supply @$100,000. **ROLE:** ***Senior Research Scientist; Co-Lead Exposure Assessment design, implementation, and data analysis; Mentor – Pre- and Post-Doctoral Fellows; Technical Supervisor – GIS support contract.***

PROJECT PROPOSALS RECENTLY SUBMITTED OR CURRENTLY IN REVIEW

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

Memberships in professional societies:

International Society for Exposure Analysis

International Society for Environmental Epidemiology

International Association of Hydrological Sciences

American Society of Civil Engineers (inactive)

Grant review panels (last 7 years):

2016. US HHS National Cancer Institute. Fellowship Review Panel. 11-12 July. Bethesda, MD.

2012. Agence Nationale de la Recherche. Paris, France. Appel à projet Contaminants et Environnements : Santé, Adaptabilité, Comportements et Usages

2012. European Research Council Executive Agency, Brussels. FP7 "Ideas" Specific Programme. Expert registration number: 31612

2012. National Institute of Environmental Health Sciences. U.S. National Institutes of Health. Research Triangle Park, NC. R01 and P01 Review Committee for the Centers for Oceans and Human Health and Oceans, Great Lakes and Human Health

2011. U.S. Natl Institutes of Health. Neurological, Aging and Musculoskeletal Epidemiology, Population Sciences and Epidemiology (PSE) Integrated Review Group. Center for Scientific Review. Washington, DC.

2010. Fogarty International Center. International Training and Research Program. Also 2005.

2008. U.S. Centers for Disease Control and Prevention. Dose Reconstruction.

2007. U.S. National Institutes of Health. Biostatistical Methods and Research Design.

2006. Iowa Center for Health Effects of Environ Contamination. Seed Grant Program

2005. Nova Scotia Health Research Foundation. 2005. CDC Special Emphasis Panel.

2005. CDC Environmental Health Tracking Program.

Manuscript refereeing:

Applied Geochemistry

Archives of Environ Contamin. Toxicology

Exposure Analysis and Environmental Epidemiology

Environmental Health

Environmental Health Perspective

Environmental Research

Environmental Science and Technology

Environmental Technology

International J of Environmental Health Research

International Journal of Health Geographics

Infectious Disease and Poverty

Journal of Environ Mgmt

Journal of Environ Medicine

Journal of Environ Quality

Journal of Human and Ecological Risk Assessment

Journal of Spatial and Spatio-temporal Epidemiology

Toxicological Sciences

Water Research

Editorial Boards

Spatial and Spatio-temporal Epidemiology. Elsevier Publishing Co. Amsterdam, The Netherlands.

Symposia/Workshops (Since 2004)

2015 Chair/Organizer. 2015. Public health risk from fugitive pesticide emissions associated with domestic and agricultural use. International Society for Environmental Epidemiology annual meeting. 3August 2015. Sao Paolo, Brazil.

2013 Co-chair, Pesticides. Conference on Environment and Health. 23 August, Basel, Switzerland.

2011 Co-chair, Facing (and overcoming) exposure assessment challenges in studies on water pollution and cancer. Intl Soc Environ Epidemiology. 16 September. Barcelona, Spain.

2010 Convener and Facilitator. Forum - Integrating Environmental Sciences and Epidemiology in Education, Research, and Training of Public Health Practitioners. Joint meeting: Innt Soc Environ Epi / Intl Soc Expos Sci. 31 August. Seoul, Korea.

2010 Co-Chair. Symposium - Exposure and Susceptibility Biomarkers and their Potential Application in Epidemiological Studies of Disinfection Byproducts. Joint meeting: Innt Soc Environ Epi / Intl Soc Expos Sci. 31 August. Seoul, Korea.

2010 Invited Participant. Space-Time Technology for Reconstructing Exposure in Cancer Epidemiology Studies. 1 June. Biomedware, Inc. Ann Arbor, MI.

2009 Ad-hoc Committee. Global Water Initiative. Colorado Water Resources Research Institute. Colorado State University. Fort Collins, CO.

2009 Invited Discussant. Fate and Transport Modeling of DBPs. Gordon Conference on Drinking Water Disinfection By-Products. Mount Holyoke College,South Hadley, Massachusetts. August 13-18.

2008-9 Chair, International Advisory Committee, International Conference on Water, Environment and Health Sciences: The Challenges Of The Climate Change, 13-17 April, 2009. Puebla, Mexico.

2008-9 Program Advisory Committee, International Society of Environmental Epidemiologists. 2009 Annual Conference. Dublin, Ireland.

2007-8 Steering committee. Global Water Colloquium. Colorado State University.

2006 Session Chair, Invited Participant. First Gordon Conference on Drinking Water Disinfection By- Products. Mount Holyoke College, South Hadley, Massachusetts. August 10-14.

2006 Invited workshop/course. GIS and other tools for exposure assessment in environmental epidemiology. American College of Epidemiology Annual Meeting. April 2006. Seattle, WA.

2004-5 Planning Committee/Session Chair. Workshop on Optimizing the Design and Interpretation of Epidemiologic Studies to Consider Alternative Disinfectants of Drinking Water. June 2-3, 2005, Raleigh, NC. USEPA. Health Effects and Environment Research Laboratory. Research Triangle Park, NC. Dr. Pauline Mendola, PI.

Invited lectures (Since 2003)

2017 Exposure assessment of byproducts from water disinfection practices in health risk analysis. Gordon Research Conference on Drinking Water Disinfection Byproducts. South Hadley, MA. (Scheduled)

2015 Dark clouds and silver linings: Climate Change and Environmental Health. Keynote speaker. Second International Conference of Hydrometeorological Risks and Climate Change (ICHRCC-2015), UDLAP, Puebla, Mexico, November 11-13.

2013 Integrating geospatial and environmental sciences into exposure assessment for epidemiological risk analysis. INSERM E-tools for Epidemiology Workshop. Cite' Internationale Universitaire, Paris. (21 May).

2013 Pesticides dans l'air: Evaluation de l'exposition et santé environnementale. Rhone-Alps Environment Conference. Lyon, France.

2012 Tools and Strategies for Use of Geospatial and Environmental Science Data in Exposure Assessment. Université Rennes I, Campus de Beaulieu, Rennes, France.

2012 Methods for the study of non-occupational exposure to agricultural chemical use in highly integrated residential and agricultural production landscape. University of Lyon. Lyon, France.

2012 Exposure assessment of byproducts from water disinfection practices in health risk analysis. Gordon Research Conference on Drinking Water Disinfection Byproducts. August 5-10. South Hadley, MA.

2012 Application of Environmental and Geospatial Sciences in Epidemiology Studies concerning Waterborne Contaminants. Workshop: Setting the future for water and health research. May 21-23. Center for Environmental Epidemiological Research. Barcelona.

2011 Integrating geospatial and environmental sciences in public health risk analysis. George Washington University School of Public Health and Health Services. 6 May. Washington, DC.

2010 Geospatial and Environmental Sciences: Applications in Environmental Health Invited Presentation. AAAS Fellows Geospatial "Affinity Group". 7 April. Washington, DC.

2010 "Linking Measures of Exposure Susceptibility to Epidemiological Studies of DBPs". In Exposure and Susceptibility Biomarkers and their Potential Application in Epidemiological Studies of Disinfection Byproducts. Joint meeting ISEE/ISES. 31

August. Seoul, Korea.

2009 Basic GIS for Health Science Applications. Fogarty International Center. Division of International Training and Research (DITR). Bethesda, Maryland. This is a repeated lecture given at network meetings of principal investigators for the extramural research program in DITR.

2009 Health, Epidemiology, Water Issues. International Colloquium on Challenges in Global Environmental Sustainability. Colorado State University. September 9-11, 2009.

2009 NRC Report on Contaminated Drinking Water at Camp Lejeune. Hearing on VA/DOD Response to Certain Military Exposures. United States Senate Committee On Veterans' Affairs. October 8, 2009. Washington DC.

2009 GIS as a Research Tool in Environmental Health Assessment. Universidade Federal Do Ceara. Unidade De Pesquisas Clinicas & Instituto De Biomedicina. Fortaleza, Brazil. 16 December 2009.

2008 GIS as an Exposure Tool in Health Risk Analysis. February 29, Westat Inc., Rockville, MD

2008 Status of GIS-based metric for exposure assessment concerning fugitive pesticides from cultivated agriculture. Imperial College, June 8, London, England.

2008 NCI California Childhood Study (Ward, Nuckols). Northern California CLS Project Meeting. 5 August. California University-Berkeley.

2008 Exposure Assessment for Environmental Epidemiology: Integrating Earth and Health Sciences. Fogarty International Center. Division of International Training and Research. October 10, Bethesda MD

2008 Symposium on "Reconstructing Lifetime Exposure to Low to Moderate Concentrations of Arsenic in Drinking Water in Case-Control Studies in USA and Europe"; ISEE/ISEA, October 13, Pasadena, CA

2007 GIS as a tool or exposure assessment in environmental epidemiology. Symposium on Geospatial Technologies and Public Health. Texas A&M University. College Station, Texas. November 17, 2007.

2007 A GIS-based exposure metric for agricultural pesticide occurrence in homes near crop fields. International Society of Environmental Epidemiologists. Symposium on Spatial Epidemiology (Lars Jarup, chair). Mexico City, September 7, 2007.

2007 A GIS-based exposure metric for agricultural pesticide occurrence in homes near crop fields. Brazilian Health Ministry. Oswaldo Cruz Foundation. Rio de Janeiro. September 28, 2007.

2007 Using GIS for exposure assessment in environmental epidemiology studies of cancer (presented by M. Ward, OEEB). Society for Epidemiological Research. Boston. June 19-22, 2007.

2007 Determinants of blood trihalomethane levels after showering. (Presented by K. Cantor, OEEB). International Society of Environmental Epidemiologists. Mexico City. September 5-9, 2007.

2005 Institut national de santé publique du Québec. "Considerations in exposure assessment for epidemiological studies of trihalomethanes and other disinfection by-products". November 28. Quebec, Canada.

2005 Preventive Medicine and Biometrics Departmental Seminar Series. "Exposure Assessment for Environmental Epidemiology: Integrating Earth and Health Sciences. " Colorado University Health Sciences Center, School of Medicine. January 24. Denver, Colorado.

2005 GIS in Public Health and Medicine. "Exposure Assessment for Environmental Epidemiology: Integrating Earth and Health Sciences. " Bay Area Automated Mapping Association. Goldman School of Public Policy. School of Public Health. University California – Berkeley. January 27. Berkeley, California.

2005 GIS and Public Health. Using GIS in Exposure Assessment for Environmental Epidemiology. Center for Public Health Preparedness, State University of New York at Albany. April 19. Albany, NY.

2003. Symposium on Spatial Epidemiology. International Society for Environmental Epidemiology annual meeting. Perth, Australia, September 25, 2003.

2003. Keynote Presentation. International Conference on GIS in Environmental Health. Ostersund, Sweden. March 30, 2003. Sponsor: EUROHEIS Project, Department of Epidemiology and Public Health Imperial College of Science Technology and Medicine London United Kingdom

Other activities/accomplishments

2017 Finalist. American Association for the Advancement of Sciences Revelle Fellowship.

2010-12 University Consortium on Water, Sanitation and Hygiene. Charter member, steering committee.

2007-09 National Academy of Sciences. National Research Committee on Contaminated Drinking Water at Camp Lejeune. Chair – Exposure Assessment Working Group.

2005 Advisor. Development of Methods for Tracking Exposures to Contaminants in Drinking Water.: A Collaborative Effort of the EPHTN programs of CA, NJ, NM, WA, and WI. Environment and Public Health Tracking Network Program. Centers for Disease Control. Contract No. Atlanta, GA.

2003 Planning Workgroup. Environmental Public Health Tracking Program. New York State Department of Health.

2002 Co-nominee. Charles C. Shepard Science Award. Centers for Disease Control and Prevention and Agency for Toxic Substances and Disease Registry.

1999 Co-Chair/Co-author. Expert Workshop on Drinking Water Research Needs. American Water Works Assn. Research Foundation and USEPA.

1998-2000 Advisor. Cancer Surveillance Improvement Initiative, New York State Department of Health.

1997 American Society of Civil Engineers. Public Health Committee, Environmental Engineering Division

1996-1998 Co-Chair, Organizing and International Advisory Committees. International Symposium on Environmental Engineering and Health Sciences. University of the Americas. Cholula, Puebla, Mexico. Oct 26-30.

1995-2000	Advisory Committee. Long Island Breast Cancer Study Project. National Cancer Institute. *Ad Hoc* Committee on GIS (1995-97). Long Island Breast Cancer Study Project. National Cancer Institute.
1992-1997	Board of Directors, Larimer County Farm Bureau. Fort Collins, Colorado.
1992-1995	Colorado Task Force on Non-point Source Pollution. Colorado Department of Health. Denver, Colorado.
1990-1991	International Technical Committee. International Symposium on Hydrology and Water Resources Education and Training. April 15-19, 1991. Universidad Autonoma de Chihuahua. Chihuahua, Mexico.
1988-1992	Steering Committee on Hydrology Portion of the Settlement Agreement between National Wildlife Federation vs. Kentucky; U.S. District Court Case No. 86-99. Admn: OSM Field Operations, Pittsburg.
1988-1989	Lexington-Fayette County, Title III, Emergency Response Local Planning Committee, Federal Title III Community Right to Know Act of 1986.
1986-1989	Mayor's Committee on Water Quality and Quantity, Lexington-Fayette Urban County Government, Kentucky
1979-1983	Board of Directors, Kentucky New Farm Coalition
1980	Conservationist of the Year, Kentucky Conservation Comm., Frankfort, KY
1980-1982	Governor's Task Force on Oil Shale Mining in Kentucky
1980-1981	Vice Chair, Kentucky Water Quality Advisory Committee, Natural Resources and Environmental Protection Cabinet.
1979-1980	Governor's Task Force on State Primacy for Coal Mining Regulations in Kentucky.
1979	Gamma Sigma Delta, University of Kentucky, Lexington
1979	Alpha Epsilon, University of Kentucky, Lexington, KY
1973-1974	U.S. Environmental Protection Agency Fellowship, Northwestern University, Evanston, IL.
1969-1973	S&H Merchants Foundation Scholarship, Texas A&I University, Kingsville, TX

Last revised: 25 October 2016 (partial update)

CURRICULUM VITAE

GBEKELOLUWA B. OGUNTIMEIN, Ph.D, P.E., BCEE.

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Morgan State University
5200 Perring Parkway
Baltimore, Maryland 21251
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Email: gbeke.oguntimein@morgan.edu

EDUCATION:

B.S., Chemical Engineering, May 1974, Iowa State University, Ames, Iowa.

Ph.D., Chemical Engineering, May 1979, Iowa State University, Ames, Iowa.

POST-DOCTORAL TRAINING:

1983-1984 Laboratorie de Biotechnologie, Institut NationalePolitechnique de Lorraine, Nancy, France.

1987 International Facility for Food Irradiation, Wageningen, Netherlands.

PROFESSIONAL EXPERIENCE:

Industrial:

1979-1980 Process Development Engineer, American Maize Product Company, Hammond, Indiana, USA.

Consulting:

1987- 1988 Technical Course Coordinator of Training Course, International Institute for Tropical Agriculture (IITA), Ibadan, Oyo-State, Nigeria.

1990 – 1995 Consultant (Industrial Feasibility studies) Dolyom Associates, Bodija Ibadan Nigeria

2008 Summer Consultant (Enzyme characterization) Zymetis Inc., College Park, Maryland

Government:

2001-2002 Visiting Professor, Environmental Protection Agency (EPA), Intergovernmental Policy Act (IPA) at CEPPO & TIO.

Teaching:

1978-1979 Instructor, Department of Chemical Engineering, Iowa State University, Ames, Iowa, USA.

1980 -1985 Lecturer I, Department of Food Technology University of Ibadan, Ibadan,

Nigeria.

1985-1990 Senior Lecturer, Department of Food Technology, University of Ibadan, Ibadan, Nigeria.

1990 -1995 Associate Professor, Department of Food Technology, University of Ibadan, Ibadan, Nigeria.

1997- Date Associate Professor, Department of Civil Engineering, Morgan State University, and Baltimore, Maryland. USA.

2001- 2002 Adjunct Professor, Graduate Department of Technology Management, University of Maryland University College, Adelphi, Maryland. USA.

2007- 2009 Adjunct Professor, Department of Chemical and Biochemical Engineering, University of Maryland Baltimore County, Catonsville, Maryland, USA.

2014 – Date Adjunct Online Professor Thomas Edison State University Trenton New Jersey, USA

Research:

1983-1984 CIES Research Scientist, Laboratorie de Biotechnologie, Institut Nationale Politechnique de Lorraine, Nancy, France.

1989 -1991 NSERC/CIDA Research Fellow, Industrial Biotechnology Center, University of Waterloo, Ontario, Canada.

1991 -1992 Alexander Von Humboldt Fellow, Enzyme Technolgy Department, Ges fur Biotechnologische Forschung mbH, Braunschweig, Germany.

1995-1997 University Research Fellow, Department of Chemical Engineering, Iowa State University, Ames, Iowa.

2010 Summer NASA Science & Technology Initiative (NSTI) Fellow, NASA Ames Research Center (ARC), Moffett Field, California.

2017 Summer Visiting Faculty Program Oak Ridge National Laboratory (ORNL) Oak Ridge Tennessee.

MAJOR PROFESSIONAL SOCIETIES:

- American Institute of Chemical Engineers (AIChE)
- American Society for Engineering Education (ASEE)
- American Chemical Society (ACS)
- International Society for Environmental Biotechnology (ISEB)
- New York Academy of Sciences (NYAS)
- Nigerian Society of Chemical Engineers (NSChE)
- Science Association of Nigeria (SAN)
- Biotechnology Society of Nigeria (BSN)

- International Society of African Scientists (ISAS)
- National Technical Association (NTA)
- Member of Council of Registered Engineers of Nigeria (COREN # 3006)
- Maryland Registered Professional Engineer (PE # 0030770)
- Board Certified Environmental Engineer (Certification # 13-20032)

HONORS /AWARDS

- Federal Government of Nigeria Scholarship 1970
- Tau Beta Pi 1973
- Phi Kappa Phi 1973
- Omega Chi Epsilon 1973
- Phi Lambda Epsilon 1973
- Iowa State University Graduate Scholarship award 1975
- CIES Postdoctoral Research Fellowship (France) 1984
- National Science Engineering Research Council of Canada Fellowship 1988
- Alexander von Humboldt Research Fellowship AVH Foundation Germany 1990
- New York Academy of Sciences 2000

Other Professional Activities

- Chairman, Scholarship Committee of Maryland Chapter AIChE, 2001 -Date
- Faculty Adviser, American Society of Civil Engineers MSU Student Club, 1999 - 2001
- Member of Review Team of Department of Chemical Engineering, University of West Indies St Augustine Campus, November 2001.
- Member, Education Committee of NSF Collaborative Large–Scale Engineering Analysis Network for Environmental Research (CLEANER).
- External Examiner, Food Technology Programs Department of Chemical Engineering. University of West Indies, St Augustine, Trinidad and Tobago 2007 - 2008; 2009 - 2012.
- Director, (South East) National Technical Association 2014 -2015

University Service

- Acting Head of Industrial Coordinating unit, Faculty of Technology, University of Ibadan, 1981-1983
- University of Ibadan Senate *(member)* 1987-1988
- University of Ibadan Athletic Committee *(member)* 1987-1988
- University of Ibadan Works Committee *(member)* 1986 -1987
- Assistant – Dean, Faculty of Technology University of Ibadan 1988- 1990
- Morgan State University Council *(member)* 2000 -2004
- Morgan State University Council Athletic Committee *(member)* 2000 –2004
- MSU Task Group on International Development and Research

(TGIDR) *(Member)* 2002

Departmental Service

- Committee on ABET Accreditation *(member)* 2002 - Date
- Committee on Research, Development and Entrepreneurial Activities *(Chair)* 2002 - Date

Scholarship, Fellowship& Proposal Review Panel

- EPA Greater Research Opportunity (GRO) Fellowship Program (2013 -2015)
- NSF Graduate Research Fellowship Program(2014,2015)
- Tau Beta Pi Fellowship program (2015)
- AAEES E3S Competition Projects February 2017
- NSF Proposal Panel Review (CBET P171251 2017)
- NSF Reverse Site Visit (RSV) (EPSCoR PV 170508/ 2017)

Editing and Journal Review

- Advanced Research in Textile Engineering (Member Editorial Board 2016)
- Environmental Progress & Sustainable Energy
- Fibers and Polymers
- International Journal of Climate Change: Impact and Responses
- Journal of the Association of Professional Engineers of Trinidad & Tobago
- Journal Environmental Chemical Engineering (Member Editorial Board 2011-2013)
- West Indian Journal of Engineering

TEACHING:

Years at Morgan State University: 20

Years at Thomas Edison State University 4 (Online)

Years at University of Maryland University college 2

Years at University of Maryland Baltimore County 1

Years at the University of Ibadan, Ibadan Nigeria: 15

Years at Iowa State University: 2

Courses taught at Morgan State University

Undergraduate

- Introduction to Civil Engineering-CEGR 105
- Environmental Engineering I and Laboratory- CEGR 328
- Civil Engineering Project Management- CEGR 400

- Biological Wastewater Treatment- CEGR 458
- Water Supply Engineering- CEGR 459
- Hazardous Waste Management- CEGR 498
- Senior Design Proposal- CEGR 490
- Senior Project- CEGR 491

Graduate

- Environmental Chemistry and Microbiology- CEGR 513
- Environmental Impact and Risk Assessment- CEGR 514
- Advanced Project Management- IEGR 512
- Biological Process in Environmental Engineering- CEGR 616
- Advanced Biochemical Process Engineering- CEGR 617
- Biological process in Environmental Engineering CEGR 616
- Advanced Biochemical Process Engineering CEGR 617
- **Graduate course under development** CEGR 799 **Sustainable Energy**

Course taught at University of Maryland University College

Graduate

- Project Management- TMAN 640

Course taught at University of Maryland Baltimore County

Undergraduate

- Process Engineering Economics and Design- ENCH 444

Courses taught at the University of Ibadan, Ibadan, Nigeria

Undergraduate

- Introduction to Food Engineering-FT 301
- Units Operation in Food Engineering- FT 303
- Biochemical Engineering- FT 404
- Plant Design in Food Engineering- FT 405

Graduate

- Advanced Unit Operation in Food Engineering- FT 503
- Advanced Biochemical Engineering- FT 504
- Advanced Plant Design in Food Engineering- FT 505

Courses taught at Iowa State University, Ames Iowa

Undergraduate

- Material and Energy Balances- Ch. E. 210
- Biochemical Engineering-Ch. E. 415

- Process and Plant Design- Ch. E. 430

Theses/ Dissertations Supervised

M.Sc. Level:

- **Nwabueze, T.U.** 1982. Production of single cell protein orange peels.
- **Obisanya, M.O.** 1983. Production of wine from mango (*Magnifera indica* L) using yeast strains isolated from palmwine.
- **Babatunde, O.M.** 1985. Production of single cell protein form orange (*Citrus sinensis*) waste using *Saccharomyces cerevisiae*
- **Jack, P.T.** 1986. Submerged and semisolid fermentation systems for production of single cell protein (SCP) from orange (*Citrus sinensis*) waste by *Sacharomyces cerevisiae* and *Candida utilis*.
- **Osunsami, A.T.** 1987. Investigation of optimum conditions for the isolation and modification of cassava starch.
- **Nnadi, I.C.** 1987. Microbial enzyme (α-amylase) production Arobiole, O.M. 1988. Optimization studies on amylase production from *Bacillus cereus*.
- **Eke O.** 1990. Partial purification and characterization of *Bacillus cereus* BC19 amylase.

Ph.D. Level:

- **Ibiama, E.A.** 1987. Studies on the traditional cheese making process and a milk coagulant from Sodom apple (*Calotropis procera*) extract.

Masters Level:

- **Mwangi, G.M.** 2010. Performance of activated Carbon on the treatment of wastewater from a bioethanol production process.

Undergraduate Students Mentored

- **Shellon Alexander**; Civil Engineering major, supported by Science Engineering and Mathematics Financial award (Fall 1997).
- **Marcus Williams**: Civil Engineering major, supported by Science Engineering and Mathematics Financial award (Fall 1998).
- **Courtney Fields**; Biology Major, major, supported by Science Engineering and Mathematics Financial award (Spring 2001).
- **Victoria Aladejana;** Chemistry major, supported by Science, Engineering and Mathematics (SEM) Summer Research Training Program (Summer 2000).
- **Stephen Johnson**; Civil Engineering major, supported by Interdisciplinary Center for Earth and Space Science Application and Research Grant (ICESSAR) (Fall 2001, Spring 2001).
- **Kaysi-Ann Spence;** Civil Engineering major, supported by Interdisciplinary Center for Earth and Space Science Application and Research Grant (ICESSAR) (Fall 2001, Spring 2001).
- **Damion Ramdin;** Civil Engineering major, Supported by Interdisciplinary Center for Earth and Space Science Application and Research Grant (ICESSAR) (Summer 2002).

- **Jamisa Curry;** Medical Technology major, supported by Science, Engineering and Mathematics (SEM) Summer Research Training Program (Summer 2005).
- **Olatunde Animashaun;** Medical Technology major, supported by Science, Engineering and Mathematics (SEM) Summer Research Training Program (Summer 2005, 2006).
- **Rilwan Lukman;** Chemistry major, supported by Center for hazardous Substance in Urban Environment Summer 2007.
- **Brittany Nixon;** Civil Engineering major, supported by Science, Engineering and Mathematics (SEM) Summer Research Training Program (2008 - 2011).
- **Richard Negri;** Civil Engineering major, supported by Science, Engineering and Mathematics (SEM) Summer Research Training Program (2007 - 2011).
- **Abubakatr Kukoyi;** Biology, supported by Science, Engineering and Mathematics (SEM) Summer Research Training Program (2011 - 2012).
- **Khadijah Muhammed;** Biology major, supported by Science, Engineering and Mathematics (SEM) Summer Research Training Program (2011 - 2012.
- **Jeffrey Bennett:** Civil Engineering Major, supported by Department of Civil Engineering (2012 -2013) Project Title: Development of an Organic Flocculant for Wastewater Treatment and a Flocculation Basin Design (2012 - 2013)
- **Duwane Thomas**: Civil Engineering Major, Supported by the Department of Civil Engineering (2013-2014). Project Title: The potential use of sunflower seed hull as an alternative, cost effective biosorbent for the removal of dye from aqueous solutions. (2013-2014).

GRANT SUPPORT

Previous Grant Support

- **International Foundation for Science** Gbekeloluwa **B. Oguntimein Principal Investigator: "Utilization** of Agricultural by products" September 1984- September 1986 Grant E830/1(85,000 SEK).
- **NASA Interdisciplinary Center for Earth and Space Science Application and Research (ICESSAR)** – Research Grant, **Gbekeloluwa B. Oguntimein Principal Investigator**; "Brownfields Assessment at Selected Sites in Baltimore City", 02/06/2001 -11/06/2001, $69,500.
- **NASA Interdisciplinary Center for Earth and Space Science Application and Research (ICESSAR)** – Research Grant, **Gbekeloluwa B. Oguntimein Co-Principal Investigator**; "Brownfields Assessment at Selected Sites in Baltimore City", 01/06/2002 -12/06/2002, $60,000.
- **EPA Center for Hazardous Substance in Urban Environment** – Research Grant, **Gbekeloluwa B. Oguntimein Co-Principal Investigator**, "Environmental Impact and Economic Assessment and GIS System Development of Brownfields Sites in Baltimore", 09/01/2001 -09/01/2002, $50,392.00.

- **EPA Center for Hazardous Substance in Urban Environment** – Research Grant, **Gbekeloluwa B. Oguntimein Co-Principal Investigator**; "Environmental Impact and Economic Assessment and GIS System Development of Brownfields Sites in Baltimore ", 09/01/2002 -09/01/2003, $50,392.00.
- **EPA Center for Hazardous Substance in Urban Environment** – Research Grant, **Gbekeloluwa B. Oguntimein Co-Principal Investigator**; "Research Needs in EPA regions I, II, III ", 09/01/2003 -09/01/2004, $50,000.00.
- **EPA Center for Hazardous Substance in Urban Environment –**Research grant, **Gbekeloluwa B. Oguntimein Principal Investigator**; "Training and Technical Assistance to Brownfields" 04/01/2004 -08/01/2005, $11,838.00
- **EPA Center for Hazardous Substance in Urban Environment –**Research grant, **Gbekeloluwa B. Oguntimein Principal Investigator**; "Training and Technical Assistance to Brownfields" 04/01/2005 -08/01/2006, $11,838.00
- NSF- DUE 0965942: Jumoke O. Ladeji-Osias, Craig J. Scott**, Gbekeloluwa Oguntimein,** Grace Mack "Scholars in Engineering" 03/01/2010 – 02/02/2015 $600,000.00.

Pending Proposal

- [redacted]

Current Funded Grant

NSF- DUE-1259493: Jumoke O. Ladeji-Osias, Young-Jae Lee, Guangming Chen, Gbekeloluwa Oguntimein, Grace Mack "Doctoral Scholars in Engineering,"" 08/01/2013 – 07/31/2018 $ 627,101.

PUBLICATIONS

1. **Oguntimein, G.B**. 1976. Purification of β-xylosidase. Proceedings of the 6th Annual Biochemical Engineering Symposium, Kansas City, Missouri, U.S.A. 21-23.

2. **Oguntimein, G.B**. 1979. Immobilization of *Aspergillus niger* β-xylosidase. Proceedings of the 8th Annual Biochemical Engineering Symposium. Columbia, Missouri, U.S.A. 27-31.

3. **Oguntimein, G.B**., Frederick, J.R., Fratzke, A.R., Frederick, M.M. & Reilly, P.J. 1979. Enzymatic production of sugar from hemicellulose. In Enzyme Engineering Vol. 4 (Broun, G.B., Manecke, G.and Wingrad, L.B. Eds.) Plenum Press, New York. 261-267.

4. **Oguntimein, G.B**. & Reilly, P.J. 1980. Purification and immobilization of *Aspergillus niger* β-xylosidase. Biotechnol. & Bioengr. 22, 1127-1142.

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6. **Oguntimein, G.B**. & Nwabueze, T.U. 1984. Growth of *Saccharomyces cerevisiae* on citrus residue. Proceedings of the 17th International Symposium on yeasts. Monepellier, France. I6.

7. **Oguntimein, G.B**. 1984. Production of single cell protein from agro-allied industrial wastes in Nigeria. J. Nigerian Soc. Chem. Engr. 7, 363-366.

8. **Oguntimein, G.B**. 1985. Preservation through the application of energy (heat processing, freezing, drying and radiation). Nigeria Food J. 3, 78-81.

9. **Oguntimein, G.B**., Akingbala, J.O., Makanjuola, M.A. & Onwuzilike, E.A.1986. Sorghum as an alternative base in the brewing industry. Bull. Biotechnol. Soc. Nigeria. 2, 3-7.

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12. Akingbala, J.O., **Oguntimein, G.B**., Oguntunde, A.O. & Omokhodion, B.E. 1986. Screening of Nigerian soybean germplasm for lecithin content. Proceedings of the International Conference on Energy, Food Production and Post-harvest Technology in Africa. Nairobi, Kenya.

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bed thickness, duration of steeping and germination on the malting properties of improved Nigerian sorghum varieties. Lebensmittel-Wissenschaft u. Technologie 23, 502-512.

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sugar ester in organic solvents. Biotechnology letters 15, 175-180.

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37. Adegoke G.O. Nwaigwe, R.N. & **Oguntimein G.B**. 1995. Microbiological and biochemical changes during the production of sekete- A fermented beverage made from maize. J. Food Sci. Technol. 32,516-518.

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39. Ihedioha, O.C. Akingbala, J.0. and **Oguntimein. G.B**. (1996). Effect of holding cassava roots up to four days on quality characteristics of flour milled from the roots. Journal of Food Processing and Preservation, 20, 13-23.

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43. **Oguntimein, G.B.**, Aladejana V., Payne G., and Vazquez-Duhalt R. 2001. Development of a Physical-Chemical and Enzymatic Methods for the Removal of Phenolic Pollutant: Application of Chitosan and Laccase. Proceedings of the 2001 American Society for Engineering Education Annual Conference & Exposition, Albuquerque, New Mexico, June24-27, 2001.

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45. **Oguntimein, G.B.** 2001. Sound Biotechnology R & D: The foundation for a vibrant and Sustainable Biotechnology Industry in Africa. Proceedings of the Workshop on Biotechnology Research and Development Collaboration. August 12 -1, 2001 held at The Cook Campus Center, Cook College, New Brunswick, NJ

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47. **Oguntimein, G.B**. & George, A. 2003. Impact of Federal Government Funding of an Internship Program at a Minority Institution. Proceedings of the 2003 American Society for Engineering Education Annual Conference & Exposition, Nashville, Tennessee, June 22-25, 2003.

48. **Oguntimein, G.B.** Mack P.L., Davy, B. and Wheatland, J. 2004. Research Experiences Program for Undergraduates at Morgan State University. Proceedings of the 2004 American Society for Engineering Education Annual Conference & Exposition, Salt Lake City, Utah, June20-23, 2004.

49. Eschenbach, E. A. Johnson, J.H. Brus, C., Carlson, P., Giammar, D., Grauer, B., Hotaling, L., Safferman, S. and Wentling, T, and **Oguntimein, G.B.** 2006. Transforming K-12 Education via Collaborative Large –Scale Engineering Analysis Network for Environmental Research (CLEANER) Project. Proceedings of the Annual Conference of the American Society for Engineering Education, Chicago, Illinois, June 18-21, 2006.

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51. Bert Davy, Indranil Goswami, Jiang Li, **Gbekeloluwa Oguntimein**, Charles Oluokun, Arcadio Sincero. 2006 Open-Ended Design Project as Introduction to Design for Civil Engineering Freshmen. Proceedings of the 2006 Fall Mid-Atlantic Conference of the American Society for Engineering Education. Ocean County College, Toms River, New Jersey, Saturday, November 3- 4, 2006.

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Network: Increasing Vertical Collaboration within Hydrology Research and Education Communities," *Proceeding*, EOS Trans. AGU, 87(52), Fall Meeting, Supplement, H21F-1440, 11-15 December, San Francisco, CA.

54. Eschenbach, E. A., Montgomery, J. Johnson, J., Brus, C., Carlson, P.A., Giammar, D., Grauer, B., Hotaling, L., **Oguntimein, G**., Safferman, S., Seiler, E., and Wentling, T. (2007). "Waters Network's Potential to Transform Environmental Engineering Education Proceedings, ASEE Conference, Honolulu, Hawaii. June 23-27, 2007.

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57. Mwangi, G. & **Oguntimein, G.B**. Studies on Filtration of Fermentation Wastewater Using Sand-Carbon Filter. Proceedings of the 2009 Spring Mid-Atlantic Conference of the American Society for Engineering Education. Loyola College, Baltimore, Maryland, Saturday, April 24 -25, 2009.

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59. Mwangi, G.M. and Oguntimein**, G.B**. 2012. Study of an Activated Carbon System for the Treatment of Fermentation Wastewater from a Bioethanol Production Process. The West Indian Journal of Engineering. 35(2):65-71.

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61. **Gbekeloluwa Oguntimein**, James Hunter, Dong Hee Kang (2014). Biosorption of Azure Dye with Sunflower Seed Hull: Estimation of Equilibrium, Thermodynamic and Kinetic Parameters. International Journal of Engineering Research and Development. 10(6): 26 -41.

62. Steven Garcia, Hye Jeong Lee, Paa Kwasi Adusei, Seyed Zahraei & **Gbekeloluwa Oguntimein** (2014).Investigation of Factors Affecting Carbon Dioxide Absorption. . Proceeding of the fifth International Conference on Applied Mathematics and Informatics (AMATHI'14) 75 -81.

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66. Guangming Chen, J. Ladeji-Osias, **Gbekeloluwa Oguntimein**, and Young-Jae Lee, 2015 "Engaging Engineering Graduate Students in Applied Research at Morgan State University", Proceedings of the 2015 American Society of Engineering Education (ASEE) Annual Conference, June 2015

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68. Kelechi Nwachukwu, Roberta Joseph, Hashmath Fathima, Gbekeloluwa Oguntimein. (2016). Environmental Impact of Burning Electrical and Electronic Components. International Journal of Engineering and Science. 6(5): 13-24.

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1. **Oguntimein, G.B.** (Editor) Proceedings of the 1999 SEM Undergraduate Research Symposium. 138pp
2. **Oguntimein, G.B.** (Editor) Proceedings of the 2000 SEM Undergraduate Research Symposium. 128pp.
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4. **Oguntimein, G.B.** 2002. Status Report on Site Bioremediation Methyl Tertiary Butyl Ether MTBE in Groundwater. Submitted to the Technology Innovation Office (TIO) of the Environmental Protection Agency (EPA).
5. **Oguntimein, G.B**. 2002. Status Report on Potential Impact of Biological Warfare Agents (BWA) in the Environment. Submitted to the Chemical Emergency Preparedness and Prevention Office (CEPPO) of the Environmental Protection Agency (EPA).

6. **Oguntimein, G.B**. (Editor) Proceedings of the 2003 SEM Undergraduate Research Symposium. 98pp
7. **Oguntimein, G**.B. & Chen G. (Editor) 2005. Proceedings of Symposium on Hazardous Substances in Urban Environments.

Thesis and Books

1**. Ph.D. Dissertation:** Purification, Characterization and Immobilization of β-Xylosidase. Iowa State University, Ames. Iowa, USA.

2**. Book: Oguntimein, G.B**. & Hahn, N.D. 1989. Human Nutrition & Tropical Food crops- An annotated bibliography, 1970-1980. United Nations Children Fund, New York. 125pp.

Papers Presented at National and International Meetings

1. **Oguntimein, G.B**. Fundamentals of hygienic food plant design. Training Workshop on Microbiological Control for the Food, Beverage, and Brewing Industries. University of Ibadan, Ibadan, Oyo State. Nigeria. April 4-16, 1983.

2. **Oguntimein, G.B**. and Nwabueze, T.U. Growth of *Saccharomyces cerevisiae* on citrus residue. 11th International Symposium on yeasts. Montpellier, France. July 9-13, 1984.

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4. **Oguntimein, G.B**., Akingbala, J.O., Makanjuola, M.A. & Onwuzilike, E.A. Sorghum as an alternative base in the brewing industry. 2nd Annual Conference of the Biotechnology Society of Nigeria. Ilorin, Kwara State, Nigeria.

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15. **Oguntimein, G.B**., Hunter, J., Street, C., and Crosby, K., "Meeting ABET Engineering Criteria 2000 in a Civil Engineering Course," ECSEL Learning by Design Faculty Workshop, Morgan State University Clarence M. Mitchell, Jr. School of Engineering, Baltimore, MD, November 23, 1999.

16. **Oguntimein, G.B.** Development of a Physical-Chemical and Enzymatic Methods for the Removal of Phenolic Pollutant: Application of Chitosan and Laccase. US/Africa Workshop on Environmental Chemistry/Water Quality. July 26 through 28, 2001 in Dakar, Senegal.

17. **Oguntimein, G.B.** Sound Biotechnology R & D: The foundation for a vibrant and Sustainable Biotechnology Industry in Africa. Cook College/New Jersey Agricultural Experimental Station and the Sheda Science and Technology Complex Workshop on Biotechnology Research and Development Collaboration. August 12 -1, 2001 held at The Cook Campus Center, Cook College, New Brunswick, and NJ.

18. **Oguntimein**, **G.B**., P. L. Leigh-Mack and B. Davy 2004. Research Experiences program for Undergraduates in a Historically Black college and University. Proceedings of the ASEE Mid Atlantic section Fall 2003 conference, October 24-25, 2003.

19. **Oguntimein, G.B.** Summary of Survey of hazardous substances research needs in EPA regions I, II, and III. Proceedings of Symposium on Hazardous Substances in Urban Environments September 26, 2005.

20. Animashaun, O. and **Oguntimein, G.B.** 2006. Investigation of the adsorptive capacity of Chitosan. Proceeding of the 13th Annual MBRS-RISE Morgan State University Undergraduate and graduate Science Research Symposium. April 2006.

21. Curry, J. and **Oguntimein, G.B.** 2006. Enzymatic analysis of rat tissues exposed to simulated micro gravity conditions. Proceedings of the 13th Annual MBRS-RISE Morgan State University Undergraduate and graduate Science Research Symposium. April 2006.

22. Eschenbach, E. A. Johnson, J.H. Brus, C., Carlson, P., Giammar, D., Grauer, B., Hotaling, L., Safferman, S. and Wentling, T, and **Oguntimein, G.B.**Transforming K-12 Education via Collaborative Large –Scale Engineering Analysis Network for Environmental Research (CLEANER) Project. Proceedings of the Annual Conference of the American Society for Engineering Education, Chicago, Illinois, June 18-21, 2006.

23. **Oguntimein, G.B**. Chen G. & Williams S. Hazardous substances in urban environment. Proceedings of the 4th International Symposium on Recent advances in Environmental Research, Jackson Mississippi, and September 16-19, 2007.

24. **Oguntimein, G.B**., Animashaun, O. & Opkere, I. Application of chitosan in remediation of dyes**.** 3rd National Conference on Environmental Science and Technology, Greensboro, North Carolina September 12-14, 2007.

25. **Oguntimein, G.B.** Potential Application of Chitosan in Textile industry Wastewater. Partners in Environmental Technology Technical Symposium Workshop. Washington DC Dec 4-6, 2007.

26. George Mwangi & **Gbekeloluwa Oguntimein**. 2009. Studies on filtration of fermentation wastewater using sand-carbon filter. 2009 Mid Atlantic ASEE conference. Loyola College, Baltimore, Maryland April 24- 25, 2009.

27. Richard A. Negri, Brittany Nixon & **Gbekeloluwa Oguntimein**. 2009. Characterization of *Saccharophagus Degradans* Xylanases Activity. 2009 NOBICHE Annual conference. University of Maryland University College November, 2009.

28. **Gbekeloluwa B. Oguntimein**, John Fisher, Kanapathipillai, Wignarajah. 2010. Resource Recovery from Human Metabolic Waste Generated in Space. Poster presentation 2010 Science Day Symposium NASA Ames Research Center. July 15, 2010.

29. Jumoke Ladeji-Osias, **Gbekeloluwa Oguntimein**, John Wheatland, Craig Scott, Yacob Astatke 2012. Scholars in Engineering: A Scholarship Model for Student Mentoring and Retention. 2012 Mid Atlantic ASEE conference. Loyola College, Baltimore, Maryland April 21- 22, 2012.

30. **Gbekeloluwa Oguntimein** 2013. "Biosorption characterization of sunflower seed hull for decolonization of Azure A chloride dye contaminated solutions. Paper presentation at the 245th ACS National Meeting, New Orleans, Louisiana, April 7-11, 2013.

31. Bala Abarshi, Montier Kess, Seyedehsan Dadvar & **Gbekeloluwa Oguntimein** 2013. Minimization of environmental impact of Sludge through of processing methods. Paper presented at the fifth International Conference of the World Scientific and Engineering Academy and Society (WSEAS) **at** Morgan State University September 17 -19, 2013.

32. Safeih Laaly, **Gbekeloluwa B. Oguntimein** and Mansoureh Jeihani 2013 Sustainability Characteristics of American of Households and Greenhouse Gas Emissions. Carbon Management Technology Conference. Alexandria, VA from October 21-23, 2013

33. Osifo, S., Owolabi, O and **Oguntimein, G**. 2014. Proffering a Sustainable Cost Effective and Efficient Solution to the Damaging Effect of Steam Lines on City of Baltimore Streets. Paper presented at World Scientific and Engineering Academy Conference Cambridge, MA, USA.January 29-31, 2014.

34. Ronnie Brown, Abdul Khan, Samuel Mbugua, Asia Mason, James Hunter**, Gbekeloluwa Oguntimein** Environmental Impact of the Grand Prix on Baltimore City. Paper presented at World Scientific and Engineering Academy Conference Cambridge, MA, USA, January 29-31, 2014.

35.Steven Garcia, Hye Jeong Lee, Paa Kwasi Adusei, Seyed Zahraei & **Gbekeloluwa Oguntimein** Investigation of Factors Affecting Carbon Dioxide Absorption. . Paper presented at World Scientific and Engineering Academy Conference Cambridge, MA, USA.January 29-31, 2014.

36. Jumoke Ladeji-Osias, **Gbekeloluwa Oguntimein**, Guangming Chen, Young-Jae Lee, 2014. Creating a Community of Doctoral Scholars. Presented at **t**he 6th Annual Conference on Understanding Interventions that Broaden Participation in Research Careers held on May 16-18 2014 at the Renaissance Baltimore Harbor Place Hotel in Baltimore**,** MD.

37. Sharma, A. Osifo, S, Owolabi, O and **Oguntimein, G** 2015. Sustainable Engineering and Landscape Design Recommendations to Address Steam Leakage Issues in the City of Baltimore" oral presentation at Engineering Sustainability 2015, held in Pittsburgh, Pennsylvania at the David L. Lawrence Convention Center from April 19-21, 2015.

38. **Gbekeloluwa Oguntimein.** 2017. Optimization using central composite design (CCD) and the desirability function for biosorption of methylene blue from aqueous solution onto dried sunflower seed hull. Presented at the 2ndWorld Conference on Industrial Chemistry and water treatment, held on May 22 -23, 2017 at Hampton Inn Event Center Tropicana , Las Vegas, NV. USA.

Alexander Orlov, November 2012

BIOGRAPHY

Dr. Alexander Orlov is an Assistant Professor of Materials Science and Engineering at State University of New York, Stony Brook, USA. He is also a faculty member of the Consortium for Interdisciplinary Environmental Research and affiliate faculty of Chemistry Department. His major research and teaching activities are in physical and environmental chemistry, atmospheric chemistry, pollution control technologies, and environmental aspects of energy production, public health and risk assessment. More specifically, Dr. Orlov has a number of journal papers related to atmospheric chemistry and NOx chemistry specifically (listed below). He also obtained several NSF research grants focused on development of novel NOx control technologies and measurements of biogeochemical fluxes (listed below). Dr. Orlov regularly reviews atmospheric proposals for the NSF and for the UK Natural Environment Research Council. During the previous 4 years Dr. Orlov's research was supported by the National Science Foundation (NSF), the State of New York, the US Department of Education, the US Department of Transportation, the National Institute of Standards and Technology (NIST) and Industry (totaling $2.5 million as PI or co-PI). Before coming to Stony Brook he was a Research Fellow in Science and Engineering at the University of Cambridge (UK), where he was also affiliated with the King's College. Dr. Orlov has 5 degrees from various European and the US institutions, including: Doctoral and Master's degrees in Chemistry from the University of Cambridge (UK) and Master's degree in Engineering from the University of Michigan (US). He also holds Diploma in Economics from the London School of Economics.

In 2007 Dr. Orlov was appointed by the UK Secretary of State to advise the Labour Government on such environmental issues as hazardous substances in the environment and environmental impact of nanotechnology. In 2011 he was reappointed to the same role by the Conservative-Liberal Democrats Coalition Government. Dr. Orlov is the first ever US based advisory committee member. He was a co-author of numerous reports to the UK government, including reports on DecaBDE toxicity, cumulative toxic effects of phthalates, behavior of pharmaceuticals in the environment, risk assessment of nanosilver/nanoseria and numerous other risk assessments reports on hazardous substances and nanomaterials in both air and water environmental compartments. Additionally, he used his research experience to advise several US Congressmen, the UK Members of Parliament, the EU Commission and various governments. Among his current/recent activities Dr. Orlov has contributed to work of the United Nations Environmental Program (Lead Author for the GEO report) and to the activities of the UK Parliamentary and Scientific Committee. He is/was reviewer of grant proposals submitted to the National Science Foundation (US), the EU Commission, the Engineering and Physical Sciences Research Council (UK), the Natural Environment Research Council (UK) and to more than 10 other funding/governmental agencies in the EU and North America. Dr. Orlov's opinions, interviews and comments appeared in BBC, Nature, Daily Telegraph and Cambridge Evening News. He is a recipient of National Endowment for Science Technology and Arts CRUCIBLE award (UK) focused on developing skills in communicating science to general public and policy makers.

<u>Selected Atmospheric Chemistry and NOx Specific Publications:</u>

1. Gustafsson, R. J., **Orlov, A.**, Griffiths, P. T., Cox, R.A., Lambert, R. M. "Reduction of NO_2 to nitrous acid on illuminated titanium dioxide aerosol surfaces: implications for photocatalysis and atmospheric chemistry", *Chemical Communications*, 37, 3936-3938, 2006.
2. Gustafsson, R. J., **Orlov, A.**, Griffiths, P. T., Cox, R.A., Lambert, R. M. "A comprehensive evaluation of water uptake on atmospherically relevant mineral surfaces: a DRIFTS, thermogravimetric analysis and DMA study", *Atmospheric Chemistry and Physics*, 5, 3415-3421, 2005.

<u>Selected Grants related to NO_X Control Technologies and Atmospheric Chemistry:</u>

1. PI, NSF, "EAGER: Developing sustainable solutions for building industry: recycling fresh and aged concrete to remove nitrogen dioxide", ($30,500), 2010-2012.
2. Co-PI, NSF MRI, "Acquisition of a mass spectrometric system for determination of biogeochemical fluxes between the atmosphere and ocean", ($623,118.00), 2009-2012.

Alexander M. Orlov

Address:	314, Old Engineering, SUNY Stony Brook. E-mail: aorlov@notes.cc.sunysb.edu
Research and Teaching:	**Physical and environmental chemistry, atmospheric chemistry, pollution control technologies, environmental aspects of energy production, public health, risk assessment**, **environmental policy and environmental health**
Current Positions:	***Assistant Professor,*** Material Science and Engineering Department; Stony Brook University, 2006- onwards. ***Assistant Professor***, Consortium for Interdisciplinary Environmental Research, Stony Brook University, 2008 – onwards. ***Affiliate Professor***, Chemistry Department, Stony Brook University, 2009– onwards. ***Visiting Scientist***, Brookhaven National Lab, 2008 – onwards.
Previous Positions:	***Visiting Professor,*** *Nanyang Technological University, Singapore, 2009-2011.* ***Postdoctoral Research Fellow,*** Chemistry Department*, University of Cambridge*, UK, 2005 – 2008. ***Research Fellow in Science***, *King's College, University of Cambridge*, UK, 2005 – 2008.
Current and Recent Public Appointments:	***Member (UK Secretary of State appointment),*** *Department for Environment, Food and Rural Affairs Science Advisory Committee on Hazardous Substances,* UK, 2007 – 2013*.* ***Lead Author***, *United Nations Environmental Program*, Global Environmental Outlook Report, 2010-2012. ***Member***, *UK Parliamentary and Scientific Committee*, 2010 – onwards. ***Member At Large****, American Chemical Society Environmental Division*, 2011 – onwards.
Education: **Degrees**	***Ph.D., Physical and Environmental Chemistry*** *University of Cambridge,* UK, 2005; ***Doctoral coursework/research/teaching in Environmental Engineering and Environmental Chemistry*** *University of Michigan*, Ann Arbor, USA, May 1997-September 1999, October 2000-December 2000; ***M.Phil., Physical Chemistry*** *University of Cambridge*, UK, 2000; ***M.S., Environmental Engineering*** *University of Michigan,* Ann Arbor, USA*,* 1997; ***M.E. (including B.E.) with highest honors in Engineering,*** *National Technical University*, Kiev, Ukraine, 1995;
Certificates:	***Certificate of postgraduate studies in Natural Sciences,*** *University of Cambridge*, U.K. ***Diploma for Graduates in Economics***, *London School of Economics and Political Science (LSE)*, UK
Funded Grant Proposals:	**Total: $2.5 million as PI and co-PI for 15 grant proposals including: NSF (5 proposals), Department of Education (1 proposal), DOT (1 proposal), NIST (1 proposal), NY State, BNL, Stony Brook. Funding also includes 3 Educational Proposals.**

<u>Funded Grant Proposals</u> (continue):	1. PI, NSF, "Developing a New Generation of Perovskite Oxides Based Composite Materials for CO2 Conversion into Fuels", ($369,000), 2012-2015. 2. Co-PI, NSF, "High-Pressure Synthesis of Novel Oxynitride Photocatalysts Directed by Theory and In Situ Scattering", ($800,000), 2012-2015 3. PI, NSF, "Exploring unique properties of sub-nm metal nanoparticles for photocatalysis", ($80,000), 2011-2013. 4. Co-PI, Department of Education (DOE), "Graduate Assistance in Areas of National Need", ($390,000.00)", 2010-2013. 5. Co-PI, NSF MRI, "Acquisition of a mass spectrometric system for determination of biogeochemical fluxes between the atmosphere and ocean", ($623,118.00), 2009-2012. 6. Co-PI, SUNY Provost Office, Innovative Instruction Technology Grants, "Enviropedia: A Serious Game about Beverage Container Choices", ($60,000), 2012-2013. 7. PI, Stony Brook-Brookhaven National Lab Seed Funding, "Understanding Extraordinary Water Splitting Activity of sub-nm Noble Metal Particles of Different Sizes and Shapes: a First-Principle Investigation and Model Systems Studies", ($32,000), 2012-2013. 8. PI, University Transportation Research Center (UTRC) Region II Faculty Development Minigrants, "Developing self-cleaning and air purifying transportation infrastructure components to minimize environmental impact of transportation", ($12,000), 2012-2013. 9. PI, NIST, "Summer Undegraduate Research Fellowship Program NIST-SURF", ($17,000), 2012. 10. PI, NSF, "EAGER: Developing sustainable solutions for building industry: recycling fresh and aged concrete to remove nitrogen dioxide", ($30,500), 2010-2012. 11. PI, Stony Brook-Brookhaven National Lab Seed Funding, "Engineering novel nanoparticles and nanostructures for efficient CO2 conversion into hydrocarbons", ($30,000), 2010-2011. 12. PI, Brookhaven National Lab sub-contract, "Testing of novel materials for photocatalytic water splitting", ($17,000), 2011-2012. 13. PI, New York State Strategic Partnership for Industrial Resurgence (SPIR) and PURETi, "Testing of nanoparticle stability on the coated fabric", ($15,000.00), 2010-2011. 14. co-PI, Stony Brook-Brookhaven National Lab, "Center for Regional Impacts of Climate Change (CIRCC)", ($58,000.00), 2009 - 2010. 15. PI, New York State Strategic Partnership for Industrial Resurgence (SPIR), "Self cleaning coatings for environmental applications", ($30,000.00), 2008-2009.

Proposal Reviewer and Expert (for over 15 Agencies):	NSF (Environmental Molecular Science, Environmental Engineering, Sustainable Energy, Atmospheric Chemistry, Catalysis and Biocatalysis Panels), EU Commission, DEFRA (UK), Natural Environment Research Council (UK), Engineering and Physical Sciences Research Council (UK), European Regional Development Fund (EU), Le Fonds québécois de la recherche sur la nature et les technologies (Canada), Norwegian Cooperation Programme in Higher Education (Norway), Research Promotion Foundation (Cyprus), Portuguese Foundation for Science and Technology (Portugal), American Chemical Society, INTAS and others.
Scholarships and Fellowships:	• King's College Research Fellowship in Science, University of Cambridge, UK, 2005-2008 • Offered NIH/NIST Postdoctoral Fellowship (declined), National Research Council of the National Academy of Science, USA, 2005-2006 • Francois Fiessinger Doctoral Scholarship, Environment Research and Education Foundation, USA, 2001-2004 • Doctoral Scholarship, Schlumberger Cambridge Research, UK, 2003-2004 • Cambridge University Overseas Trust Doctoral Bursary, UK, 2001-2002 • Trinity Hall Research Studentship, University of Cambridge, UK, 2001-2002 • Eugene&Elinor Kotur Memorial Graduate Scholarship, USA, 1999 • Canada-Ukraine Parliamentary Program Graduate Scholarship, Canada, 1999 • Rukh Educational Foundation Graduate Scholarship, USA, 1999, 2001 • Cambridge University Overseas Trust M.Phil Bursary, UK, 1999 • Congressional Fellowship, sponsored by the University of Michigan, USA, 1998 • Multi-year Doctoral Fellowship of International Institute at the University of Michigan, USA, 1995-1998 • Academic Council of National Technical University Named Graduate Scholarship, Ukraine, 1993-1994
Awards:	• National Endowment for Science, Technology and the Arts CRUCIBLE Award, UK, 2005
Conference Awards:	• Certificate of Merit Award, American Chemical Society, 2010; Salzburg Seminar Fellowship and Nippon Fellowship, Japan, 2005; Sir Eric Rideal Travel Bursary, Society of Chemical Industry (SCI), UK, 2005; American Chemical Society (ACS) Travel Grant , USA, 2005; Messel Travel Bursary, SCI, UK, 2003; Society of Environmental Toxicology and Chemistry (SETAC-North America) Student Travel Award, USA, 2003; SETAC-UK Student Travel Award, UK, 2003; Trinity Hall Travel Grant, University of Cambridge, UK, 2003; Student Holcim Scholar, Prague International Symposium, USA, 2003; Travel Grants, Cambridge Philosophical Society, UK, 2003, 2001.
Policy Experience:	***Member,*** Department for Environment, Food and Rural Affairs Advisory Committee on Hazardous Substances, UK, 2007 – 2013. • Appointment by the UK Secretary of State to advise the Government on hazardous substances and nanotechnology. Advising the Secretary of State for the Environment, Transport and Regions, the Minister of the Environment, Northern Ireland, the Scottish Ministers and other Ministers. ***Member,*** UK Conservative Party Task Force on Science, 2006 – 2007 • Appointed by the leadership of the Conservative Party to develop the science roadmap for the next Conservative Government.

Policy Experience (continue):	***Fellow***, Congress of the United States, Office of Representative Lynn Rivers/Committee on Science, Summer 1998 • Working on several science and technology issues ranging from environmental science and policy to NASA international space programs. ***Assistant (Congressional Internship),*** Congress of the United States, Legislative and Democratic Whip offices of Democratic Whip of Congress, Congressman David Bonior, June/July 1997 • Preparation of policy and legislation report for Congressman Bonior evaluating environmental impacts of NAFTA agreements. Reports were used in negotiations between the President and Democratic Minority Leaders on NAFTA. • Preparation of policy and legislation evaluation report for Congressman Bonior related to new EPA air quality standards.
Teaching:	• Instructor, ESM 508, "Impact of Materials on Environment", SUNY Stony Brook, USA, Spring 2010 - current. • Instructor, ESG 302, "Thermodynamics of Materials", SUNY Stony Brook, USA, Fall 2010 -current. • Instructor, ESM 212, "Introduction to Environmental Materials Engineering", SUNY Stony Brook, USA, Spring, 2009-current. • Instructor, ESM 696, "Materials for environmental protection", SUNY Stony Brook, USA, 2008- current.
Symposium Chair and Organizer:	• Chair/Symposium Organizer: “"Nanotechnology for Heterogeneous Catalysis: Environmental and Energy Applications", American Chemical Society, (ACS), August 19-23, 2012, Philadelphia, USA • Chair/Symposium Organizer: "Heterogeneous catalysis for sustainable energy applications", American Chemical Society, (ACS), August 28-31, 2011, Denver, USA. • Chair/Symposium Organizer: "Heterogeneous catalysis for environmental and sustainable energy applications", American Chemical Society, (ACS), August 22-26, 2010, Boston, USA. • Organizing Committee, the 15th International Conference on Photocatalysis, San Francisco, November 15-18, 2010, San Francisco, USA.
University Service	1. Member of the Undergraduate Committee, SUNY, Stony Brook, 2008 - onwards. 2. Currently member of 5 Ph.D. committees at SUNY, Stony Brook. 3. External Ph.D. Dissertation Examiner, Cambridge University Engineering Department, 2010 4. Member of the Cambridge University Committee for Russian and Eastern European Studies (CamCREES), University of Cambridge, UK, 2005-2008 5. Member of King's College (University of Cambridge) Building and Safety Committee, Unviersity of Cambridge, UK, 2005-2008
Contributions to Books:	1. Handbook of Environmental Degradation of Materials. Chapter on " Environmental Degradation of Nanomaterials: Impact on Design and Use", 2012, Second Edition. Edited by Myer Kutz. 2. Bringing Groundwater Quality Research to the Watershed Scale. Edited by N. R. Thompson. IAHS Publ. 297, 2005

Conference Presentations:	Presentations at around 30 Conferences.
Selected Journal Publications	1. Zhao, S., Ramakrishnan, G., Shen, P., Su, D., **Orlov, A.** "The first experimental demonstration of the beneficial effects of sub-nanometer platinum particles for photocatalysis", 2012, submitted. 2. Uchimiya, S., **Orlov, A.**, Ramakrishnan, G. Sistani, K. "In Situ and Ex Situ Spectroscopic Monitoring of Biochar's Surface Functional Groups", 2012, in press. 3. Shen, P., Zhao, S., Su, D., Li, Y., **Orlov, A.** "Outstanding activity of sub-nm Au clusters for photocatalytic hydrogen production", *Applied Catalysis B: Environmental*, 25, 153-160, 2012. 4. Zhao, S., Su, D., Che, J., **Orlov, A.** "Photocatalytic properties of TiO2 supported on SBA-15 mesoporous materials with large pores and short channels", *Materials Letters*, 65, 3354–3357, 2011. 5. Zhao, S., Ramakrishnan, G., Su, D., Rieger, R., Koller, **Orlov, A.** "Novel photocatalytic applications of sub-nanometer gold particles for environmental liquid and gas phase reactions", *Applied Catalysis B: Environmental*, 104, 239-244, 2011. 6. Ramakrishnan, G., Zhao, S., Han, W., **Orlov, A.** "Simultaneous observation of gas phase and surface species in photocatalytic reactions on nanosize Au modified TiO2: The next generation of DRIFTS systems", *Chemical Engineering Journal*, 170, 445-450, 2011. 7. Colmenares-Angulo, J., Zhao, S., Young, C., **Orlov, A.** "The effects of thermal spray technique and post-deposition treatment on the photocatalytic 8. **Orlov, A.**, Klinowski, J.K. "Oxidation of VOCs by SBA-15 mesoporous molecular sieves modified with manganese", *Chemosphere*, 74, 344-348, 2009. 9. In, S., **Orlov, A.**, Berg, R., García, F., Pedrosa, S.J., Tikhov, M., Wright, D.S. , Lambert, R. M. "Effective visible light-active B-doped and B,N-codoped TiO_2 photocatalysts ", *Journal of American Chemical Society*, 129, 13790-13791, 2007. 10. **Orlov, A.,** Watson, D., Williams, F., Tihov, M., Lambert, R. M. "Interactions of 4-chlorophenol with TiO_2 polycrystalline surfaces: study of environmental ", *Langmuir*, 23, 9551-9554, 2007. 11. **Orlov, A.,** Jefferson, D., Tikhov, M., Lambert, R. M. "Enhancement of MTBE photocatalytic degradation by modification of TiO_2 with gold nanoparticles", *Catalysis Communications*, 8, 821-824, 2007. 12. Gustafsson, R. J., **Orlov, A.**, Griffiths, P. T., Cox, R.A., Lambert, R. M. "Reduction of NO_2 to nitrous acid on illuminated titanium dioxide aerosol surfaces: implications for photocatalysis and atmospheric chemistry", *Chemical Communications*, 37, 3936-3938, 2006. 13. In, S., **Orlov, A.**, García, F., Tikhov, M., Wright, D., Lambert, RM. "Efficient visible light-active N-doped TiO_2 photocatalysts by a reproducible and controllable synthetic route", *Chemical Communications*, 40, 4236–4238, 2006.

	14. **Orlov, A.**, Zhai, Q.Z., Klinowski, J. " Photocatalytic properties of the SBA-15 mesoporous silica molecular sieve modified with titanium", *Journal of Material Science*, 41, 2187-2193, 2006. 15. **Orlov**, **A.**, Tikhov, M., Lambert, R " Application of surface science techniques in the study of environmental photocatalysis: nitrogen doped TiO_2", *Comptes Rendus Chimie*, 9 (5-6), 2794-2799, 2006. 16. **Orlov, A.,** Chan, M., Jefferson, D.A., Zhou, D., Lynch, R.J., Lambert, R.M. "Photocatalytic degradation of water-soluble organic pollutants on TiO_2 modified with gold nanoparticles", *Environmental Technology*, 27(7), 747-752, 2006. 17. Gustafsson, R. J., **Orlov, A.**, Griffiths, P. T., Cox, R.A., Lambert, R. M. "A comprehensive evaluation of water uptake on atmospherically relevant mineral surfaces: a DRIFTS, thermogravimetric analysis and DMA study", *Atmospheric Chemistry and Physics*, 5, 3415-3421, 2005. 18. Lin, Z. S., **Orlov, A.**, Lambert, R.M., Payne M. C. "New insights into the origin of visible light photocatalytic activity of nitrogen doped and oxygen deficient anatase TiO_2", *Journal of Physical Chemistry B*, 109 (44), 2005. 19. **Orlov**, A., Jefferson, D., Lambert, R. "Effect of noble metal nanoparticles on photocatalytic activity of TiO_2", *Transactions of the Material Research Society of Japan*, 29, 2004. 20. **Orlov**, A., Jefferson, D ., Macleod, N., Lambert, R. " Enhancement of photocatalytic degradation of 4-chlorophenol on titania modified with gold nanoparticles", *Catalysis Letters*, 92(1-2), 2004.

Deanna L. Osmond

(91% Extension; 9% Research

Education Background

Ph.D., Agronomy 1991**,** Cornell University, Ithaca, NY.

M.S., Soil Science 1979**,** NC State University, Raleigh, NC.

B.S., Agronomy and Anthropology. 1975, Kansas State University, Manhattan, KS.

Professional Experience

July 2005 – present **Professor and Soil Science Department Extension Leader,** Department of Soil Science, NC State University, Raleigh, NC.

June 2002 – June 2005 **Associate Professor and Soil Science Department Extension Leader,** Department of Soil Science, NC State University, Raleigh, NC.

May 2000 – May 2002 **Associate Professor and Soil Science Extension Specialist,** Department of Soil Science, NC State University, Raleigh, NC.

May 1997 – April 2000 **Assistant Professor and Soil Science Extension Specialist,** Department of Soil Science, NC State University, Raleigh, NC.

Feb 1993 – April 1997 **Water Quality Extension Specialist,** Water Quality Group, Department of Biological & Agricultural Engineering, NC State University, Raleigh, NC.

May 1981 – May 1983 **Agricultural Project Officer,** United States Agency for International Development, Zaire, Africa.

Mar 1979 – May 1980 **Research Associate,** Soil Science Department, NC State University, Raleigh, NC.

Summary of Scholarly and Creative Activities

Refereed Journal Articles	64	Book and Book Chapters	22
Invited Presentations	129	Volunteered Presentations	216
Referred Proceedings	18	Grants (> $8.3M)	100
Extension publications and slide sets	71	Extension Training	114

Peer Reviewed Journal Article (58 of 64) and Book

1. Osmond, D.L., D.LK. Hoag, A.E. Luloff, D.W. Meals, K. Neas. 2014. Farmers Use of Nutrient Management: Lessons from Watershed Case Studies. J. Environ. Qual. (accepted)
2. Wiseman, Jacob D., Michael R. Burchell, Garry L. Grabow, Deanna L. Osmond, and T.L. Messer, 2014. Groundwater Nitrate Concentration Reductions in a Riparian Buffer Enrolled in the NC Conservation Reserve Enhancement Program. Journal of the American Water Resources Association (JAWRA) 50(3): 653-664. DOI: 10. 1111/jawr.12209.

3. Larsen, E.M., J. Grossman, J. Edgell, G. Hoyt, D. Osmond, and S. Hu. 2014. Evaluating Soil Carbon Pools and Losses in Long-term Organic and Conventional Farming Systems. Soil Tillage Res. 139:37-45.
4. Woods, B.R., A.E. Luloff, D.L. Osmond, and D.L. Hoag. 2014. Towards a Synthesis: Lessons from Thirteen Cropland Watershed-scale Studies. Society & Natural Resources 27:341-357. doi:10.1080/08941920.2013.861551.
5. Bordeaux, C., J. Grossman, J. White, D. Osmond, M. Poore, and S. Pietrosemoli. 2014. Effects of Rotational Infrastructure within Pasture-Raised Pig Operations on Ground Cover, Soil Nutrient Distribution and Bulk Density. J. Soil and Water Conserv. 69:120-130.
6. Gold, A.J., D. Parker, R.M. Waskom, J. Dobrowolski, M. O'Neill, P.M. Groffman, K. Addy, M. Barber, S. Batie, B. Benham, M. Bianchi, T. Blewett, C. Evensen, K. Farrell-Poe, C. Gardner, W. Graham, J. Harrison, T. Harter, J. Kushner, R. Lowrance, J. Lund, R. Mahler, M. McClaran, M. McFarland, D. Osmond, J. Pritchett, L. Propkopy, C. Rock, A. Shober, M. Silitonga, D. Swackhamer, J. Thurston, D. Todey, R. Turco, G. Vellidis, and L. Wright Morton. 2013. Advancing water resource management in agricultural, rural, and urbanizing watersheds: Why land-grant universities matter. J. Soil and Water Conserv. 68:337-348. Doi:10.2489/jswc.68.4.337.
7. Osmond, D.L., K. Neas, A.M. Johnson, and S.L. Cahill. 2013. Fertilizer Use in Regulated River Basins: Is It What We Think? J. Contemporary Water Res.& Educ. 151:20-26.
8. Cahill, S., R. Gehl, D. Osmond, and D. Hardy. 2013. Evaluation of an Organic Copolymer Fertilizer Additive on Phosphorus Starter Fertilizer Response by Corn. Crop Management 12: doi:10.1094/CM-2013-0322-01.
9. Bouchard, N., D.L. Osmond, R. Winston, and W.F. Hunt. 2013. The Capacity of Roadside Vegetated Filter Strips and Swales to Sequester Carbon. Ecological Eng. 54: 227– 232. http://dx.doi.org/10.1016/j.ecoleng.2013.01.018.
10. Osmond, D., D. Meals, D. Hoag, and M. Arabi. 2012. How to Build Better Agricultural Conservation Programs to Protect Water Quality: The NIFA-CEAP Experience. Soil and Water Conservation Society, Ankeny, IA.
11. Johnson, S., M.R. Burchell, R.O. Evans, D. L. Osmond, and J.W. Gilliam. 2012. Riparian Buffer Located in an Upland Landscape Position Does Not Enhance Nitrate-nitrogen Removal. Ecological Eng. http://dx.doi.org/10.1016/j.ecoleng.2012.11.006.
12. Wu, L., D. Osmond, A. Graves, M. Burchell, and O. Duckworth. 2012. Relationships between Nitrogen Transformation Rates and Gene Abundance in a Riparian Buffer Soil. Environmental Management. DOI 10.1007/s00267-012-9929-z.
13. Osmond, D., D. Meals, D. Hoag, M. Arabi, A. Luloff, M. McFarland, G. Jennings, A. Sharpley, J. Spooner, and D. Line. 2012. Improving Conservation Practices Programming to Protect Water Quality in Agricultural Watersheds: Lessons Learned from the National Institute of Food and Agriculture Conservation Effects Assessment Project. J. Soil and Water Conserv. 67:123A-128A. doi:10.2489
14. Messer, T.L., M.R. Burchell, G.G. Grabow, and D.L. Osmond. 2011. Groundwater nitrate reductions within upstream and downstream sections of a riparian buffer. Ecological Engineering 47:297-307.

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Invited Presentations and Briefings (33 of 129)

1. Osmond, D.L. 2013. Farmer BMP Adoption: Lessons from the NIFA CEAP Watershed Studies. Improving Nitrogen Use Efficiency in Crop and Livestock Production Systems: Existing Technical, Economic, and Social Impediments and Future Opportunities conference. Kansas City, MO.
2. Osmond, D.L. 2013. Agricultural Practices and Water Quality: Lessons from NIFA CEAP. Annual National Farm Bureau Conference, Corpus Cristi, TX.
3. Osmond, D.L. 2013. NIFA CEAP Lessons Learned. NCFAR Lunch n' Learn Educational Briefing for Staffers from the House of Representatives. Washington, DC.
4. Osmond, D.L. 2013. Guest Panelist for the Evidence-Based, "Clinical" Agriculture Smarter session for the Smarter Agriculture: Dialogue on Critical Data for Agriculture working meeting. October 11 & 12, 2013. Bolger Center, Potomac, MD.
5. Osmond, D.L. 2012. Lessons Learned from NIFA-CEAP Watershed Studies. SWCS NCC. Washington, DC.
6. Osmond, D.L. 2012. Update USDA on NIFA CEAP, including Ann Mills (USDA Deputy Under Secretary for Natural Resources and Environment), Dave White (Chief USDA-NRCS), and other NRCS employees.
7. Osmond, D.L. 2012. Land Treatment: What We Learned from NIFA-CEAP. Briefing for Midwestern Watershed Leaders. Ankeny, IA.
8. Osmond, D., D. Meals, D. Hoag, M. Arabi, A. Luloff, G. Jennings, M. McFarland, J. Spooner, A. Shaprley, and D. Line. 2012. Conservation Effects Assessment Projects/NIFA Watershed Synthesis Project. Board on Agriculture and Natural Resources (BANR). Washington, DC.
9. Osmond, D.L. 2012. Accounting for Agricultural Progress at the Watershed Scale. The NC Forum on Nutrient Over-Enrichment. May 26-27, 2012. Raleigh, NC.
10. Osmond, D.L. and J. Schmidt. 2012. A Framework for Improving Nitrogen Recommendations for Corn. ASA, CCSA, SSSA Annual Meeting. Cincinnati, OH.
11. Osmond, D., D. Meals, D. Hoag, M. Arabi, A. Luloff, G. Jennings, M. McFarland, J. Spooner, A. Sharpley, and D. Line. 2012. USDA's NIFA CEAP Synthesis: Lessons Learned. USEPA Watershed Academy Webcast, May 15, 2012.
12. Osmond, D., D. Meals, D. Hoag, M. Arabi, A. Luloff, G. Jennings, M. McFarland, J. Spooner, A. Sharpley, and D. Line. 2012. Lessons Learned from NIFA CEAP. Special Presentation, Annual Soil and Water Conservation Society Meeting, July 22-25.
13. Osmond, D.L. 2011. Poultry Litter as a Fertilizer Source. Presentation to the Wilson County Commissioners. April 13, 2011.
14. Osmond, D.L., D. Meals, M. Arabi, D. Hoag, A. Luloff, G. Jennings, M. McFarland, A. Sharpley, J. Spooner, and D. Line. 2011. Controlling Nutrients and Sediment in Agriculture Watersheds: Lessons Learned from the CEAP Watershed Studies. US EPA Office of Water, Washington, DC.
15. Osmond, D.L. 2010. Briefing for USDA-NRCS Chief, David White, on Preliminary Lessons Learned from CEAP.

16. Osmond, D.L. and D. Meals. 2010. Lessons Learned from NIFA-CEAP. Chesapeake Bay Foundation, Annapolis, MD.
17. Osmond, D.L. 2009. Best Management Practices: We Know Enough, Let's Implement. USEPA Region 6, Dallas, TX.
18. Osmond, D.L. 2009. Long-term Poultry Application Issues. Surry County Commissioners – Public Hearing.
19. Osmond, D.L. 2008. Kansas State University. Agriculture, Water Quality and Rules: A Case Study from North Carolina. Manhattan, KS.
20. Osmond, D.L. 2008. Developing River Basin Rules: A Case Study from North Carolina. Pittsboro, NC. (for the Chatham County Commission)
21. Osmond, D.L. 2007. Latest Riparian Buffer Research from North Carolina. Forestry Working Group, Chesapeake Bay.
22. Osmond, D.L. 2007. River Basin Rules in North Carolina: How They Mandate BMP Effectiveness Guesses. Chesapeake Bay Nutrient Management Subcommittee.
23. Osmond, D.L. 2007. Synthesizing and Extending Lessons Learned from the 13-CSREES CEAP Watershed Projects. National CEAP Steering Committee.
24. Osmond, D.L. 2006. Tar-Pamlico River Basin, New Requirements. NC Plant Food Bi-annual Meeting, Ashville, NC.
25. Osmond, D.L., M. Cabrera, S. Feagley, G. Hardy, C. Mitchell, R. Mylavarapu, P. Moore, L. Oldham, B. Thom, J. Stevens, F. Walker, and H. Zhang. 2006. *P-Indices: A Southern Comparison.* 2006 Poultry Waste Management Conference. Springdale, AR.
26. Osmond, D.L. 2005. Water Quality and Agriculture: New and Emerging Issues. NC CES ANR/CRD Agent Specialist Retreat. Brown Summit, NC.
27. Osmond, D.L. 2004. *Nutrient Management: Nitrogen or Phosphorus?* Columbus County Farmer Meeting. Whiteville, NC.
28. Osmond, D.L. 2004. *Agricultural BMPs for Protecting Water Quality*. Cape Fear River Assembly. Clinton, NC.
29. Osmond, D.L. 2003. *Reducing N at a River Basin Scale*. For EPA and USDA managers. Washington, DC.
30. Osmond, D.L. 2002. *The new NRCS Nutrient Management Standard.* Syngenta Small Grain Field Day.
31. Osmond, D.L. 1999. *The Neuse Crop Management Project: A Collaborative Approach to Solving an Ag & Environmental Issue* North Carolina Farm Writers & Broadcasters Association. Raleigh, NC.
32. Osmond, D.L. 1998. *Protecting Water Quality while Gardening* Annual N.C. Master Gardeners Conference. Raleigh, NC.
33. Osmond, D.L. 1998. *A Closer Look at the Water Quality Benefits of Riparian Buffer Areas: Removal of Pollutants from Runoff.* French Broad River Coalition: Riparian Buffer Protection/Restoration Workshop. Fletcher, NC.

Funded Grants, Contracts, and Gifts ($8,378,220; There are an additional 27 grants with multiple co-PIs from different universities and departments that were removed from this list as Dr. Osmond participated but received no funds.)

1. *Refining Nitrogen Rates for Corn in North Carolina (NC) using Producer-based Tools: Adapt-N and Yield Database*. 2013-2016. Co-PIs Osmond, Crouse, Austin, van Es, Friedman, Monast. USDA NRCS, $450,750. **($251,671)**

2. *Center for Comprehensive, optimaL, and Effective Abatement of Nutrients*. 2013-2017. Co PIs Arabi, Sharvelle, Bledsoe, Hoag; Hunt, Osmond,Vrgut, Silverstein. EPA-G2012-STAR-H1: Centers for Water Research on National Priorities Related to a Systems View of Nutrient Management 08/01/ 2013- 07/30/ 2017. $2,499,995. **($149,297)**
3. *Nitrogen Rates and Fertilizer Sources: AGROTAIN®PLUS.* 2013. Koch Agronomics. 1/2014-12/31-2015. **$19,888.**
4. *Refining Nitrogen Rates for Corn in North Carolina using a Producer-based Tool: Adapt-N*. 2013. USDA-NRCS. 10/2012-9/2015. Co-PIs Osmond, van Es, Friedman, Monast. 10/01/ 2013- 09/30/ 2016. **$ 450,750.**
5. *Delineating Agriculture in the High Rock Lake Watershed.* 2012. PI Osmond. NC DENR 319. 1/2012-12/2015. **$197,313.**
6. *Wheat Nitrogen Rates and Alternative Fertilizers.* 2013-2014. Co-PIs Osmond and Weisz. NC Ag Foundation. **$9,617**.
7. *Alternative Nitrogen Fertilizers and Additives*. 2013-2014. Co-PIs Osmond, Crozier, Gehl, and Weisz. NC Ag Foundation**. $25,000**.
8. *Optimizing Farmer Profit and Minimizing Off-site Nutrient Impacts: Farmer Yield Monitoring.* 6/2012-12/2014. Co-PIs: D. Osmond, D. Crouse, R. Weisz, G. Roberson, and R. Austin. Environmental Defense Fund. **$699,046**.
9. *Refine and Regionalize Southern Phosphorous Assessment Tools Based on Validation and State Priorities.* Co-PIs Osmond, Bolster, Cabrera, Feagley, Harris, Henry, Lee, Moore, Mylavarapu, Nair, Oldham, Radcliffe, Ramirez-Avila, Sharpley, Storm, Walker, Youssef, Zhang. USDA-NRCS. 10/2012-9/2015. $472,962. **($75,459)**
10. *Analysis of Conservation Practice Effectiveness and Producer Adoption Behavior in Lake Jordan Watershed, NC.* Osmond, Jennings, Arabi, Hoag, and Line. USDA-NIFA. 10/2011-9/2015. $595,000. **($448,427)**
11. *Jordan Lake Paired Watershed Study: Part II.* 2011. Co-PIs Osmond and Line. NC DENR 319. 1/2011-12/2014. **$163,745.**
12. *Nutrient Management Updates in North Carolina.* 2011-2013. Co-PIs Osmond and Crouse. NC DENR 319. 1/2011-12/2014. **$92,516.**
13. *Refinement of the NC Nutrient Management Software.* 2010. PI Osmond. USDA NRCS. 10/1/2011-9/30/2012. **$20,000.**
14. Verification of Poultry Manure Nutrient Availability Coefficients in Conventional and No-till Production. NC Cotton Quality Improvement Committee. C.R. Crozier, T.J. Smyth, D.L. Osmond, and A.D. Meijer. $8,000, 01/01/2009-12/31/2009. $7,000. **($0)**
15. *Assessing and Improving Nutrient Management Plan Implementation across the Southern Region.* 2009. Texas A&M. Co-PIs M. Wilson, S. Hawkins, M. Risse, D. Osmond, M. Daniels, R. Mylavapuru, C. Mitchell**.** 1/2010-12/2010. **$43,254.**
16. *Water Quality Evaluation of Long-Term Organic and Conventional Vegetable Production under Conservation and Conventional Tillage.* 2009. USDA-CSREES. Co-PIs. D. Osmond, J. Grossman, G. Jennings, G. Hoyt, M. Reyes, D. Line. 9/2009-8/2014. $658,769. **($568,561).**
17. *Slow-Release Fertilizers*. 2009. Texas A&M. Co-PIs Osmond, McFarland, Mitchell, Mozaffari, Flynn, Arnal. 2/2009-1/2010. $**40,441.**

18. *Aggregate NLEW for the Lake Jordan Watershed and Biosolids Forum.* 2009. NC Department of Environment and Natural Resources. PI D. Osmond, White, and Lindbo. 11/2009-9/2010. **$33,580.**
19. *Fertilizer Comparison on Yield Growth and Nitrogen Use Efficiency: Arborite*. 2009. Weyerhauser. Co-PIs D. Osmond and S. Cahill. 4/1/2009-2/28/2010. **$15,285.**
20. *Continuation of the Southern P-Indices.* 2009. Texas A&M. Co-PIs D. Osmond, M. Cabrera, S. Feagley, C. Mitchell, P. Moore, R. Mylavarapu, J. Oldham, J. Stevens, F. Walker, and H. Zhang. 1/2009/-1/2010. **$7,200.**
21. *Regionalized Approach for Best Management Practice Development and Monitoring.* 2009.Texas A&M.Co-PIs Sharpley, Mylavarapu, Osmond.1/2009-1/2010.$45,000. **($0)**
22. *Enhancing Nutrient Management Education and BMP Adoption.* 2009. Texas A&M. Co-PIs McFarland and Osmond. 1/2009/-1/2010. **$45,000.**
23. *Nitrogen Release Curves from Nutrisphere, ESN, UCAN, and UAN Under Low Temperatures*. 2009. North Carolina Small Grain Association. Co-PIs Osmond, Cahill, Weisz. 1/2009-12/2009. **$7,000**
24. *Delineating Agriculture in the Neuse River Basin*. 2008-2011. PI Osmond. DENR 319. 9/2008-8/2011. **$204,325**.
25. *Southern Regional Water Program*. 2008-2012. G. D. Jennings, D. L. Osmond, J. Zink, G. Price, M. Shaffer. Texas A&M University & USDA NIFA. $608,688. **($15,000).**
26. *Clayton Sustainability Initiative.* 2008. PI Osmond, Stucky, Silverman, Deans. Bayer Crop Science. 8/5/2008 – 10/1/2008. **$13,367.**
27. *Fertilizer Comparison on Yield Growth: Nutrisphere, ESN, and UAN*. 2008. Co-PIs Osmond, Cahill, Heiniger. Corn Growers 2/2008-1/1010. **$14,000.**
28. *Necessity of Starter Phosphorus for Corn Silage Grown on Soils With Very High Soil Test Phsophorus AND the Effectiveness of Avail for Phosphorus Fertilizers.* 2008. Co-PIs Osmond, Cahill, Hardy. Corn Growers. 2/2008-1/2009. **$5,000.**
29. *Poultry Manures as Alternative Fertility Amendments for Wheat.* 2007. Co-PIs Crozier, Meijer, Osmond, Smyth. 1/2008-12/2009. $16,400. **($0)**
30. *Synthesizing and Extending Lessons Learned from the 13 CREES-CEAP Watersheds.* 2007. Osmond, Arabi, Hoag, Jennings, Line, Luloff, McFarland, Meals, Sharpley and Spooner. USDA-CSREES. October 2007-2011. **$600,000.**
31. *Certified Nutrient Management Training and Tool Support*. 2006. Co-PIs Osmond, Shaffer, and Crouse. DENR 319. 9/2007-8/2010. **$156,222.**
32. *Water Quality Changes Before and After Rule Imposition.* 2006. Co-PIs Osmond and Line. DENR 319. 9/2007-8/2010. $68, 039. **($0)**
33. *Necessity of Starter Phosphorus for Corn Silage Grown on Soils With Very High Soil Test Phsophorus*. 2007. Co-PIs Osmond and Hardy. NC Corn Growers. 2/2007-1/2008**. $2,800.**
34. *The Southern Region Water Quality Coordination Project.* 2006. Co-PIs Jennings and Osmond. Texas A&M. 9/2006-9/2007. **$100,000.**
35. *Extending Information Developed by the Nutrient Management Team: P Index.* 2006. Co-PI Osmond and Mylavarapu. Texas A&M. 9/2006-9/2007**. $16,000.**

36. *Nutrient Management Planning Training in North Carolina and Tool Maintenance*. 2005. Co-PIs: Osmond, Crouse, and Shafer. 2/2005-1/2008. USDA-NRCS. **$60,500.**
37. *Agricultural Information and Tool Development for the Upper Cape Fear*. 2005. Co-PIs: Osmond and Cassel. NCDENR 319 (h). 9/2005 to 9/2007. **$153,720.**
38. *The Necessity of Starter Fertilizer Phosphorus on Soils Testing Very High for Phosphorus*. 2005. Co-PIs: Osmond, Hardy, Maguire. WRRI. 3/2005-2/2006. **$39,145.**
39. *Nutrient Management Planning Training in North Carolina and Tool Maintenance*. 2005. Co-PIs: Osmond, Crouse, and Shafer. 2/2005-1/2008. USDA-NRCS. **$60,500.**
40. *Tar-Pamlico Phosphorus Strategy*. 2004. Co-PIs: Osmond and Cassel. 6/2004-5/2005. NCDENR-319 Funds. **$58,740.**
41. *Riparian Buffer Effectiveness as Influenced by Vegetative Type in Two Physiographic Regions of North Carolina*. 2004. Co-PIs: Osmond, Evans, Gilliam. NCDENR-319 Funds. 6/2004-5/2007. **$74,918.**
42. *Comparison of Two Nitrogen Fertilizer Sources*. 2004. Co-PIs: Osmond, Crozier, Weisz. Georgia Pacific. 3/2004-12/2006. **$76,425.**
43. *Southern Regional Water Quality Grant: Regional Nutrient Management Education*. 2004. PI: Osmond. CSREES. **$45,000.**
44. *NC CREP Environmental Monitoring*. 2004. Co-PIs: Burchell, Line, Osmond, Evans, Parsons, Hall, Moorman, Gilliam, Grabow. NCDENR. 1/04-12/07. $1,200,000. **($100,000).**
45. *Validating the Phosphorus Loss Assessment Tool for the Organic Soils of North Carolina*. 2003. Co-PIs: Maguire and Osmond. WRRI. **$50,500.**
46. *Refining Phosphorus Loss Assessment Process for North Carolina*. 2003. Co-PIs: D. Osmond and W. Gilliam. USEPA 319, DENR. **$124,924.**
47. *Validating Phosphorus Losses in the Lower Coastal Plain: Phase I, Field Scale.* 2003. Co-PIs: Skaggs, Chescheir, Osmond and Gilliam. USEPA 319. $100,000. **($0)**
48. *Determining the Effectiveness of a Naturally Revegetating Woody Riparian Area*. 2002. Co-PIs: D. Osmond, W. Gilliam, and C. Moorman. NRCS. **$50,017.**
49. *Adoption of the Nutrient Management Support System (NuMaSS) Software Throughout Latin America*. 2002. Co-PIs: J. Smyth, D. Osmond, and L. Hosner. USDAID – Soil Management CRSP. 2002-2007. $1,250,000. **($200,000).**
50. *Nutrient Management for Agriculture in North Carolina*. 2001. Osmond. NCDENR-319 Fund. s **$21,500.**
51. *Determining the Effectiveness of Shrub Buffers to Reduce Nitrate-nitrogen from Agricultural Fields in a Coastal Plain Setting*. 2001. NC Water Quality Workgroup, WRRI. Co-PIs: Osmond, Hardy, Gilliam, Evans. 7/01 - 6/03. **$64,702.**
52. *Updating WATERSHEDSS*. 2000. Co-PIs: Osmond, McLaughlin, Spooner, Hargrove, Bellas. NCDENR-319 Funds. 10/1/00-9/30/03. **$108,167.**
53. *Home*A*Syst and Farm*A*Syst: Pollution Prevention Programs for Homeowners and Farmers.* 2000. Co-PIs: Osmond, McLaughlin, Hunt, Chilcote. **$121, 263.**

54. *Sample Analysis: Comparison of Field-scale and Aggregated Versions of NLEW*. 2000. Osmond. NCDENR-319 Funds. 5/1/00-9/30/00. **$30,000.**
55. *Sample Determination and Collection: Comparison of Field-scale and Aggregated Versions of NLEW*. 2000. PI: Osmond. NCDENR-Albermarle-Pamlico Program. 5/1/00-9/30/00. **$137,500.**
56. *Neuse Cucumber and Wheat Research.* 1999. PI: Osmond. Neuse Education Team. 10/99-9/00. **$ 4,000.**
57. *Maintenance of Neuse Team Web Site.* 1999. PI: Osmond. Neuse Education Team. 10/99-9/00. **$1,000.**
58. *Neuse Crop Management Project.* 1998. PI: Osmond. Pew Charitable Trust and USEPA. 12/98-12/02. **$867,000.**
59. *Maintenance of CALS Water Quality Web Site.* 1998. PI: Osmond. Water Quality Initiative Funds. 10/98-9/99. **$1,500.**
60. *No-Till Management Practices for Improved Cucumber Production.* 1998. Co-PIs: Schultheis, Osmond, Monks, & Holmes. North Carolina Vegetable Growers Association. 4/98-3/99. **$3,500.**
61. *North Carolina Home*A*Syst.* 1998. Co-PIs: Osmond and Jennings. Water Quality Initiative Funds. 10/98-9/99. **$13,000.**
62. *Demonstrating Nitrogen Reducing Agricultural BMP Systems in the Neuse River Basin.* 1998. Co-PIs: Osmond, Jennings, McLaughlin, Evans, Regans, Lord, Hardy. Clean Water Management Trust Fund. 10/98-9/01. **$321,000.**
63. *Neuse Related Educational Activities: Second proposal.* 1998. PI: Osmond. Neuse Education Team. 3/98-6/98. **$14,000.**
64. *No-Till Management Practices for Improved Cucumber Production.* 1997. Co-PIs: Schultheis, Osmond, Lord, Monks, Holmes, Jester, Little, Regans. Pickle Packers International. 4/97-3/98. **$1,500.**
65. *Decision Aids for Integrated Soil Nutrient Management.*1997. Smyth, Osmond (co-principal investigator). Soil Management Collaborative Research Project, U.S. AID grant. 1997-2001. $4,967,666. **($200,000).**
66. *Nutrient Management Evaluation for the Neuse River Basin.* N.C. 1996. Co-PIs: Line, Osmond, Jennings, and Spooner. NCDENR-319 grants. 11/96 - 8/98. **$40,000.**
67. *Neuse Related Educational Activities.* 1997. PI: Osmond. Neuse Education Team. 10/97-6/98. **$11,000.**
68. *Maintenance of CALS Water Quality Web Site.* 1997. PI: Osmond. Water Quality Initiative Funds. 10/97-9/98. **$2,000.**
69. *North Carolina Home*A*Syst.* 1997. Co-PIs: Osmond and Jennings. Water Quality Initiative Funds. 10/97-10/98. **$12,000.**
70. Compre*hensive Farm Planning to Protect Water Quality*. 1997. Co-PIs: Osmond, Jennings, Line, Hodges, McLaughlin, Hoban, Spears, Spooner. NCDENR-319 Funds. 5/1/97-9/30/00. **$60,000.**
71. *Crabtree Creek and Swift Creek Urban Watershed Project*. 1997. Co-PIs: Jennings, Osmond, Spooner. NCDENR-319 Funds. 3/97 - 2/2000. $110,000. **($0)**

72. *Nutrient Education Materials for the Neuse River Basin.* Neuse Education Team. 1997. PIs Osmond and Hodges. 10/97-6/98. **$15,000.**
73. Understanding the Role of Agricultural Landscape Feature Function and Position in Achieving Environmental Endpoints. U.S. Environmental Protection Agency. 1993. Co-Principal Investigator. 10/93 - 10/96. **$275,000.**

Scholarly and professional honors

American Society of Agricultural Engineers, ASAE Blue Ribbon Award for Outstanding Entry in the Educational Aids Competition for Publications, 2000; Election to ASA Division Chair, 2000; USDA Group Honor Award for Excellence, Neuse Team, 2000;USDA-CSREES Award for Comprehensive Educational Program to Improve Water Quality in the Neuse River Basin, 2000; Professional Achievement Award - Water Quality, Hugh Hammond Bennett Chapter of the Soil and Water Conservation Society, 2004; USDA Secretary's Award for Protecting and Enhancing the Nation's Natural Resource base and Environment, Phosphorus Loss Assessment Tool Team, 2004; Extension Education Award: team award – Neuse Education Team. NC Association of Cooperative Extension Specialist - For Outstanding Subject Matter Program, 2004; Walton S. Dennis Award for Environmental Stewardship. 2004. Crop Protection Association of North Carolina, December 2004; 2005 *Gamma Sigma Delta* Certificate of Merit, NC State University; Academy of Outstanding Faculty Engaged in Extension (2005 Inductee), NC State University, 2005; Agronomic Extension Education Award, American Society of Agronomy, 2006; American Society of Agronomy Fellow, 2007; Distinguished Service Award, Corn Growers Association of NC, 2010; Recipient of 2010 Project of Excellence for NIFA National Water Program, 2010; American Society of Agronomy, ASA Distinguished Service Award, ASA Division Alignment Transition Team, co-chair , 2011; American Society of Agronomy, ASA Distinguished Service Award, ASA Division Alignment Task Force, 2011; Soil Science Society of America Fellow, 2014.

Technological Innovations

Website:

- Osmond, D.L., D.E. Line, J.A. Gale, R.W. Gannon, C.B. Knott, K.A. Bartenhagen, M.H. Turner, S.W. Coffey, J. Spooner, J. Wells, J.C. Walker, L.L. Hargrove, M.A. Foster, P.D. Robillard, and D.W. Lehning. 1995. *WATERSHEDSS: **Water**, **S**oil and **H**ydro-**E**nvironmental **D**ecision **S**upport **S**ystem*, http://www.water.ncsu.edu/watershedss/

Software:

- Osmond, D., V. Cox, D. Crouse, and J. Hudyncia. 2010. NCANAT_Web, Version 1.0. NC State University, NCDENR, and NCDA&CS. Raleigh, NC.
- Osmond, D.L., D. Crouse, K. May and R. Gannon. 2008. NLEW: Nitrogen Loss Assessment Worksheet, Aggregated Version 5.32 for the Neuse River Basin. NCDA, NCDENR, NCSU, NRCS. Raleigh, NC.
- Osmond, D.L., T.J. Smyth, W.S. Reid, R.S. Yost, W. Branch and X. Wang. 2000. *Nutrient Management Support System, NuMaSS (Version 1.5).* Soil Management Collaborative Research Support System, NC State University, Raleigh, NC.

Extension and Engagement Activities

Fact Sheets and Slide Sets (22 of 71)

1. Osmond, D., D. Meals, D. Hoag, M. Arabi, A. Luloff, G. Jennings, M. McFarland, A. J. Spooner , Sharpley, and D. Line. 2012. Locally Led Efforts to Protect Water Quality in Agricultural Watersheds. (A national slide set developed from the NIFA CEAP for farmer-led watershed organizations.)
2. Osmond, D. L., D. W. Meals, A. N. Sharpley, M. L. McFarland, and D. E. Line. 2012. Lessons Learned from the NIFA-CEAP: Conservation Practice Implementation and Adoption to Protect Water Quality. NC State University, Raleigh, NC. http://www.soil.ncsu.edu/publications/NIFACEAP/Factsheet_2.pdf.
3. Osmond, D.L. and W.G. Lord. 2011. *Jordan Lake Nutrient Management Training*. Slide sets for agents to present for mandatory training.
4. Arnall, B., R. Flynn, M. McFarland, C. Mitchell, M. Mozaffari, and D. Osmond. 2011. *Alternative N-fertilizer: Do They Work Better?* Slide set for southern-region extension agents.
5. Osmond, D. 2010. Web-based Sessions for Certified Nutrient Management Training: Nutrients and Water Quality in Certification Training for Nutrient Management Planners. Internet Seminar. URL http://goo.gl/AgBS.
6. Cahill, S.L., D.L. Osmond, R. Weisz, and R. Heiniger. 2010 SoilFacts: Alternative, Synthetic Nitrogen Products for Row Crop Production. NC Cooperative Extension, AG-439-74W.
7. Cahill, S.L., D.L. Osmond, R. Gehl, D. Hardy, and C. Crozier. 2010. Soil Facts: Starter Phosphorus Fertilizers in North Carolina, AG 439-75W.
8. Osmond, D.L. and W. Lord. 2010. *Jordan Lake Nutrient Management Training.*
9. Osmond, D.L. and J. Kang. 2008. *Soil Facts: Nutrient Removal by Crops*. AGW 439-16W.
10. Osmond, D.L. and W. J. Gilliam. 2006. SoilFacts: Agricultural Riparian Buffers. AGW439-38.
11. Osmond, D.L., R.O. Evans, D.H. Hardy, L. Price, and A.M. Johnson. 2005. *The Phosphorus Loss Assessment Tool.* Raleigh, NC. AG 439-56.
12. Osmond, D.L., D.H. Hardy, J. Rideout. 2005. *North Carolina Soil Testing (cd).* NC State University. Raleigh, NC.
13. Osmond, D.L., A.H. Bruneau, and J.H. Monroe. 2004. *Water Quality and Nutrient Management Education for Piedmont River Basins in North Carolina with an Emphasis on Turf.* Slide Set. North Carolina Cooperative Extension Service, NC State University. Raleigh, N.C.
14. Osmond, D.L., S.C. Hodges, H.J. Kleiss, N.G. Creamer, C.R. Crozier, M.A. Cubeta, D.H. Hardy, W.R. Jester, W.G. Lord, J.R. Schultheis, R. Weisz, 2003. *Tar-Pamlico River Basin Nutrient Management Education*. Slide Set. North Carolina Cooperative Extension Service, NC State University. Raleigh, NC.
15. Hardy, D.H., D.L. Osmond, and R. Reich. 2003. *Deep Soil Sampling*. Soil Facts AGW-439-40. NC State University, Raleigh, NC.
16. Osmond, D.L., G. Putnam, L. Xu, G.R. Lawrence, and J. Young. 2003. *Improving Lawn Care and Gardening in Coastal North Carolina*. Coast*A*Syst Fact Sheet #2. AG-565-02. North Carolina Cooperative Extension Service, NC State University, Raleigh, NC.

17. Hardy, D.H., D.L. Osmond, A. Wossink. 2002. *The Economics of Fertilizer Management.* Soil Facts, AG439-45. NC State University, Raleigh, NC.
18. Osmond, D.L., C.R. Crozier, and D.H. Hardy. 2002. *Careful Soil Sampling.* Soil Facts, AG-439-30.
19. Evans, E. and D. Osmond. 2001. *A Gardener's Guide to Soil Testing*. AG-614. North Carolina Cooperative Extension Service. NC State University, Raleigh, NC.
20. Wossink, A. and D. Osmond. 2001. *Cost and Benefits of Best Management Practices to Control Nitrogen in the Upper & Middle Coastal Plain*. AG-621. North Carolina Cooperative Extension Service. NC State University, Raleigh, NC.
21. Hodges, S.H., Osmond, D.L., Kleiss, H.J., Creamer, N.G., Crozier, C.R., Cubeta, M.A., Jester, W.R., Schultheis, J.R., Weisz, R. 2000. *Neuse River Basin Nutrient Management Education.* Slide Set. North Carolina Cooperative Extension Service, NC State University. Raleigh, NC.
22. Osmond, D.L., and J. Spooner. 1995. *Selecting an Agricultural Water Quality Project: The Rural Clean Water Program Experience*. RCWP Technology Transfer Fact Sheet No. 3. NCSU Water Quality Group, North Carolina Cooperative Extension Service, Biological and Agricultural Engineering Department, NC State University, Raleigh, NC. 6p.

Trainings (14 of 114)

1. New Corn Yields for NC: Does It Change Nitrogen Requirements? 2014. Craven County Animal Waste Operators Certification. ~ 25 farmers and participants.
2. Nutrient Management Update for Animal Waste. 2013. Eastern NC Certified Crop Adviser Training, Jacksonville, NC. ~ 55 CCAs.
3. Producer Training. Fresh Market Tomato and Vegetable Field Day: An Update, Mountain Horticulture Research Station Field Day. 2013. Effects of Organic and Conventional Production Systems under Conservation and Conventional Tillage on Water Quality. Josh Edgell, Deanna Osmond, Dan Line, Greg Hoyt, and Julie Grossman, Department of Soil Science and Bio and Ag Engineering, NCSU. ~ 100 growers.
4. Riparian Buffers. 2013. Pork Council Continuing Education. ~75 people
5. Phosphorus Index: SERA-17 Perspective into the Future. 2012. Mid-Atlantic CCA Training. ~100 CCAs.
6. Conservation Practice Effectiveness: Lessons Learned. NRCS Thematic VTR for State Conservationist. 2012. ~ 50 agency personnel.
7. Animal Waste: Matching Source to Needs. NC Organic Growers School. 2012. ~ 70 growers.
8. Producer Training. Cattlemen meeting, Chatham County. 2011. Basin Rules. ~50 producers.
9. Riparian Buffer Training. 2010. Planning, designing & establishments of riparian buffers at CEFS. ~50 NRCS or cooperative extension employees.
10. Piedmont producers. 2009. Starter Fertilizers and Fertilizer Additives. 100 farmers.
11. 2008 Wheat Training: Nutrisphere and Avail Fertilizer Additives. 55 NC CES agents.

12. Southern States Advanced Crops and Soils Training: Water Quality Issues, Including Buffers and Regulations and Agriculture Nutrient Assessment Tools. 2005. 2-shours CCA Credit. 50 Southern State employees.
13. Implementing a Nutrient Management Plan. 2004. Soil and Water Conservation District Trainings for Animal Operators. Four trainings (2 Moore, 1 Randolph) ~ 250 agency personnel.
14. Phosphorus Loss Assessment. 2002. Pork Council. ~30 farmers.

Impact of Extension Program

Dr. Osmond has delivered her extension program to multiple audiences (farmers, certified crop advisors, agency personnel, commodity organizations, extension agents, the general public, congressional aids, and leadership in state and federal agencies, such as USEPA, USDA-NRCS, and NCDENR) using various forms of outreach. To provide the most up-to-date and best science-based information, outreach vehicles have included computer tools, webinars, fact sheets, presentations, and training materials. Some of these outreach tools have been informational, whereas others such as the computer tools (NLEW and PLAT) were required by the state or federal government. Locally, she has vetted mandatory training programs through county agents to ensure soundness of programming. Nationally, she has provided important information to congressional staffers, high-ranking USDA and EPA officials, and other high visibility extension venues. In summary, Dr. Osmond has a highly integrated research and extension program. Her robust and multi-dimensional research program is conducted based on extension questions in the areas of nutrient management, conservation practice effectiveness, watershed planning and water quality protection; her research data then inform the development of extension materials, which are then transmitted to the appropriate constituents at local, state, and national scales.

Service (selected)

- ***National and International Activities:*** NIFA Southern Region, Chair Nutrient Management (2005 - 2012); American Society of Agronomy, Elected Division Chair A-5 (1999); American Society of Agronomy, Board Representative A-5 (2008-2010); American Society of Agronomy, Realignment Team Co-Chair (2009-2010); Soil and Water Conservation Society, Water Resources and Management Technical Team Leader (2009 - 2011); NRCS P-Index Panel (2009-2010); SERA 17, Incoming- , Current-, and Past Chair (2012-2014)
- ***State Activities***: NC Pasture Point System Chair (2010 2014); NC Agricultural Task Force (2010–2014); Interagency Nutrient Management Committee (2001-2014); Phosphorus Standards Committee (2000–2014); Nitrogen Loss Estimation Worksheet Committee (1998 - 2014); Advisor to Board of the Corn Growers of North Carolina (2004-2014) ;Advisor to Board of the Plant Food Association of North Carolina (2002-2014); Jordan Lake Watershed Oversight Committee (2010-2014); Falls Lake Watershed Oversight Committee (2011 - 2014); North Carolina Soil Science Society, Incoming-, Current-, and Past Chair (2013-2015)
- ***NCSU and Departmental Committees:*** Soil Science Advisory Group (1999-2000, 2004-20014); NCCES Marketing Committee (2007, 2008); College Reappointment, Promotion and Tenure Committee (2008-2009); Crop Protection Program Committee Chair (2009); College Reappointment, Promotion and Tenure Committee Chair (2009); Nominating committee for the Associate Dean and Director of the North Carolina Cooperative Extension Service (2010); NC State University Promotion and Tenure Committee (2011-2012)

Dr. Krishna P. Pande [redacted]

Objective

To serve the country as a member of Science Advisory Board.

Highlights of Achievements

Pioneering contribution to satellite payload, MMICs, III-V semiconductors and radio for wireless communications and solar power generation.

- Supervised the development of over a hundred Microwave/mm-wave products for radio communications, radar and satellites. Also looked into MMIC sensor for soil pH measurement and MIS sensor for gas detection.
- Throughout career, developed alliances with over 25 companies for joint product development.
- Founder of two high-tech companies using own technology innovations in radio communications.
- Participated various governmental and IEEE and AIAA committees.
- Captured over $100 million R/D funding from U.S. government while managing operations.
- Raised over $20 million investment for start-up companies.
- No funding during last 2 years

Current Position:

CEO and founder of Microvoyage corp. Gaithersburg (MD), a start-up company addressing 5G radio technology.

Past Positions:

Full professor, EECS, NCTU (Taiwan)

- Taught M.S./ Ph. D level courses on circuit design. and wireless radio communications. Supervised M.S. / Ph. D students on circuit design, Solar cells and next-gen transistors.

- Developed a proposal, on wireless power transfer -for funding from Ministry of Science and Technology.
- Guest Editor for Active and Passive Electronic Components Journal special issue on III-V semiconductors for high frequency applications

Senior Director/ Director , Advanced Radio Systems

Director, Advanced Technology Solutions

Rockwell Collins, Cedar Rapids (IA) and Arlington (VA)

- Managed Advanced Radio System Dept involved with the development of all facets of software defined radio.
- Supervised the development of a number of technologies(industry first) including broadband cognitive radio, XG Sensors, SDR for commercial avionics, beam forming antenna, analog spectral processor etc.
- DARPA/ONR technology programs won under my leadership includes XG Sensor, CSAC, FCS-R, ASP, CSSA, RADER, MPC, EMD, META II, APAC, MMRF, MicroBaseLine, BAVA (ONR), ATDL (ONR) etc..
- Established first photonics center in Rockwell Collins and assisted PIs to win large DARPA contract.
- Chaired Corporate Panel on radio technology.
- Managed research alliances with universities including the University of Illinois at Urbana-Champaign, Purdue University and Iowa State University.
- Participated in the 10X Research and Intellectual Property Steering Committees.
- Provided advanced technology solutions to government customers (e.g. DARPA, ONR, IARPA, NASA etc.) and secured strategic R/D contracts (leveraged capture of over $100M).

President, Anova Broadband, Chantilly, VA (Co-Founder)

- Supervised the development of 5.8 GHz Wi-Fi 802.11**a** gateway and next generation intrusion detection technology for network security (light sense).
- Wrote proposals for SBIR on "beam-forming technology, ultra-high-speed processor for mm-wave satellites application" and a "novel microwave-optical modulator."
- Generated Anova business plan performed marketing functions and secured commitment for $1.1 million investment. Marketed Anova products globally

CEO, Synoptel Corporation (Co-founder), Chantilly (VA)

- Conceived and supervised the development of innovative Ka-band subscriber terminals for multi-media communications (simultaneous voice, video and data delivery.

- Demonstrated VoIP, on-demand video, and high-speed Internet (64Mb/s) using Synoptel subscriber terminal and base station radio.
- Conceived an innovative pulse position modulation technology and initiated the development of mm-wave collision warning sensor.
- Secured $5M first- round funding with commitment for addition $10M .
- Captured customers in Australia, Taiwan, Malaysia and India.
- Participated in LMDS Standards committee.

President, Synoptel, Inc., Gaithersburg, MD (founder)

- Founded Synoptel to address wireless communications market
- Conceived the design of point-to-point mm-wave radio,
- Designed MMIC sensor for soil pH measurement and MIS sensor for gas detection
- Secured a contract from C-COR and designed HBT transmitter for cable TV application.
- Secured a contract on for deep space transmission from NASA
- Provided technology and business consulting services to Bellcore (Li-Ion battery, wireless comm. and WDM) and ITT. (MMIC insertion into subsystems).

Executive Vice President & General Manager

Microwave Signal Inc., a Subsidiary of AMP, Inc. Clarksburg, MD

- Supervised the design and development of subsystems for leading edge communications, Wireless LAN, satellites including (MILSTAR and INTELSAT VII), seeker and radar
- Provided the technology leadership for NOMAD T/R program for comm on the move
- Captured over $10 million funding for the design and development of microwave subsystems.
- Established alliances with global customer base in Italy, Canada and Japan

Executive Director, Microwave Electronics Division, COMSAT Laboratories, Clarksburg, MD.

- Managed Microwave Electronics Division with groups on microwave/subsystems, microwave/mm-wave circuit design, Satellite payload, chip foundry, reliability and materials. Secured the MIMIC-phase1 program from DARPA/TRW for mm-wave chip design and 0.15 micron foundry services.
- Captured- $15 million in funding for the design/ development of MMIC chip and sub-systems.
- Supervised the development and production of microwave components/subsystems (1 GHz to 94 GHz) for commercial and defense systems and satellite payloads.

- Supervised insertion (first in the industry) of MMIC modules in over 20 commercial and MILSTAR satellites.

Director, Sperry /Unisys Corporation, Eagan (MN)

- Managed a R/D department comprising of, MMIC design, GaAs circuit design, chip fabrication, and HEMT development.
- Managed the efforts of 0.25 micron silicon BiCMOS, advanced packaging and advanced lithography groups during the transition from Sperry to Unisys as Director of Research.
- Provided technical leadership for the MMIC insertion into systems produced by three major defense divisions (missile, radar and communications) of Sperry Corporation.
- Led the marketing and proposal development efforts for MIMIC program from DARPA, which was won.

Research Manager, Bendix Corporation, Columbia (MD)

- Established R/D Groups for the design and development of GaAs MMICs and InP ultra high speed integrated circuits . Developed world's first InP transistor and gigabit logic
- Supervised the thesis of a PhD student on InP heterojunction, in conjunction with University of Maryland
- Developed and taught a MS course on Compound Semiconductor Integrated Circuits as adjunct faculty member of the University of Maryland, College Park.

Assistant Professor, EE Dept. Ruther University, Piscataway, NJ

- Taught MS course on solar power and BS course on Circuit Analysis.
- Conducted research on InP MIS/ heterojunction devices and solar cells.
- Designed MO-CVD system, and solar cell testing facility.
- Secured R/D contracts on solar cells.
- Supervised research thesis of 2 MS students.

EDUCATION

Ph.D. Solid State Physics, Indian Institute of Technology

Over 75 publications, 8 patents and 22 other inventions as trade secrets

PROFESSIONAL AFFILIATIONS

Fellow, Institute of Electrical and Electronic Engineering (IEEE)

Senior Member, American Institute of Aeronautics and Astronautics (AIAA)

HONORS AND AWARDS

- 2003 Aerospace Communications Award for “Pioneering the development and application of semiconductor monolithic microwave integrated circuit (MMIC) subsystems, advancements in solar cell technology and for overall leadership in the design of space communication satellites".
- Inducted into The National Aviation and Space Exploration Wall of Honor
- Honored with Photo-op with President Obama and his wife during White House reception in 2015.
- Commendation letter from President Bill Clinton for championing for science budget increase.
- Sperry Semiconductor outstanding contribution award
- Allied Signal Corporate Recognition Award given by Chairman
- Invited to President Mandela honor gala.
- Invited speaker in over 25 National/International conferences, universities and research organizations.
- Interviewed for multi-media technology insight by the Minneapolis Star

Tribune, Business Week, and other Asian television networks.

- Past Member MIT Electromagnetic Academy and NY Academy of Sciences
- Over 20 Biographical citations including, Who’s Who in Science and Technology, Who’s Who of American Inventors, Distinguished Americans for Contributions to Science and Technology

COMMITTEEES & ADVISORY BOARDS

- Current committees include AIAA Technical Committee on Communication Systems, AIAA Award committee and pledge for IEEE INSIGHT
- Past committees include Chair, AIAA Iowa chapter; Award Committee for AIAA Capital Chapter; Session Chair for "Space Telecommunications" in International Space Symposium (2003): Organizer and Chair of mm-wave technology session in PIERS-2002; AIAA Communications and Space Systems Committees; ERC Technology Advisory Committee for US National Science Foundation; International Electron Device Research-technical committee; Gallium Arsenide Manufacturing Technology Committee; Indo-US Microelectronics Committee; University of Cincinnati and University of Maryland Engineering Department Advisory Boards; IEEE Admission and Advancement Committee; UNIDO Technology Advisory Committee: Vice Chairman IEEE Washington/N. Virginia ED Chapter; Howard County Strategic planning committee for "Toward the Year 2000" - Community Task Force; Howard County Education Advisory Council for Science and Mathematics. AIAA Cognitive Radio Working Group (IEEE) and Nanotechnology Manufacturing committee and WDM LAN standard committee for avionics, US-South Africa Business Council. Team member of “Partner in The Sky”, an Smithsonian initiative for conservation., Mentor for Micromenter Organization[on. Served as technical and strategic business advisor to Digital Broadband Network, Phoenix Microwave, Eagle Eye Technology, Princeton Electronic Systems, Hexawave and US-Korea Technology forum

Richard E Peltier

Curriculum Vitae
Updated July 2017

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EDUCATION:

Georgia Institute of Technology, School of Earth and Atmospheric Sciences — Atlanta, GA
PhD – Atmospheric Chemistry, Dec 2007
Advisor: Rodney J. Weber
Dissertation entitled:
"Ambient Submicron Particle Composition in North America: Their Sources, Fate, and Impact"

Columbia University, Mailman School of Public Health — New York, NY
Masters of Public Health – Environmental Health Sciences, Dec 2001

University of Massachusetts — Amherst, MA
B.S. Biology, May 1997

PROFESSIONAL APPOINTMENTS:

2016- present	Associate Professor, Department of Environmental Health Science, University of Massachusetts
2010-2016	Assistant Professor, University of Massachusetts, Amherst, Department of Public Health, Division of Environmental Health Science Adjunct Assistant Professor, University of Massachusetts Civil and Environmental Engineering Department
2009-2010	*Pathway to Independence (K99) Postdoctoral Fellow*, NYU School of Medicine Department of Environmental Medicine, Tuxedo, NY
2007 – 2009	*NRSA Postdoctoral Fellow*, NYU School of Medicine, Department of Environmental Medicine, Tuxedo, NY

PUBLICATIONS:

In preparation

1. Pant, et al. Personal Exposure to Air Pollutants in Vietnam: A Pilot Study.
2. Pant and Peltier, NYC Source Apportionment, In Prep for Atmospheric Measurements and Technology
3. Pant and Peltier, Monitoring Particulate Matter in India: Recent Trends and Future Outlook , in prep for Environmental Science and Policy.
4. Pasko et al, Conducting Field Research in Remote Regions: Challenges and Adaptive Strategies, in prep.

Submitted/In revision/Accepted (not yet published)

1. Pant et al, Speciation and spatial variability of PM2.5 in Delhi, India. Submitted, APR

In press (45 articles in total)

2017 Shakya, K. M., Rupakheti, M., Shahi, A., Maskey, R., Pradhan, B., Panday, A**. Peltier, R. E**. (2017). Near-road sampling of PM2. 5, BC, and fine-particle chemical components in Kathmandu Valley, Nepal. *Atmos. Chem. Phys., 17*(10), 6503-6516. doi:10.5194/acp-17-6503-2017

2017 Shakya, KM**, Peltier, RE**, Shrestha, H., Byanju, RM. Measurements of TSP, PM_{10}, $PM_{2.5}$, BC, and PM chemical composition from an urban residential location in Nepal. Atmospheric Pollution Research, (advanced online), 1-9.

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2016 Shakya, KM, Noyes, A., Kallin, R, and **RE Peltier.** Evaluating the Efficacy of Cloth Facemasks in Reducing Particulate Matter Exposure. J Exposure Science and Environmental Epidemiology, 00, 1-6

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2006 Brock, C.A., A. Sullivan, R. Peltier, R.J. Weber, J. deGouw, T.S. Bates, T. Quinn, A.M. Middlebrook, D.M. Murphy, E. Atlas, A. Stohl, M. Trainer, O.R. Cooper, F.C. Fehsenfeld, J.S. Holloway, G. Hubler, P.K. Hudson, J.A. Neuman, T.B. Ryerson, C. Warneke, and J.C. Wilson, Chemical and microphysical evolution of aerosols transported from the east coast of United States, *American Geophysical Union, Dec 10-15, San Francisco CA*, 2006.

2006 Weber, R , Sullivan, A, Peltier, R, Hennigan, C, Yan, B, Zheng, M, Kaynak, B, Russell, A, Brock, C, de Gouw, J, Warneke, C, Holloway, J, Atlas, E, Edgerton, E. Investigating the Formation of Ambient Secondary Organic Aerosol in Southeastern USA. *American Geophysical Union, Dec 10-15, San Francisco CA*, 2006.

2006 de Gouw, J.A., C. Brock, C. Warneke, A.M. Middlebrook, W.C. Kuster, P.D. Goldan, B.M. Lerner, E.J. Williams, J.S. Holloway, F.C. Fehsenfeld, R.E. Peltier, A.P. Sullivan, R.J. Weber, T.B. Onasch, P.K. Quinn, T.S. Bates, and E.L. Atlas, Organic aerosol is formed in unexpectedly large amounts in urban plumes, *American Geophysical Union, Dec 10-15, San Francisco CA.*, 2006.

2005 Bahreini, R., B. Matthew, A.M. Middlebrook, F.C. Fehsenfeld, R. Peltier, R. Weber, K. Shulz, and P. Quinn, Comparisons of Aerosol Phase Sulfate, Nitrate, and Ammonium Concentrations Measured by an Aerodyne Aerosol Mass Spectrometer and a Particle Into Liquid Sampler, *American Geophysical Union, Dec 5-9, San Francisco CA*, 2005.

2005 Brock, C., A. Wollny, J.d. Gouw, C. Warneke, J. Holloway, A.M. Middlebrook, D. Murphy, A. Neuwman, R. Peltier, and R. Weber, Transport and Evolution of Aerosol Plumes from Urban and Industrial Sources in the Eastern U.S., *American Geophysical Union, Dec 5-9, San Francisco CA*, 2005.

2005 Brown, S.S., T.B. Ryerson, A.G. Wollny, C.A. Brock, R. Peltier, A.P. Sullivan, R.J. Weber, W.P. Dube, M. Trainer, J. Meagher, F.C. Fehsenfeld, and A.R. Ravishankara, Variability in nocturnal nitrogen oxide processing and its role in regional air quality, *American Geophysical Union, Dec 5-9, San Francisco CA*, 2005.

2005 Hennigan, C., S. Sandholm, R.J. Weber, R. Peltier, G. Huey, R. Stickel, and S. Kim, Regional impact of the Ohio River Valley on boundary-layer SO4 concentrations: Results from INTEX-NA, *American Geophysical Union, Dec 5-9, San Francisco CA*, 2005

2005 Midddlebrook, A.M., B. Mathew, R. Bahreini, C. Brock, A. Wollny, J.d. Gouw, C. Warneke, J. Holloway, F.C. Fehsenfeld, R. Peltier, and R. Weber, Airborne Aerosol Mass Spectrometer Measurements of the Submicron Aerosol Chemical Composition Downwind of Sources, *American Geophysical Union, Dec 5-9, San Francisco CA*, 2005.

2005 Peltier, R., C. Hennigan, A. Sullivan, R. Weber, C. Brock, A. Wollny, J. Holloway, J. deGouw, and C. Warneke, Fine Particle Composition Measured During ICARTT – An Overview of Inorganic Ions and Water Soluble Organic Carbon, *American Geophysical Union, Dec 5-9, San Francisco CA*, 2005.

2005 T.J. Fortin, T.J., T.B. Ryerson, J.S. Holloway, J.A. Neuman, F. Flocke, A. Swanson, J.A. de. Gouw, C. Warneke, L.G. Huey, D.J. Tanner, H. Stark, C.A. Brock, A.G. Wollny, R.J. Weber, R. Peltier, A. Sorooshian, J.H. Seinfeld, and F.C. Fehsenfeld, Characteristics and Chemistry of Power Plant Plumes: Conesville Case Study, *American Geophysical Union, Dec 5-9, San Francisco CA*, 2005.

2005 Wollny, A., C. Brock, O. Cooper, F.C. Fehsenfeld, J. DeGouw, P. Hudson, A.M. Middlebrook, D. Murphy, A. Stohl, C. Warneke, R. Peltier, and R. Weber, Chemical and microphysical properties of particles in aged plumes from forest fire in Alaska and western Canada, *American Geophysical Union, Dec 5-9, San Francisco CA*, 2005.

2005 Heald, C L, Jacob, D J, Park, R J, Turquety, S, Hudman, R C, Weber, R J, Peltier, R , Sullivan, A, Russell, L M, Huebert, B J, Seinfeld, J H, Liao, H Modeling the Sources of Organic Carbon Aerosol in the Free Troposphere. *American Geophysical Union, Dec 5-9, San Francisco CA*, 2005.

2005 Midddlebrook, A.M., B. Mathew, C. Brock, A. Wollny, J.d. Gouw, C. Warneke, J. Holloway, F.C. Fehsenfeld, R. Peltier, and R. Weber, Major Sources of Submicron Aerosol Mass above the Northeastern

United States Inferred from Airborne Aerosol Mass Spectrometer Measurements during ICARTT, *American Association of Aerosol Research, Austin TX, Oct 17-21*, 2005.

2005 Peltier, R., C. Hennigan, A. Sullivan, R. Weber, C. Brock, and A. Wollny, Fine Particle Composition Measured During ICARTT – An Overview of Inorganic Ions and Water Soluble Organic Carbon, *American Association of Aerosol Research, Austin TX, Oct 17-21*, 2005.

2005 Sullivan, A., R. Peltier, and R. Weber, A Method for Airborne Measurements of Water-Soluble Organic Carbon: PILS-TOC results from the NOAA WP-3D during ICARTT, *American Association of Aerosol Research, Austin TX, Oct 17-21*, 2005.

2005 Brock, C., A. Wollny, R. Peltier, R. Weber, J. Holloway, A. Middlebrook, P. Hudson, D. Murphy, A. Neuman, L. Huey, Transport and evolution of an urban aerosol plume form the east coast of the United States, *European Geophysical Union, Vienna, Austria*, 2005.

2005 Wollny, A.G., Brock, C.A, O.R. Cooper, F. C. Fehsenfeld, J.A.d. Gouw, P. K.Hudson, B.M. Matthew, A. M. Middlebrook, D.M. Murphy, C. Simons, A. Stohl, C. Warneke, R. Peltier, R.J. Weber, and J.C. Wilson, Chemical and microphysical properties of particles in aged forest fire plumes from Alaska and western Canada observed over the Northeastern U.S., *European Geophysical Union, Vienna, Austria*, 2005.

2004 de Gouw, J.A., C. Warneke, A. Stohl, O.R. Cooper, P.K. Hudson, D.M. Murphy, C.A. Brock, F. Flocke, F.C. Fehsenfeld, J.S. Holloway, B. Matthew, A.M. Middlebrook, A. Neuman, J. Nowak, R. Peltier, J. Roberts, T. Ryerson, A. Swanson, M. Trainer, R. Weber, and A. Wollny, Long-range transport of smoke from 2004 forest fires in Alaska and western Canada, *American Geophysical Union, Dec 6-10, San Francisco, CA*, 2004.

2004 Middlebrook, A.M., B.M. Matthew, C.A. Brock, A. Wollny, J.A.d. Gouw, C. Warneke, F.C. Fehsenfeld, R. Peltier, and R. Weber, Preliminary Results of Aerosol Chemical Composition Measurements Above the Northeastern U. S. with an Aerodyne Aerosol Mass Spectrometer, *American Geophysical Union, Dec 6-10, San Francisco, CA*, 2004.

2004 Peltier, R., C. Hennigan, A. Sullivan, R.J. Weber, C. Brock, and A. Wollny, Initial Results of Airborne Measurements of PM1.0 Inorganic Ions and Water Soluble Organic Carbon During the New England Air Quality Study, Summer 2004, *American Geophysical Union, Dec 6-10, San Francisco, CA*, 2004.

2003 Peltier, R.E. Weber, R., A. Sullivan, Y. Ma, and K. Meier, Measurements of particle inorganic and organic chemical composition with the particle-into-liquid sampler (PILS), *Particulate Matter: Atmospheric Sciences, Exposure and the Fourth Colloquium on PM and Health, American Association of Aerosol Research, Pittsburgh, PA, March 31-April 4*, 2003.

2003 Peltier, RE., Gordon, C., Wood, M., Llewellyn, D., Usselman, M., Kingsley, G. When Graduate School Isn't Enough – How K-12 Partnerships Enhance Graduate Education. Proceedings of the American Association for the Advancement of Science. February 16th, 2003; (and as poster session: Celebrate Teaching Symposium, Georgia Institute of Technology. March 26th, 2003)

2002 Llewellyn, D., Usselman, M., Gordon, C., Peltier, R. Ready, Aim, Teach. Proceedings of the Professional and Organizational Development Annual Meeting. October 15th, 2002

HONORS AND AWARDS:

2017 US-UK Fulbright award to the University of York, UK.
2013 Elected to Delta Omega Honorary Society (Rho chapter)
2012 HEI Rosenblith New Investigator Award
2008 Dissertation Initiative for the Advancement of Climate Change Research (DISCCRS) Scholar
2006 John Bradshaw Award (for novel instrumentation development)
2005 Air and Waste Management Association (Georgia) Scholarship
2005 EAS Chair's Special Service Award
2002 Student and Teacher Enhancement Partnership (STEP) Fellowship, Georgia Tech
2000 Dean's Scholarship, Columbia University
1997 Senior Leadership Award, University of Massachusetts

RESEARCH GRANTS AND CONTRACTS

Currently Administered

UMass Clean Energy Extension (internal) 1/2017-9/2019 $25,000
Upfitting grant
Role: Principle Investigator
To upfit and renovate MassCEC-funded truck to support field studies in Mass DOER project

Massachusetts Clean Energy Center 2/2017-1/2018 $22,000
Procurement of a Mobile Sampler
Role: Principle Investigator
To procure a truck to upfit to a mobile sampler for DOER project.

Massachusetts Dept Energy Resources 2/2017-8/2020 $150,000
"Wood System Emissions and Public Health Assessment"
Role: Principle Investigator
To conduct wintertime field research to characterize commercial-scale wood smoke emissions.

EPA STAR (RD83560501) 5/2014-4/2018 $700,000
"Subsistence Hunting and Associated Activities of Native North Americans in Remote Communities"
Role: Principle Investigator
Study follows indoor air exposures in indigenous populations, including interventions strategies to mitigate exposures.

Worldwide Universities Network RDG 1/2016-12/2016 ~$56,000
"Air Sensors Everywhere"
Role: Principle Investigator
To establish a framework for DIY small pollution sensor approaches, with a focus on interventions in the developing world.

Institute for Advanced Sustainability Sciences 1/2016-12/2018 ~$56,000
"AOD and Source Composition in South Asia"
Role: PI
Assessment of optical properties of aerosol and chemical speciation in South Asia.

Past Funding

NIH (1K99ES017291) 9/2009-12/2010 $180,000
"Investigating Health Effects from Exposure to Organic Carbon and Nickel Aerosol"
Role: PI
A Pathway to Independence training award which transitions junior researchers towards independent research careers.

NIH (1R00ES017291) 10/2010-9/2014 $747,000
"Investigating Health Effects from Exposure to Organic Carbon and Nickel Aerosol"
Role: PI
Activation phase of K99 award to study aged aerosol effects in a murine model of atherosclerosis

Fairbanks North Star Borough (contract 111-0404) 12/2010-12/2011 $345,565
"Exploratory Research of Wintertime Aerosol Chemical Composition at a Ground Location in Fairbanks, Alaska"
Role: PI
Investigation of wintertime aerosol physicochemical composition in a subarctic community.

Canadian Institutes of Health Research (contract) 1/2011-6/2012 $237,300 (CAD)
"Human Airborne Particulate Mine Tailings Exposure in the Mushkegowuk Territory: The Victor Diamond Mine"
Role: Co-PI
Measurements of airborne metals in a remote aboriginal location in Northern Ontario thought to be affected by fugitive emissions from a large mining facility.

Health Effects Institute (Rosenblith Award) 9/2012-10/2015 $300,000
"Development of an online method for semi continuous measurements of reactive oxygen species formation associated with $PM_{2.5}$ exposure."
Role: PI
To design and build a novel air quality instrument based on a measure of in vitro ROS induction.

Sonoma Technology Inc (contract) 11/2012-6/2014 $33,503
"Investigating Aerosol Chemical Elements at an active Oilfield at Baldwin Hills, California"
Role: PI
Measurement of hourly metals in a remote industrial location in Los Angeles, CA

EMBARQ-India 4/2015-12/2015 $10,000
"Estimation of commuter exposure to air pollutants and associated health risks in New Delhi, India"
Role: PI
Measurements of personal exposures across a number of microenvironments in India.

Climate and Health Research Network (contract) 8/2015-1/2016 $26,643
"Speciation of PM pollution in Delhi and National Capital Region (NCR) using chemical markers and receptor modelling"
Role: PI
Measurement of chemical components of aerosol from surrounding region in Delhi, India

International Center for Integrated Mountain Development (contract) 9/2015-12/2015 $43,625
"Health Impacts of air pollution in the Kathmandu Valley, Nepal"
Role: Co-PI
A cohort study with traffic police exposure to air pollution on streets of Kathmandu.

Under Review or Pending

[redacted]

INVITED TALKS

2017 Peltier, RE, "Engaging Environmental Health Research with Low Cost Technologies". University of Cape Coast (Ghana) Faculty Lecture, April 20, 2017.

2016 Peltier, RE, 'Intervention Strategies in the Developing World to Improve Human Health' Institute for Advanced Sustainability Studies Invited Speaker, Potsdam, Germany. 23 May 2016.

2016 Peltier, RE, 'Air Sensors Everywhere'. University of Ghana Seminar Series, Accra, Ghana 26 May 2016

2015 Peltier, RE "NHRC Dissemination Event", Address to Nepal Health Minister, Annapurna Conference Center, Kathmandu, Nepal, 9 Oct 2015

2015 Peltier, RE "Up in the Air: Effects of Airborne Particulates on Human Health", University of Dhaka, Dhaka, Bangladesh, 06 Oct 2015

2015 Peltier, RE "Up in the Air: Tiny Particles and Big Problems" Provost Newman's Dinner Program, Amherst, MA 10 April 2015.

2014 Peltier, RE "New Methods and Approaches to Understand Particle Health Effects" Environmental Science and Engineering Seminars, Harvard University, 09 May 2014

2013 Peltier, RE "The Importance of Air Pollution on Human Health" High Level Update on Atmospheric Research in Nepal (Cabinet level address for Nepali government), Soaltee Conference Center, Kathmandu, Nepal, 26 Aug

2013 Nora Harrington Lecturer (30th Annual Event), Elms College, "Up in the Air: Air Pollution and Health Effects", April 22

2011 Peltier, RE "Bridging the gap between public health and aerosol chemistry: improving health through old technology", Invited seminar, University of Toronto, 18 Oct 2011

2011 Peltier, RE "Bridging the gap between public health and aerosol chemistry: improving health through old technology", Invited seminar, Brown University, 9 Nov 2011

2009 Peltier, R.E. Field measurements of aerosol chemical composition: Investigating results of organic carbon over Atlanta, and nickel and vanadium in New York City. Visiting Scientist Lecture Seminar, United States Environmental Protection Agency, RTP, NC, 17 Mar 2009.

2008 Peltier, R.E. A Seasonal and Spatial Profile of Fine Particle Nickel in New York City: Estimating Exposures for Health Research. *Gordon Research Conference – Mechanisms of Toxicity*. July 28, 2008.

MULTI-INVESTIGATOR MEASUREMENT FIELD CAMPAIGNS:

2013 Southeastern Center for Air Pollution and Epidemiology, Atlanta, GA
2012 Oilfield emissions study (ground site), Sonoma Technology, Inc, Los Angeles, CA
2006 MIRAGE/MILAGRO (C130 aircraft), Veracruz, Mexico
2006 INTEX-B (C130 aircraft), Seattle, WA
2006 TexAQS-II (P3 aircraft and ground site), Houston, TX
2005 Study of Organic Aerosol in Riverside (ground site), Riverside, CA
2004 New England Air Quality Study – ITCT Intercontinental Transport and Chemical Transformation (NEAQS2004), Portsmouth, NH
2003 Partnership for Environmental Research and Community Health (ground site), Pensacola, FL

SERVICE TO THE PROFESSION:

Disciplinary Service

2017-current Deputy Editor in Chief, J Exposure Science and Envir Epidemiology
2011-2017 Associate Editor, J Exposure Science and Envir Epidemiology
2011 American Thoracic Society Assembly on Environmental and Occupational Health Program Committee
2012 Session Chair, International Society of Exposure Science Annual Meeting (Baltimore, MD)
2015 Chair a booth engaging stakeholders in using small pollution sensors in pedagogy, International Society of Exposure Science Annual Conference, Henderson, NV, Oct 2015

Peer reviewing services: Aerosol Science and Technology, J Air and Waste Management, Atmospheric Environment, Atmospheric Chemistry and Physics Environmental Engineering Science, Environmental Pollution, Environmental Science and Technology, J Exposure Sci and Envir Epidemiology, J Geophysical Research, Inhalation Toxicology, Talanta, Toxicology.

Grant Reviewing services:
NOAA Climate Sciences Program, Canadian United Stated Environmental Protection Agency (EPA STAR Panel R1 in 2013, Panel K1 in 2015), Union of Concerned Scientists, and Dissertation Initiative for Climate Change Research

SERVICE TO THE UNIVERSITY:

2017 EHS Personnel Committee – Chair for Tenure review of Ford, Timothy
2017 SPHHS Research Office professional staff search
2017 SPHHS Strategic Planning Committee
2017 SPHHS Personnel Committee
2017 SPHHS Public Health Undergraduate Advisory Committee
2016 SPHHS Strategic Planning Committee
2016 SPHHS Personnel Committee
2016 SPHHS Public Health Undergraduate Advisory Committee

2016 EHS Curriculum Committee (Chair)
2016 EHS Bylaws Committee
2016 EHS Faculty Search Member

2015 EHS Curriculum Committee (Chair)
2015 CHC 'Meet the Professor' discussion
2015 EHS Faculty Search member
2015 Undergraduate Research Conference Session Chair

2014 SPHHS CEPH accreditation review team (research)
2014 DPH Curriculum Committee (Chair)
2014 EHS/CHC Faculty Search
2014 EHS Curriculum Committee (Chair)
2014 SPHHS Human Subjects Review

2013 SPHHS Executive Council (special member, new space planning)
2013 SPHHS CEPH accreditation review team (research)
2013 SPHHS Human Subjects review
2013 DPH Curriculum Committee (Chair)
2013 'Meet the Professor" career presentation, Department of Public Health
2013 EHS Curriculum Committee (Chair)
2013 EHS/CHC Faculty Search (member)

2012 EHS Admissions Committee
2012 EHS Curriculum Committee (Chair)
2012 EHS Curriculum Committee (Chair)
2012 EHS Faculty Search (Chair)
2012 DPH Curriculum Committee (Chair)
2012 SPHHS Internal IRB
2012 K-Club member/mentor

2011 EHS Admissions Committee (Chair)
2011 EHS Curriculum Committee (Chair)
2011 EHS Personnel Committee
2011 EHS Faculty Search (Chair, 1st search; member 2nd search)
2011 SPHHS Bylaws Committee
2011 K-Club member/mentor

2010 EHS Admissions Committee
2010 EHS Faculty Search
2010 'Meet the Professor" career presentation, Department of Public Health

TEACHING AND MENTORING:
Didactic Teaching Experience – semester/year offered (number enrolled)
University of Massachusetts – Primary Instructor (>400 course number is graduate level)

2017 EHS565, Environmental Health Practices, 42 students
2016 PH203, Intro to Environmental Health Science, 202 students
2016 EHS690X, Exposure Assessment, 12 students

2016 EHS565, Environmental Health Practices, 32 students
2015 EHS562, Air Quality Methods, 9 students

2015 PH303, Intro to Environmental Health, 150 students
2015 PH565, Environmental Health Practices, 29 students

2014 PH565, Environmental Health Practices, 23 students

2013 PH562, Air Quality Methods, 15 students
2013 PH565, Environmental Health Practices, 32 students

2011 PH390X, Intro to Environmental Health, 31 students
2012 PH303, Intro to Environmental Health, 165 students
2012 PH303H, Honors Intro to EHS, 12 students

2011 PH396H (Honors Ind Study, Huynh)
2012 PH196H (Ind Study, Smith)

University of Massachusetts – Non-primary instructor as guest lecturer
2012 PH562, Air Quality Methods, 20 students
2012 PH562, Air Quality methods, 18 students
2012 EnvSci 194A, Environmental Science Intro Seminar, 100 students
2012 EnvSci 194A, Environmental Science Intro Seminar, 95 students
2014 EnvSci 194A, Environmental Science Intro Seminar, 102 students
2015 EnvSci 194A, Environmental Science Intro Seminar, 102 students
2016 EnvSci 194A, Environmental Science Intro Seminar, 102 students

2011 EnvSci504A, Air Pollution and Climate Change Biology, 45 students

Other Institutions

NYU, Environmental Hygiene Methods,	Course Director
NYU, Environmental Health Science	Course Director
New York University, Environmental Chemistry, Spring 2009	Course Director
Columbia University, Environmental Urban Planning, Spr 2001	guest lecturer
New York University, Aerosol Science, Fall 2008	guest lecturer
Columbia University, Environmental Planning, Spr 2001	guest lecturer
New School University, Environmental and Earth Science, Spr 2001	guest lecturer

Mentoring

University of Massachusetts
Academic Advisor:

2012	Jeffrey Barowsky,	MPH
2014	Andrea Garon,	MPH
2014	Boning Liu (CEE)	PhD Defense committee member
2017	Whitney Huynh	withdrawn
2017	Filimon Kiros	MS
2017	Randa Kallin	CHC Honors Thesis Advisor, Chair
2015	Alyssa Noyes	CHC Honors Thesis Advisor, Chair
2015	Elizabeth Pongratz	CHC Honors Thesis Advisor, Member
2012-16	Dr. Kabin Shakya	Postdoctoral Fellow Mentor (currently Asst Prof, Villanova U)
2014-	Dr. Pallavi Pant	Postdoctoral Fellow Mentor

Georgia Institute of Technology
2005 Research project mentor, Andrea Thompson
2006 Research project mentor, Julie Simon
2006 Research project supervisor, Abigail Wintemute

NYU School of Medicine, Department of Environmental Medicine
2010 Research project mentor, Olufunke Bakare MS 2010
2010 Research project mentor, Jaime Mirowsky MS 2010
2013 PhD Committee Member (Reader), Jaime Mirowsky2017

2017 PhD Committee Member (Reader), Ruzmyn Vilcassim

MEDIA COVERAGE AND OTHER SERVICE:

2011 Press Interview, WFCR (NPR affiliate), Aired 3/30/2011
2011 Press Interview, WWLP-21 (NBC affiliate), Aired 9/1/2011
2011 Radio Interview, WHMP, "Bill Newman Show", Aired 9/27/2012
2011 Op/Ed, Springfield Republican "Danger in the Air", Published 10/10/2011

2012 Project Profile, Research/Next webpage at UMass

2013 Press Interview, WWLP-21 (NBC affiliate), Aired 1/31/2013
2013 Press Interview, http://www.golocalworcester.com/news/use-of-cancer-causing-carcinogens-on-the-decline-umass-report/ (online local news), Posted 6/8/2013
2013 UMass News Feature, 06 Jan 2014

2014 Feature story, Springfield Republican, 23 July 2014
2014 Feature story, Hampshire Daily Gazette, 29 July 2014 (picked up by AP)
2014 Press interview, BU News Service
2014 UMass News Video Feature "Air Pollution Research in Nepal" (www.youtube.com/watch?v=j4Ip4KI7sj8)
2014 Radio Interview, 'Academic Minute', WAMC, National Public Radio, Broadcast nationally 1/8/15

2015 5 press interviews (newspaper, television) on Nepal earthquakes

2016 Newspaper interview, Valley Advocate on rise of e-cigarettes.
2016 ResearchNext University Profile on small sensor work.
2016 "That Cloth Mask for Smoggy Days? A Paper One Works Better". NY Times, 22 August 2016.
2016 'Millions rely on cheap cloth masks that may provide little protection against deadly air pollution' The Conversation, September 14, 2016 (also translated into French)
2016 'Can we rely on DIY air pollution sensors?",The Conversation, December 1, 2016

2013 *Pro bono* commenting on Environmental Assessment on proposed raising of Bayonne Bridge (New York Harbor) on behalf of Clean Ports Initiative and Ironbound Community District
2013 *Pro bono* consulting, Zea Mays Printmaking (Florence, MA), Occupational Exposure in Artistry

PROFESSIONAL MEMBERSHIPS:

2003-2015 American Association for Aerosol Research
2010- International Society of Exposure Science
2010-12 International Society for Environmental Epidemiology
2006-07 European Geophysical Union
2004-07 American Geophysical Union
2010-12 New York Academy of Science
2008 AAAS/Science Program for Excellence in Science
2006-10 Air and Waste Management Association
2010-11 American Thoracic Society
2013-15 Society of Toxicology (Full Member)

CURRICULUM VITAE (August, 2017)
Robert F. Phalen, Ph.D.

Department of Medicine
University of California, Irvine, CA 92697-1825
Telephone: ([redacted] Facsimile: (949) 824-4763
Email: rfphalen@uci.edu

[redacted]

EDUCATION:

1959-1964: San Diego State College. Bachelor's degree in Physics with Mathematics minor. Senior project: Digital Autocorrelation (Signal and Noise Separation). Recipient of American Legion Scholarship.
1964-1966: San Diego State University, Master's Degree in Physics with nuclear emphasis. Thesis: Removal of Silver 110-m from the Lungs. Recipient of Teaching Assistantship.
1966-1972: University of Rochester, Rochester, NY, Ph.D. in Radiation Biology and Biophysics, with research in aerosol physics and inhalation toxicology. Thesis: Aerosol and Inhalation Studies with Sub-micron Silver Agglomerates. Recipient of National Defense Education Act and U.S. Atomic Energy Commission Fellowships.
1972-1974: Aerosol Physics Department, The Lovelace Foundation for Medical Education and Research, (re-named, Lovelace Respiratory Research Institute) Albuquerque, NM. Research Associate (NIEHS, postdoctoral training in lung modeling).

PROFESSIONAL EXPERIENCE:

July 2008 - Present: Professor, Department of Medicine/Ctr. for Occup. & Envir. Health; Co-Director Air Pollution Health Effects Laboratory, University of California, Irvine.
July 1985-June 2008: Director, Air Pollution Health Effects Laboratory; Professor of Occupational and Environmental Health, Centers for Occupational and Environmental Health, University of California, Irvine, and University of California, Los Angeles.
November 1974-June 1985: Adjunct Assistant Professor, Assistant Professor in Residence (July 1977), Associate Professor in Residence (July 1978), Professor in Residence (July 1984), Department of Community and Environmental Medicine, University of California, Irvine - Director, Air Pollution Health Effects Laboratory.
1970-1972: Summer Faculty, Biology Department, Rochester Institute of Technology, Rochester, NY - Taught Radiation Biology (lecture and lab).
1966: Instructor, Physics Department, San Diego State University, San Diego, CA - Taught Radiological Physics (graduate) and Basic Physics (nursing students) - Supervised student research on aerosols.
1964-1966: Assistant to Radiation Safety Officer, and Laboratory Teaching Assistant, Physics Department, San Diego State University.
1962-1963: Engineering Aide, Advanced Space Systems Engineering Department, General Dynamics/Astronautics, San Diego, CA - Digital and Analog computer programmer, missile and spacecraft applications.

RESEARCH:

Application of quantitative tools to biomedical problems:
1. Lung injury from inhaled aerosol/gas combinations
2. Highly concentrated aerosols: properties and deposition in the respiratory tract
3. Respiratory tract aerosol dosimetry models
4. Comparative respiratory tract anatomy in young and adult humans and laboratory animals
5. Laboratory generation and characterization of aerosols.
6. Health effects of air pollutant particles

TEACHING AND TRAINING (Examples Only):

Developed and co-taught a 4-unit upper division/graduate level course, Air Pollution Aerosol Technology (ME264), UCI School of Engineering.
Developed, and co-taught a 3-unit course, Environmental Toxicology, C&E Medicine 492.41, UCI Extension.
Developed and taught a 4-unit graduate course, Inhalation Toxicology, TOX 212, UCI.
Developed and taught Environmental Toxicology, Didactics to Occupational Medicine Residents, UCI.
Contributed sections or lectures to the following courses:
- "The Lung," for Target Organ Toxicology, TOX 206.
- "Experimental Design," for TOX 207, Statistical Design and Interpretation of Toxicology Studies.
- "Animal Research Ethics" for Biological Sciences Bio-Sci 30, Biomedical Ethics.
- "Air Pollution," for Social Ecology 5X, Introduction to Environmental Quality and Health.
- "Toxicity of Gases," for segment on environmental toxicology, Medical Pharmacology 241A, B, Graduate Program in Pharmacology and Toxicology.
- Community and Environmental Medicine, core medical school course, lectures (2 hours) in segment on occupational medicine.
- "Deposition and Clearance of Inhaled Particles," for Introduction to Occupational Disease course (CEM X491.02), Occupational Medicine Residency Program, Department of Community and Environmental Medicine.
- "Air Sampling," for Industrial Hygiene course (CEM X491.03), Occupational Medicine Residency Program, Department of Community and Environmental Medicine; Occupational Health Nursing Certificate Program, UCI Extension.
- “Particulate Air Pollution” for Envir. Epidemiology course, E249, UCI.

Participation in supervising graduate student research projects performed in fulfillment of M.S. and Ph.D. requirements, UCI College of Medicine, Schools of Engineering and Physical Sciences (Chemistry), UCI and Department of Pharmacology and Toxicology, UCSF Medical School and MD/Ph.D. program, UCI Department of Physiology, UCI Environmental Toxicology, San Diego State University, and UCLA School of Public Health.

Graduate Advisor: R. Dendo (M.S. 1995), E. Moline (M.S. 1998), M. Oldham (Ph.D. 2001), Dr. T. Lam (M.S. 2005), Dr. J.Y. Chuang (M.S. 2011), Dr. Michael Sracic (M.S. 2013).

PROFESSIONAL MEMBERSHIPS:

Academy of Toxicological Sciences (Fellow, 1999 to present)
American Association for the Advancement of Science (1969 to 2006 & 2009-present) (Fellow, 2012)
American Association for Aerosol Research (charter member, 1982 to present), elected to Board of Directors (1999)
American Conference of Governmental Industrial Hygienists (1982 to present)
American Industrial Hygiene Association (1977 to present)
American Industrial Hygiene Association, Yuma-Pacific Southwest Section (2000-present)
British Occupational Hygiene Society (1991 to 2007)
California Society for Biomedical Research (Board of Directors, 2008-present, Board Chair, 2012-present)
Fine Particle Society (1983 to 1993)
Gesellschaft fur Aerosolforschung (Society for Aerosol Research) (1973 to present)
Health Physics Society (1973 to 2013)

International Society for Aerosols in Medicine (1994-2012)
Society of Toxicology (1981 to present) (Career Achievement Award recipient, 2000)
Southern CA Institutional Review Board Chairmen's Association (1980 to 1986)
Southern CA Academy of Sciences (1994-present); elected to Executive Cte. (1996-2001) (elected Fellow, 2008-present)
The Aerosol Society (2008-2012)
The Hormesis Society (Charter member, 2005-2007)

SERVICE TO SCHOLARLY JOURNALS AND PROFESSIONAL SOCIETIES
Reviewer (* = Editorial Service):

Aerosol and Air Quality Research
*Aerosol Science and Technology (Health Editor 2003-2005)
American Association for Aerosol Research, (Elected to Board of Directors 1999-2003)
American Review of Respiratory Disease
American Industrial Hygiene Association Journal
American Conference of Governmental Hygienists (Chair of Air Sampling Committee, 1982-1989)
*Applied Occupational and Environmental Hygiene (Guest Editor for 1998 special edition)
Bulletin of Mathematical Biology
Critical Reviews in Toxicology
Environmental Health Perspectives
Environmental Toxicology
*Experimental Lung Research (Editorial Board Member 1980-1983)
*Fundamental and Applied Toxicology (Editorial Board Member 1986-1992)
*Inhalation Toxicology (Editorial Board Member 1989-2001; Associate Editor 2001-2004)
*Inhalation Toxicology (Guest Editor, 1995, 2000, 2004, 2006, accepted for 2015)
International Commission on Radiological Protection (advisor)
Journal of the American College of Toxicology
Journal of Toxicology and Environmental Health
*Journal of Aerosol Medicine (Editorial Board Member 1988-1998)
Journal of Toxicology and Applied Pharmacology
*Journal of Aerosol Science
Nanomedicine
National Geographic Society (reviewer)
National Council on Radiation Protection and Measurements (Committee on Respiratory Tract Dosimetry Modeling)
Proc. of the National Academy of Sciences
Science
Toxicological Sciences
Society of Toxicology, National Media Resource Specialist, 1998-2012

Session Chairman or Co-Chairman: (Examples Only)

American Industrial Hygiene Association Annual Conference, 1981, 1985, 1986
Society of Toxicology 20th Annual Meeting, San Diego, 1981
American Chemical Society Congress, Hawaii, 1979
Aerosol Technology Meeting, Albuquerque, 1983, Pacific Grove, 1986
American Association for Aerosol Research Ann. Mtg, 1985, 1995, 1996, 1997, 1998-2002
American Conference of Governmental Hygienists, Air Sampling Symposium, 1987
International Inhaled Particles Symposium, 1991, 1996
Colloquium on Particulate Material and Human Health, Colloquium Director/Program Chair, 1994, 1996, 1999, 2003
Fourth International Aerosol Conference, Los Angeles, 1994
Susceptibility Factors for Respiratory Diseases, Session Chair, 2000
Frontiers in Aerosol Dosimetry Research, Program Chair, Session Chair, Irvine, CA 2005
Air Pollution and Health (AAAR/EPA), Planning Cte., San Diego, CA, 2010
Aerosol Dosimetry Conference, Chair of Program Committee, Irvine, CA 2014

California Biomedical Research Assn., Session Chair, San Diego CA, 2016

SERVICE TO EDUCATIONAL/GOVERNMENTAL AGENCIES:

NIH Safety and Occupational Health Study Section, 1988 to 1990 (Chairman)
NIH Special Study Sections, 1980, 1981 (Chairman), 1982 (Chairman), 1983, 1984, 1987, 1988 (Chairman), 1992, 1994
NIH and NIEHS Site Visit Teams, 1980-1984, 1988, 1992, 1994-1996, 2000, 2001
National Academy of Sciences/NRC, Report Reviewer/Commentator,1998, 1999, 2000, 2002, 2003
National Academy of Sciences/NRC, Member, Committee on Animal Models for Testing Interventions Against Aerosolized Bioterrorism Agents, 2005-2006
FDA, Symposium on Juvenile Animal Models, 1998
National Council on Radiation Protection - Task Group on Respiratory Tract Model, 1978 to 1998
American Public Health Association - Advisory Panel on Asbestos, 1978
American Conference of Governmental Industrial Hygienists, Committee on Atmospheric Sampling, (Chairman 1982-1987, Member 1987-1992, Consultant 1996-present).
NIOSH Special Study Section on Respiratory Protective Devices (Chairman), 1983
NIOSH Site Visits to Educational Resource Centers, 1994, 1995
NIOSH Planning Group on Mixed Exposures, 2005
Panelist, National Heart, Lung and Blood Institute Workshop on "Comparative Biology of the Lung," June 1982, Bethesda, MD
EPA Inhalation Toxicology Division Peer Review Panel, 1982
EPA, Session Chair, Workshop on Pulmonary Dosimetry Models, July, 1983
EPA Invited Participant, Workshop on Non-Oncogenic Lung Disease, March, 1984
EPA, Grants Research Science Review Panel on Health Research, 1985 to 1988
EPA Ozone Criteria Document Reviewer, 1993
EPA PM10 Criteria Document Reviewer, 1995, 1996; Advisor on Research Priorities, 1997
EPA PM Criteria Document, Section Author, 2003
EPA, Clean Air Scientific Advisory Committee-PM, 2007-2013
EPA, Technical Steering Committee for 2010 Conference on air pollution
EPA, Science and Technological Achievement Award (Honorable Mention), 2015.
South Coast Air Quality Management District (AQMD), Testimony on Abatement Plan, December 2012.
California Biomedical Research Association 1994 Distinguished Service Award for Public Education
Health Effects Institute; site visit teams 1998, 1999
Institute of Medicine, Tutorial on Inhaled Tobacco Smoke, 2000
Southern California Academy of Sciences; Elected to Board of Directors 1994-2001
Science Advisor for Prentice Day School (for dyslexic children), 1986 to 2005
California Society for Biomedical Research, Public Outreach & Education Award, May 2013.

UNIVERSITY SERVICE: (UCI = University of California, Irvine)

UCI, Speaker's Bureau, 1974-present.
UCI, Human Subjects Policy Committee, 1978-1986.
UCI, Human Subjects Review Committee-Medical (Chairman), 1978-1986.
UCI, BioSciences Honors Committee, 1979-1985.
UCI, Animal Research Committee, 1985-1994, Vice Chair: 1999-2004.
UCI, Co-Chair Cardiopulmonary Task Force, 1988-1990.
UCI, Safety & Security Advisory Committee, 1989-present.
University of California, Office of the President, Health Sciences Committee, 1991-1997.
Special Assistant to Vice Chancellor for Animal Research Services, 1992-1993.
UCI Center for Occupational and Environmental Health Advisory Committee, 1994-1998.
UC, Toxic Substances Research and Teaching Program Executive Committee, 1994-1999.

University of California, Los Angeles, COEH Executive Committee, 1999-2004.
University of Rochester, Rochester, NY, PM Center Science Advisory Committee, 1999-2005.
UCI, Organized Research Unit "Air UCI", 2009-present.
UCI, Continuing Medical Education Committee, 2011-present; Elected as Chair, 2015.
UCI, School of Medicine Executive Committee, 2015-present.

PUBLICATIONS (BOOKS AND PROCEEDINGS) (* = Sole authored or sole edited):

* 1. Phalen, R.F. Inhalation Studies: Foundations and Techniques, C.R.C. Press, Boca Raton, FL, 1984, 277 pp.
2. Phalen, R.F. (ed.), Hinds, W.C., John, W., Lioy, P.J., Lippmann, M. McCawley, M.A., Raabe, O.G., Soderholm, S.C. and Stuart, B.O. Particle Size-Selective Sampling in the Workplace, Report of the Air Sampling Procedures Committee, American Conference of Governmental Industrial Hygienists, Cincinnati, OH, 1985, 80 pp.
3. John, W., Phalen, R.F., Bowman, J.D., Lewis, R.G., Lioy, P.J., Raabe, D.G., Ratney, R.S., and Stuart, B.O., Advances in Air Sampling (Proceedings of a Conference) Lewis Publishers, Chelsea, 1988, 409 pp.
4. Phalen, R.F., Mannix, R.C. Kleinman, M.T. and Tonini, M.C. (eds.), Proceedings of the Colloquium on Particulate Air Pollution and Human Mortality and Morbidity, Air Pollution and Human Mortality and Morbidity, Air Pollution Health Effects Laboratory, University of California, Irvine, CA, 1995, 725 pp.
5. Lee, J.S. and Phalen, R.F. (eds.), Proceedings of the Second Colloquium on Particulate Air Pollution and Human Health, Rocky Mountain Center for Occupational and Environmental Health, University of Utah, Salt Lake City, UT, 1996, 800 pp.
* 6. Phalen, R.F. (ed.). Methods in Inhalation Toxicology, CRC Press, Boca Raton, FL, 1997, 156 pp.
7. Cuddihy, R.G., Fisher, G.L., Kanapilly, G.M., Moss, O.R., Phalen, R.F., Schlesinger, R.B. and Swift, D.L. Deposition, Retention and Dosimetry of Inhaled Radioactive Substances, National Council on Radiation Protection and Measurements, Bethesda, MD, 1997, 253 pp.
8. Phalen, R.F. and Bell, Y.M. (eds.), Proceedings of the Third Colloquium on Particulate Air Pollution and Human Health, Air Pollution Health Effects Laboratory (APHEL Report No. 99-01), University of California, Irvine, CA, October, 1999, 545 pp.
* 9. Phalen, R.F., The Particulate Air Pollution Controversy, Kluwer Academic Publishers, Boston/Dordrecht/London, 2002, 128 pp. (2013 released as paperback)
10. Phalen, R., Oldham, M., Akhavan, S., Hoover, M., and Asotra, K. (eds.), Frontiers in Aerosol Dosimetry Research: Proceedings of the Conference, Air Pollution Health Effects Laboratory (APHEL Report No. 06-01), University of California, Irvine, CA, June 2006, 223 pp.
11. Hobbs, C.H., Dorman, D.C., Griffin, D.E., Harkema, J.R., Laube, B.L., Lenz, D.E., Morse, S.S. and Phalen, R.F., Overcoming Challenges to Develop Countermeasures Against Aerosolized Bioterrorism Agents, National Research Council, Washington DC, 2006, 71 pp.
*12. Phalen, R.F., Inhalation Studies: Foundations and Techniques, 2nd Edn, Informa, New York, NY, 2009, 264 pp.
13. Phalen, R.F. and Phalen, R.N., Introduction to Air Pollution Science: A Public Health Perspective, Jones and Bartlett, Burlington, MA, 2011, 331 pp.
*14. Core Ethics for Health Professionals: Principles, Issues, and Compliance, Springer Publishing Company, New York, NY, 2017, 160pp.
15. Hiatt, R.A., Bailer, J., Bascom, R., Churchill, L., Crump. K., Foster-Riley, M., Friedman, D.B., Gold, D., Goldfrank, L., Lane, N., Lippmann, M., Mittleman, M., Needleman, P., Phalen, R., and Shin, Hu., Controlled Human Inhalation – Expose studies at EPA, National Academies Press, Washington, DC, 2017, 141 pp.
16. Phalen, R.F., Owens Kimura, L., Herman, D.A., and MacMillan, A.C. (eds.) Advances in Inhaled Aerosol Dosimetry Research, Proceedings of a Conference, Air Pollution Health Effects Laboratory (APHEL Report No. 2016-01), University of California Irvine, 2017, 139 pp.

PUBLICATIONS (*= Peer reviewed):

1. Phalen, R.F. Aerosol and inhalation studies with sub-micron silver agglomerates. Ph.D. Thesis, University of Rochester, School of Medicine and Dentistry, Rochester, NY,1972, U.R. 3490.
*2. Phalen, R.F. Evaluation of an exploded-wire aerosol generator for use in inhalation studies. J. Aerosol Sci., 3:395-406, 1972.

*3. Phalen, R.F. and Morrow, P.E. Experimental inhalation of metallic silver. Health Physics, 24:509-518, 1973.
*4. Phalen, R.F., Yeh, H.C., Raabe, O.G. and Velasquez, D.J. Casting the lungs *in-situ*; Anat. Rec., 177:255-263, 1973.
*5. Phalen, R.F. Respiratory tract morphology: Summary of a conference, Bio. Sci., 24:612-614, 1974.
6. Phalen, R.F., Yeh, H.C., Raabe, O.G. and Velasquez, D.J. Selected References on Lung Airway Structure and the Deposition of Inhaled Particles (A Bibliography) LF-48, Lovelace Foundation, Albuquerque, New Mexico, 1974.
*7. Yeh, H.C., Hulbert, A., Phalen, R.F., Velasquez, D.J., Harris, T.D. A stereoradiographic technique and its application to evaluation of lung casts. Investig. Radiol., 10:351-357, 1975.
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*9. Phalen, R.F. Inhalation exposure of animals, Envir. Health Perspect., 16:17-24, 1976.
*10. Yeh, H.C., Phalen, R.F. and Raabe, O.G. Factors influencing the deposition on inhaled particles. Envir. Health Perspect., 15:147-156, 1976.
11. Phalen, R.F., Cannon, W.C. and Esparza, D. Comparison of impaction centrifugal separation and electron microscopy for sizing cigarette smoke. Fine Particles (edited by B.Y.H. Liu), Academic Press, pp. 731-737, 1976.
*12. Raabe, O.G., Yeh, H.C., Newton, G.J., Phalen, R.F., Velasquez, D.J. Deposition of inhaled monodisperse aerosols in small rodents. Inhaled Particles IV, Pergamon Press, Oxford, (edited by W.H. Walton), pp. 3-21, 1977.
*13. Elliott, J.C. and Phalen, R.F. Influence of steroid aerosol treatment on clearance of inhaled gold particles. Steroids, 31:761-769, 1978.
*14. Phalen, R.F., Yeh, H.C., Schum, G.M. and Raabe, O.G. Application of an idealized model to morphometry of the mammalian tracheobronchial airways, Anat. Rec., 190:167-176, 1978.
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*16. Frager, N.B., Phalen, R.F. and Kenoyer, J.L. Adaptations to ozone in reference to mucociliary clearance. Arch. Envir. Health, 34:51-57, 1979.
*17. Ho, A., Bell, K.A. and Phalen, R.F. Fixation and microscopic sizing of aqueous sodium chloride aerosols, J. Colloid and Interface Sci., 72:351-356, 1979.
*18. Esparza, D.C., Schum, G.M. and Phalen, R.F. A latex-sponge collar for partial-body plethysmography using anesthetized rodents. J. Lab. Animal Science, 29:652-655, 1979.
19. Phalen, R.F., Ho, A.T. and Kenoyer, J.L. Comparison of electron microscopy and the electrical aerosol size analyzer for determination of size distribution of a submicronic salt. Aerosol Measurement, (D.A. Lungren, editor), The Univ. Press of Florida, pp. 480-487, 1979.
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23. Phalen, R.F., Faeder, E.J., Cavender, F.L. and Reischl, P. Response of the respiratory tract to inhaled pollutants, Chapter 5 in Generation of Aerosols, (K. Willeke, editor), Ann Arbor, pp. 125-138, 1980.
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34. Phalen, R.F. Basic morphology and physiology of the respiratory tract, Chapter 2 in Inhalation Studies, by Phalen, R.F., CRC Press, Inc., Boca Raton, Florida, 1984.

35. Phalen, R.F. Establishing and controlling exposure environments, Chapter 3 in Inhalation Studies, by Phalen, R.F., CRC Press, Inc., Boca Raton, Florida, 1984.

36. Phalen, R.F. Characterizing the exposure, Chapter 4 in Inhalation Studies, by Phalen, R.F., CRC Press, Inc., Boca Raton, Florida, 1984.

37. Phalen, R.F. Methods for exposing animals, Chapter 5 in Inhalation Studies, by Phalen, R.F., CRC Press, Inc., Boca Raton, Florida, 1984.

38. Phalen, R.F. Testing for toxicity, Chapter 6 in Inhalation Studies, by Phalen, R.F., CRC Press, Inc., Boca Raton, Florida, 1984.

39. Phalen, R.F. Experimental designs, Chapter 7 in Inhalation Studies, by Phalen, R.F., CRC Press, Inc., Boca Raton, Florida, 1984.

40. Phalen, R.F. Facilities, Chapter 8 in Inhalation Studies, by Phalen, R.F., CRC Press, Inc., Boca Raton, Florida, 1984.

41. Phalen, R.F. Animal models, Chapter 9 in Inhalation Studies, by Phalen, R.F., CRC Press, Inc., Boca Raton, Florida, 1984.

42. Phalen, R.F. Regulations and guidelines, Chapter 10 in Inhalation Studies, by Phalen, R.F., CRC Press, Inc., Boca Raton, Florida, 1984.

43. Phalen, R.F. Pulmonary Dosimetry Models: Introduction, J. Toxicol. and Envir. Health, 18:231-234, 1984.

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*77. Nadziejko, C.E., Nansen, L., Mannix, R.C., Kleinman, M.T. and Phalen, R.F. Effect of nitric acid vapor on the response to inhaled ozone. Inhal. Toxicol., 4:343-358, 1992.
*78. Chung, I.P., Phalen, R.F. and Dunn-Rankin, D. Predicted aerosol aspiration efficiency for infants, children and adults. Appl. Occup. Envir. Hygiene, 8:639-644, 1993.
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107. Phalen, R.F., and Raabe, O.G., The evolution of inhaled particle deposition modeling, Conference: Advancing Aerosol Dosimetry Research, Irvine, CA, October 4-25, 2014.

*108. Phalen, R.F., Biomedical Research: Role, Current Issues, and Funding, CA Biomedical Research Assoc. 32nd Ann. Mtg., La Jolla, CA, May 4-5, 2016.

CURRICULUM VITAE (August, 2017)
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[redacted]

EDUCATION:

1959-1964: San Diego State College. Bachelor's degree in Physics with Mathematics minor. Senior project: Digital Autocorrelation (Signal and Noise Separation). Recipient of American Legion Scholarship.
1964-1966: San Diego State University, Master's Degree in Physics with nuclear emphasis. Thesis: Removal of Silver 110-m from the Lungs. Recipient of Teaching Assistantship.
1966-1972: University of Rochester, Rochester, NY, Ph.D. in Radiation Biology and Biophysics, with research in aerosol physics and inhalation toxicology. Thesis: Aerosol and Inhalation Studies with Sub-micron Silver Agglomerates. Recipient of National Defense Education Act and U.S. Atomic Energy Commission Fellowships.
1972-1974: Aerosol Physics Department, The Lovelace Foundation for Medical Education and Research, (re-named, Lovelace Respiratory Research Institute) Albuquerque, NM. Research Associate (NIEHS, postdoctoral training in lung modeling).

PROFESSIONAL EXPERIENCE:

July 2008 - Present: Professor, Department of Medicine/Ctr. for Occup. & Envir. Health; Co-Director Air Pollution Health Effects Laboratory, University of California, Irvine.
July 1985-June 2008: Director, Air Pollution Health Effects Laboratory; Professor of Occupational and Environmental Health, Centers for Occupational and Environmental Health, University of California, Irvine, and University of California, Los Angeles.
November 1974-June 1985: Adjunct Assistant Professor, Assistant Professor in Residence (July 1977), Associate Professor in Residence (July 1978), Professor in Residence (July 1984), Department of Community and Environmental Medicine, University of California, Irvine - Director, Air Pollution Health Effects Laboratory.
1970-1972: Summer Faculty, Biology Department, Rochester Institute of Technology, Rochester, NY - Taught Radiation Biology (lecture and lab).
1966: Instructor, Physics Department, San Diego State University, San Diego, CA - Taught Radiological Physics (graduate) and Basic Physics (nursing students) - Supervised student research on aerosols.
1964-1966: Assistant to Radiation Safety Officer, and Laboratory Teaching Assistant, Physics Department, San Diego State University.
1962-1963: Engineering Aide, Advanced Space Systems Engineering Department, General Dynamics/Astronautics, San Diego, CA - Digital and Analog computer programmer, missile and spacecraft applications.

RESEARCH:

Application of quantitative tools to biomedical problems:
1. Lung injury from inhaled aerosol/gas combinations
2. Highly concentrated aerosols: properties and deposition in the respiratory tract
3. Respiratory tract aerosol dosimetry models
4. Comparative respiratory tract anatomy in young and adult humans and laboratory animals
5. Laboratory generation and characterization of aerosols.
6. Health effects of air pollutant particles

TEACHING AND TRAINING (Examples Only):

Developed and co-taught a 4-unit upper division/graduate level course, Air Pollution Aerosol Technology (ME264), UCI School of Engineering.
Developed, and co-taught a 3-unit course, Environmental Toxicology, C&E Medicine 492.41, UCI Extension.
Developed and taught a 4-unit graduate course, Inhalation Toxicology, TOX 212, UCI.
Developed and taught Environmental Toxicology, Didactics to Occupational Medicine Residents, UCI.
Contributed sections or lectures to the following courses:
- "The Lung," for Target Organ Toxicology, TOX 206.
- "Experimental Design," for TOX 207, Statistical Design and Interpretation of Toxicology Studies.
- "Animal Research Ethics" for Biological Sciences Bio-Sci 30, Biomedical Ethics.
- "Air Pollution," for Social Ecology 5X, Introduction to Environmental Quality and Health.
- "Toxicity of Gases," for segment on environmental toxicology, Medical Pharmacology 241A, B, Graduate Program in Pharmacology and Toxicology.
- Community and Environmental Medicine, core medical school course, lectures (2 hours) in segment on occupational medicine.
- "Deposition and Clearance of Inhaled Particles," for Introduction to Occupational Disease course (CEM X491.02), Occupational Medicine Residency Program, Department of Community and Environmental Medicine.
- "Air Sampling," for Industrial Hygiene course (CEM X491.03), Occupational Medicine Residency Program, Department of Community and Environmental Medicine; Occupational Health Nursing Certificate Program, UCI Extension.
- “Particulate Air Pollution” for Envir. Epidemiology course, E249, UCI.

Participation in supervising graduate student research projects performed in fulfillment of M.S. and Ph.D. requirements, UCI College of Medicine, Schools of Engineering and Physical Sciences (Chemistry), UCI and Department of Pharmacology and Toxicology, UCSF Medical School and MD/Ph.D. program, UCI Department of Physiology, UCI Environmental Toxicology, San Diego State University, and UCLA School of Public Health.

Graduate Advisor: R. Dendo (M.S. 1995), E. Moline (M.S. 1998), M. Oldham (Ph.D. 2001), Dr. T. Lam (M.S. 2005), Dr. J.Y. Chuang (M.S. 2011), Dr. Michael Sracic (M.S. 2013).

PROFESSIONAL MEMBERSHIPS:

Academy of Toxicological Sciences (Fellow, 1999 to present)
American Association for the Advancement of Science (1969 to 2006 & 2009-present) (Fellow, 2012)
American Association for Aerosol Research (charter member, 1982 to present), elected to Board of Directors (1999)
American Conference of Governmental Industrial Hygienists (1982 to present)
American Industrial Hygiene Association (1977 to present)
American Industrial Hygiene Association, Yuma-Pacific Southwest Section (2000-present)
British Occupational Hygiene Society (1991 to 2007)
California Society for Biomedical Research (Board of Directors, 2008-present, Board Chair, 2012-present)
Fine Particle Society (1983 to 1993)
Gesellschaft fur Aerosolforschung (Society for Aerosol Research) (1973 to present)
Health Physics Society (1973 to 2013)

International Society for Aerosols in Medicine (1994-2012)
Society of Toxicology (1981 to present) (Career Achievement Award recipient, 2000)
Southern CA Institutional Review Board Chairmen's Association (1980 to 1986)
Southern CA Academy of Sciences (1994-present); elected to Executive Cte. (1996-2001) (elected Fellow, 2008-present)
The Aerosol Society (2008-2012)
The Hormesis Society (Charter member, 2005-2007)

SERVICE TO SCHOLARLY JOURNALS AND PROFESSIONAL SOCIETIES
Reviewer (* = Editorial Service):

Aerosol and Air Quality Research
*Aerosol Science and Technology (Health Editor 2003-2005)
American Association for Aerosol Research, (Elected to Board of Directors 1999-2003)
American Review of Respiratory Disease
American Industrial Hygiene Association Journal
American Conference of Governmental Hygienists (Chair of Air Sampling Committee, 1982-1989)
*Applied Occupational and Environmental Hygiene (Guest Editor for 1998 special edition)
Bulletin of Mathematical Biology
Critical Reviews in Toxicology
Environmental Health Perspectives
Environmental Toxicology
*Experimental Lung Research (Editorial Board Member 1980-1983)
*Fundamental and Applied Toxicology (Editorial Board Member 1986-1992)
*Inhalation Toxicology (Editorial Board Member 1989-2001; Associate Editor 2001-2004)
*Inhalation Toxicology (Guest Editor, 1995, 2000, 2004, 2006, accepted for 2015)
International Commission on Radiological Protection (advisor)
Journal of the American College of Toxicology
Journal of Toxicology and Environmental Health
*Journal of Aerosol Medicine (Editorial Board Member 1988-1998)
Journal of Toxicology and Applied Pharmacology
*Journal of Aerosol Science
Nanomedicine
National Geographic Society (reviewer)
National Council on Radiation Protection and Measurements (Committee on Respiratory Tract Dosimetry Modeling)
Proc. of the National Academy of Sciences
Science
Toxicological Sciences
Society of Toxicology, National Media Resource Specialist, 1998-2012

Session Chairman or Co-Chairman: (Examples Only)

American Industrial Hygiene Association Annual Conference, 1981, 1985, 1986
Society of Toxicology 20th Annual Meeting, San Diego, 1981
American Chemical Society Congress, Hawaii, 1979
Aerosol Technology Meeting, Albuquerque, 1983, Pacific Grove, 1986
American Association for Aerosol Research Ann. Mtg, 1985, 1995, 1996, 1997, 1998-2002
American Conference of Governmental Hygienists, Air Sampling Symposium, 1987
International Inhaled Particles Symposium, 1991, 1996
Colloquium on Particulate Material and Human Health, Colloquium Director/Program Chair, 1994, 1996, 1999, 2003
Fourth International Aerosol Conference, Los Angeles, 1994
Susceptibility Factors for Respiratory Diseases, Session Chair, 2000
Frontiers in Aerosol Dosimetry Research, Program Chair, Session Chair, Irvine, CA 2005
Air Pollution and Health (AAAR/EPA), Planning Cte., San Diego, CA, 2010
Aerosol Dosimetry Conference, Chair of Program Committee, Irvine, CA 2014

California Biomedical Research Assn., Session Chair, San Diego CA, 2016

SERVICE TO EDUCATIONAL/GOVERNMENTAL AGENCIES:

NIH Safety and Occupational Health Study Section, 1988 to 1990 (Chairman)
NIH Special Study Sections, 1980, 1981 (Chairman), 1982 (Chairman), 1983, 1984, 1987, 1988 (Chairman), 1992, 1994
NIH and NIEHS Site Visit Teams, 1980-1984, 1988, 1992, 1994-1996, 2000, 2001
National Academy of Sciences/NRC, Report Reviewer/Commentator,1998, 1999, 2000, 2002, 2003
National Academy of Sciences/NRC, Member, Committee on Animal Models for Testing Interventions Against Aerosolized Bioterrorism Agents, 2005-2006
FDA, Symposium on Juvenile Animal Models, 1998
National Council on Radiation Protection - Task Group on Respiratory Tract Model, 1978 to 1998
American Public Health Association - Advisory Panel on Asbestos, 1978
American Conference of Governmental Industrial Hygienists, Committee on Atmospheric Sampling, (Chairman 1982-1987, Member 1987-1992, Consultant 1996-present).
NIOSH Special Study Section on Respiratory Protective Devices (Chairman), 1983
NIOSH Site Visits to Educational Resource Centers, 1994, 1995
NIOSH Planning Group on Mixed Exposures, 2005
Panelist, National Heart, Lung and Blood Institute Workshop on "Comparative Biology of the Lung," June 1982, Bethesda, MD
EPA Inhalation Toxicology Division Peer Review Panel, 1982
EPA, Session Chair, Workshop on Pulmonary Dosimetry Models, July, 1983
EPA Invited Participant, Workshop on Non-Oncogenic Lung Disease, March, 1984
EPA, Grants Research Science Review Panel on Health Research, 1985 to 1988
EPA Ozone Criteria Document Reviewer, 1993
EPA PM10 Criteria Document Reviewer, 1995, 1996; Advisor on Research Priorities, 1997
EPA PM Criteria Document, Section Author, 2003
EPA, Clean Air Scientific Advisory Committee-PM, 2007-2013
EPA, Technical Steering Committee for 2010 Conference on air pollution
EPA, Science and Technological Achievement Award (Honorable Mention), 2015.
South Coast Air Quality Management District (AQMD), Testimony on Abatement Plan, December 2012.
California Biomedical Research Association 1994 Distinguished Service Award for Public Education
Health Effects Institute; site visit teams 1998, 1999
Institute of Medicine, Tutorial on Inhaled Tobacco Smoke, 2000
Southern California Academy of Sciences; Elected to Board of Directors 1994-2001
Science Advisor for Prentice Day School (for dyslexic children), 1986 to 2005
California Society for Biomedical Research, Public Outreach & Education Award, May 2013.

UNIVERSITY SERVICE: (UCI = University of California, Irvine)

UCI, Speaker's Bureau, 1974-present.
UCI, Human Subjects Policy Committee, 1978-1986.
UCI, Human Subjects Review Committee-Medical (Chairman), 1978-1986.
UCI, BioSciences Honors Committee, 1979-1985.
UCI, Animal Research Committee, 1985-1994, Vice Chair: 1999-2004.
UCI, Co-Chair Cardiopulmonary Task Force, 1988-1990.
UCI, Safety & Security Advisory Committee, 1989-present.
University of California, Office of the President, Health Sciences Committee, 1991-1997.
Special Assistant to Vice Chancellor for Animal Research Services, 1992-1993.
UCI Center for Occupational and Environmental Health Advisory Committee, 1994-1998.
UC, Toxic Substances Research and Teaching Program Executive Committee, 1994-1999.

University of California, Los Angeles, COEH Executive Committee, 1999-2004.
University of Rochester, Rochester, NY, PM Center Science Advisory Committee, 1999-2005.
UCI, Organized Research Unit "Air UCI", 2009-present.
UCI, Continuing Medical Education Committee, 2011-present; Elected as Chair, 2015.
UCI, School of Medicine Executive Committee, 2015-present.

PUBLICATIONS (BOOKS AND PROCEEDINGS) (* = Sole authored or sole edited):

* 1. Phalen, R.F. Inhalation Studies: Foundations and Techniques, C.R.C. Press, Boca Raton, FL, 1984, 277 pp.
2. Phalen, R.F. (ed.), Hinds, W.C., John, W., Lioy, P.J., Lippmann, M. McCawley, M.A., Raabe, O.G., Soderholm, S.C. and Stuart, B.O. Particle Size-Selective Sampling in the Workplace, Report of the Air Sampling Procedures Committee, American Conference of Governmental Industrial Hygienists, Cincinnati, OH, 1985, 80 pp.
3. John, W., Phalen, R.F., Bowman, J.D., Lewis, R.G., Lioy, P.J., Raabe, D.G., Ratney, R.S., and Stuart, B.O., Advances in Air Sampling (Proceedings of a Conference) Lewis Publishers, Chelsea, 1988, 409 pp.
4. Phalen, R.F., Mannix, R.C. Kleinman, M.T. and Tonini, M.C. (eds.), Proceedings of the Colloquium on Particulate Air Pollution and Human Mortality and Morbidity, Air Pollution and Human Mortality and Morbidity, Air Pollution Health Effects Laboratory, University of California, Irvine, CA, 1995, 725 pp.
5. Lee, J.S. and Phalen, R.F. (eds.), Proceedings of the Second Colloquium on Particulate Air Pollution and Human Health, Rocky Mountain Center for Occupational and Environmental Health, University of Utah, Salt Lake City, UT, 1996, 800 pp.
* 6. Phalen, R.F. (ed.). Methods in Inhalation Toxicology, CRC Press, Boca Raton, FL, 1997, 156 pp.
7. Cuddihy, R.G., Fisher, G.L., Kanapilly, G.M., Moss, O.R., Phalen, R.F., Schlesinger, R.B. and Swift, D.L. Deposition, Retention and Dosimetry of Inhaled Radioactive Substances, National Council on Radiation Protection and Measurements, Bethesda, MD, 1997, 253 pp.
8. Phalen, R.F. and Bell, Y.M. (eds.), Proceedings of the Third Colloquium on Particulate Air Pollution and Human Health, Air Pollution Health Effects Laboratory (APHEL Report No. 99-01), University of California, Irvine, CA, October, 1999, 545 pp.
* 9. Phalen, R.F., The Particulate Air Pollution Controversy, Kluwer Academic Publishers, Boston/Dordrecht/London, 2002, 128 pp. (2013 released as paperback)
10. Phalen, R., Oldham, M., Akhavan, S., Hoover, M., and Asotra, K. (eds.), Frontiers in Aerosol Dosimetry Research: Proceedings of the Conference, Air Pollution Health Effects Laboratory (APHEL Report No. 06-01), University of California, Irvine, CA, June 2006, 223 pp.
11. Hobbs, C.H., Dorman, D.C., Griffin, D.E., Harkema, J.R., Laube, B.L., Lenz, D.E., Morse, S.S. and Phalen, R.F., Overcoming Challenges to Develop Countermeasures Against Aerosolized Bioterrorism Agents, National Research Council, Washington DC, 2006, 71 pp.
*12. Phalen, R.F., Inhalation Studies: Foundations and Techniques, 2nd Edn, Informa, New York, NY, 2009, 264 pp.
13. Phalen, R.F. and Phalen, R.N., Introduction to Air Pollution Science: A Public Health Perspective, Jones and Bartlett, Burlington, MA, 2011, 331 pp.
*14. Core Ethics for Health Professionals: Principles, Issues, and Compliance, Springer Publishing Company, New York, NY, 2017, 160pp.
15. Hiatt, R.A., Bailer, J., Bascom, R., Churchill, L., Crump. K., Foster-Riley, M., Friedman, D.B., Gold, D., Goldfrank, L., Lane, N., Lippmann, M., Mittleman, M., Needleman, P., Phalen, R., and Shin, Hu., Controlled Human Inhalation – Expose studies at EPA, National Academies Press, Washington, DC, 2017, 141 pp.
16. Phalen, R.F., Owens Kimura, L., Herman, D.A., and MacMillan, A.C. (eds.) Advances in Inhaled Aerosol Dosimetry Research, Proceedings of a Conference, Air Pollution Health Effects Laboratory (APHEL Report No. 2016-01), University of California Irvine, 2017, 139 pp.

PUBLICATIONS (*= Peer reviewed):

1. Phalen, R.F. Aerosol and inhalation studies with sub-micron silver agglomerates. Ph.D. Thesis, University of Rochester, School of Medicine and Dentistry, Rochester, NY,1972, U.R. 3490.
*2. Phalen, R.F. Evaluation of an exploded-wire aerosol generator for use in inhalation studies. J. Aerosol Sci., 3:395-406, 1972.

*3. Phalen, R.F. and Morrow, P.E. Experimental inhalation of metallic silver. Health Physics, 24:509-518, 1973.
*4. Phalen, R.F., Yeh, H.C., Raabe, O.G. and Velasquez, D.J. Casting the lungs *in-situ*; Anat. Rec., 177:255-263, 1973.
*5. Phalen, R.F. Respiratory tract morphology: Summary of a conference, Bio. Sci., 24:612-614, 1974.
6. Phalen, R.F., Yeh, H.C., Raabe, O.G. and Velasquez, D.J. Selected References on Lung Airway Structure and the Deposition of Inhaled Particles (A Bibliography) LF-48, Lovelace Foundation, Albuquerque, New Mexico, 1974.
*7. Yeh, H.C., Hulbert, A., Phalen, R.F., Velasquez, D.J., Harris, T.D. A stereoradiographic technique and its application to evaluation of lung casts. Investig. Radiol., 10:351-357, 1975.
*8. Dungworth, D.L., Phalen, R.F., Schwartz, L. and Tyler, W. Morphological methods for evaluation to pulmonary toxicity in animals. Ann. Reviews of Pharm. and Toxicol., 16:381-401, 1976.
*9. Phalen, R.F. Inhalation exposure of animals, Envir. Health Perspect., 16:17-24, 1976.
*10. Yeh, H.C., Phalen, R.F. and Raabe, O.G. Factors influencing the deposition on inhaled particles. Envir. Health Perspect., 15:147-156, 1976.
11. Phalen, R.F., Cannon, W.C. and Esparza, D. Comparison of impaction centrifugal separation and electron microscopy for sizing cigarette smoke. Fine Particles (edited by B.Y.H. Liu), Academic Press, pp. 731-737, 1976.
*12. Raabe, O.G., Yeh, H.C., Newton, G.J., Phalen, R.F., Velasquez, D.J. Deposition of inhaled monodisperse aerosols in small rodents. Inhaled Particles IV, Pergamon Press, Oxford, (edited by W.H. Walton), pp. 3-21, 1977.
*13. Elliott, J.C. and Phalen, R.F. Influence of steroid aerosol treatment on clearance of inhaled gold particles. Steroids, 31:761-769, 1978.
*14. Phalen, R.F., Yeh, H.C., Schum, G.M. and Raabe, O.G. Application of an idealized model to morphometry of the mammalian tracheobronchial airways, Anat. Rec., 190:167-176, 1978.
*15. Hinrichs, R., Kenoyer, J.L., Phalen, R.F. and Crocker, T.T. Labeling of monodisperse polystyrene particles with tightly-bound 51Cr. Am. Ind. Hyg. Assoc. J., 39:570-575, 1978.
*16. Frager, N.B., Phalen, R.F. and Kenoyer, J.L. Adaptations to ozone in reference to mucociliary clearance. Arch. Envir. Health, 34:51-57, 1979.
*17. Ho, A., Bell, K.A. and Phalen, R.F. Fixation and microscopic sizing of aqueous sodium chloride aerosols, J. Colloid and Interface Sci., 72:351-356, 1979.
*18. Esparza, D.C., Schum, G.M. and Phalen, R.F. A latex-sponge collar for partial-body plethysmography using anesthetized rodents. J. Lab. Animal Science, 29:652-655, 1979.
19. Phalen, R.F., Ho, A.T. and Kenoyer, J.L. Comparison of electron microscopy and the electrical aerosol size analyzer for determination of size distribution of a submicronic salt. Aerosol Measurement, (D.A. Lungren, editor), The Univ. Press of Florida, pp. 480-487, 1979.
*20. Ho, A.T., Phalen, R.F. and Crocker, T.T. Laboratory production of ammonium and ferric sulfate aerosols. Am. Ind. Hyg. Assoc. J., 41:346-351, 1980.
*21. Phalen, R.F., Kenoyer, J., Crocker, T. and McClure, T. Effects of sulfate aerosols in combination with ozone on elimination of tracer particles inhaled by rats. J. Toxicol. and Envir. Health, 6:797-810, 1980.
*22. Kenoyer, J., Phalen, R., and Davis, J. Particle clearance from the respiratory tract as a test of toxicity: Effect of ozone on short and long term clearance, Exper. Lung Research, 2:111-120, 1981.
23. Phalen, R.F., Faeder, E.J., Cavender, F.L. and Reischl, P. Response of the respiratory tract to inhaled pollutants, Chapter 5 in Generation of Aerosols, (K. Willeke, editor), Ann Arbor, pp. 125-138, 1980.
*24. McAllen, S.J., Chiu, S.P., Phalen, R.F. and Rasmussen, R.E. Effect of *in vivo* ozone exposure on *in vitro* pulmonary alveolar macrophage mobility, J. Toxicol. and Envir. Health, 7:373-381, 1981.
*25. McClure, T.R., Diller, P.J. and Phalen, R.F. An airway perfusion apparatus for whole lung fixation, J. Lab. Anim. Sci., 32:195-196, 1982.
*26. Walters, R.B., Phalen, R.F., Mannix, R.C. and Smart, G.L. An aerosol and gas aging line suitable for use in inhalation toxicology research, Am. Ind. Hyg. Assoc. J., 43:218-222, 1982.

*27. Mannix, R.C., Phalen, R.F., Kenoyer, J.L. and Crocker, T.T. Effect of sulfur dioxide-sulfate exposure on rat respiratory tract clearance, Am. Ind. Hyg. Assoc. J., 43:679-685, 1982.

*28. Martonen, T.B., Bell, K.A., Phalen, R.F., Wilson, A.F. and Ho, A. Growth rate measurements and deposition modeling of hygroscopic aerosols in human tracheobronchial models, Ann. Occup. Hyg., 26:93-108, 1982.

*29. Craig, D.K., Brain, J.D., Cuddihy, R.G., Kanapilly, G., Phalen, R.F., Swift, D.L. and Stuart, B.O. Implications of the dosimetric model for the respiratory system on for intake of radionuclides by workers, (ICRP Publication 30), Ann. Occup. Hyg., 26:163-176, 1982.

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*32. Phalen, R.F., Mannix, R.C. and Drew, R.T. Inhalation Exposure Methodology, Env. Health Perspect., 56:23-34, 1984.

33. Phalen, R.F. Aerosols and gases, Chapter 1 in Inhalation Studies, by Phalen, R.F., CRC Press, Inc., Boca Raton, Florida, 1984.

34. Phalen, R.F. Basic morphology and physiology of the respiratory tract, Chapter 2 in Inhalation Studies, by Phalen, R.F., CRC Press, Inc., Boca Raton, Florida, 1984.

35. Phalen, R.F. Establishing and controlling exposure environments, Chapter 3 in Inhalation Studies, by Phalen, R.F., CRC Press, Inc., Boca Raton, Florida, 1984.

36. Phalen, R.F. Characterizing the exposure, Chapter 4 in Inhalation Studies, by Phalen, R.F., CRC Press, Inc., Boca Raton, Florida, 1984.

37. Phalen, R.F. Methods for exposing animals, Chapter 5 in Inhalation Studies, by Phalen, R.F., CRC Press, Inc., Boca Raton, Florida, 1984.

38. Phalen, R.F. Testing for toxicity, Chapter 6 in Inhalation Studies, by Phalen, R.F., CRC Press, Inc., Boca Raton, Florida, 1984.

39. Phalen, R.F. Experimental designs, Chapter 7 in Inhalation Studies, by Phalen, R.F., CRC Press, Inc., Boca Raton, Florida, 1984.

40. Phalen, R.F. Facilities, Chapter 8 in Inhalation Studies, by Phalen, R.F., CRC Press, Inc., Boca Raton, Florida, 1984.

41. Phalen, R.F. Animal models, Chapter 9 in Inhalation Studies, by Phalen, R.F., CRC Press, Inc., Boca Raton, Florida, 1984.

42. Phalen, R.F. Regulations and guidelines, Chapter 10 in Inhalation Studies, by Phalen, R.F., CRC Press, Inc., Boca Raton, Florida, 1984.

43. Phalen, R.F. Pulmonary Dosimetry Models: Introduction, J. Toxicol. and Envir. Health, 18:231-234, 1984.

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*46. Kleinman, M.K., Phalen, R.F., Mannix, R.C., Azizian, M. and Walters, R.B. Influence of Fe and Mn ions on the incorporation of radioactive 35-SO2 by sulfate aerosols, Atmos. Envir., 19:607-610, 1985.

47. Phalen, R.F., Hinds, W.C., John, W., Lioy, P.J., Lippmann, M., McCawley, M.A., Raabe, D.G., Soderholm, S.C. and Stuart, B.O. Particle Size-selective Sampling in the Workplace, American Conference of Governmental Industrial Hygienists, Cincinnati, OH, 1985.

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*52. Stuart, B.O., Lioy, P.J. and Phalen, R.F. Particle size-selective sampling in establishing threshold limit values, Appl. Ind. Hyg., 1:138-144, 1986.

*53. Smith, C.M., Batcher, S., Catanzaro, A., Abraham, J.L. and Phalen, R.F. Sequence of bronchoalveolar lavage and histopathologic findings in rat lungs early in inhalation asbestos exposure, J. Toxicol. Envir. Health, 20:147-162, 1987.

*54. Bhalla, D.K., Mannix, R.C., Lavan. S.M., Phalen, R.F., Kleinman, M.T. and Crocker, T.T. Tracheal and bronchioalveolar permeability changes in rats inhaling oxidant atmospheres during rest or exercise, J. Toxicol. Envir. Health, 22:417-437, 1987.

*55. Walters, R.B., Nordenstam, B.J. and Phalen, R.F. A generator for the production of sulfuric acid coated diesel soot aerosols, Atmos. Envir., 22:17-23, 1988.

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13. Phalen, R.F. and Oldham, M.J. Predicted inhaled particle deposition for growing people, Proc. Air Pollut. Contr. Assoc. 80(6):1-17, 1987.
14. Phalen, R.F. Aerosol sampling in relation to inhaled particle deposition, Proc. Air Pollut. Contr. Assoc. 80(2):1-12, 1987.
15. Yeh, H.C., Cuddihy, R.G., Fisher, G.L., Moss, O.R., Phalen, R.F., Schlesinger, R.B. and Swift, D.L. The proposed NCRP respiratory tract model, First Symposium on Pollution and Health Effects of Aerosols, Taiwan, September 10-12, 1991, pp. 44-52.
16. Phalen, R.F. What are we breathing and how can it best be characterized, in Phalen and Bell (eds.), Proceedings of the Third Colloquium on Particulate Air Pollution and Human Health, Air Pollution Health Effects Laboratory (APHEL Report No. 99-01), University of California, Irvine, CA, October, 1999, pp. 3-15 to 3-16.
17. Phalen, R.F. Inhaled particle dosimetry, in Phalen and Bell (eds.), Proceedings of the Third Colloquium on Particulate Air Pollution and Human Health, Air Pollution Health Effects Laboratory (APHEL Report No. 99-01), University of California, Irvine, CA, October, 1999, pp. 3-25 to 3-28.
18. Phalen, R.F. Particulate air pollution and health. Proceedings of the Eighth International Conference on Liquid Atomization and Spray Systems, Pasadena, CA, July, 2000.
19. Phalen, R.F. and Oldham, M.J. Models of particle deposition as a function of age. Proceedings of the International Symposium: Susceptibility Factors for Respiratory Diseases, Lovelace Respiratory Research Institute, Santa Fe, New Mexico, October, 2000.
20. Phalen, R.F., Improving the scientific advice provided by the Clean Air Scientific Advisory PM Subcommittee, Proceedings of the Joint Statistical Meetings, San Diego, CA, August 2012.

PAPERS READ AT RECENT SCIENTIFIC MEETINGS: (**=keynote or invited speaker)*

*84. Phalen, R.F., Oldham, M.J. and Moss, O.R., Physiological Factors Affecting Aerosol Deposition, Society of Toxicology Annual Meeting, Nashville, TN, March 2002.
85. Moss, O.R., Asgharian, B. and Phalen, R.F. Using Models that Predict Inhaled Aerosol Deposition, Society of Toxicology Annual Meeting, Nashville, TN, March 2002.
86. Oldham, M.J., Phalen, R.F., Robinson, R.J., Kleinman, M.T. Performance of a New Mobile Whole-Body Mouse Exposure System, American Association for Aerosol Research Specialty Conference, Pittsburgh, PA, April-May, 2003.
87. Phalen, R.F. and Oldham, M.J. Selecting Realistic PM Doses for In-Vitro Studies, American Association for Aerosol Research Specialty Conference, Pittsburgh, PA, April-May, 2003.
*88. Phalen, R.F. The Particulate Air Pollution Controversy, International Belle Conference on Non-Linear Dose Response Relationships in Biology, Toxicology and Medicine, University of Massachusetts, Amherst, MA, May 2003.
*89. Phalen, R.F., Inhaled Particle Deposition Considerations, Workshop of the Committee on Animal Models for Testing Interventions Against Aerosolized Bioterrorism Agents, National Research Council of the National Academy of Sciences, Washington, D.C., August 2004.
*90. Phalen, R.F. and Oldham, M.J. Particle Doses for In-Vitro Studies, International Society for Aerosols in Medicine 2005 Congress, Perth, Australia, March 2005.
*91. Phalen, R.F. Particulate Air Pollution: What Should Be Done?, American Occupational Health Conference, Washington, D.C., May 2005.
92. Phalen, R.F., and Oldham, M.J., What Particle Doses Are Realistic For In-vitro Toxicology Cell Culture Studies? Frontiers in Aerosol Dosimetry Research conference, Irvine, CA, October, 2005.
*93. Phalen, R.F., The Role of Animal Studies in Establishing PM Cause and Effect Relationships, Air & Waste Management 99th Annual Conference, New Orleans, LA, June 2006.

*94. Phalen, R.F., What To Do When Your Research is Under Attack, Society of Toxicology 46th Annual Meeting, Charlotte, NC, March 2007.

*95. Phalen, R.F., Relevance of Animal Models for Aerosol Deposition, Clearance, and Toxicology, 16th Congress of the International Society for Aerosols in Medicine, Tours, France, June, 2007.

*96. Phalen, R.F., Particulate Air Pollution: Is it Killing us? U.S.D.A.-Agricultural Air Quality Task Force meeting, May 2007, San Diego, CA.

*97. Phalen, R.F., Species Differences in Respiratory Toxicity, S. Calif. Soc. Toxicol. Ann. Meeting, Thousand Oaks, CA, October, 2007.

*98. Phalen, R.F., Particulate Air Pollutants, Am. Coll. Allergy, Asthma & Immunol. Conference, Dallas, TX, November, 2007.

*99 Phalen, R.F., and Mendez, L.B., Dosimetry considerations for animal aerosol inhalation studies, Aerosol Dynamics and Health: Strategies to Reduce Exposure and Harm, Institute for Science and Health, Cardiff, UK, June, 2008.

*100. Phalen, R.F., Health effects of particulate air pollution in California, California Air Resources Board Symposium, Sacramento, CA, February, 2010.

*101. Phalen, R.F., Mendez, L.B., and Oldham, M.J., New developments in aerosol dosimetry, 2010 AAAR International Specialty Conference on Air Pollution and Health, March, 2010, San Diego, CA.

*102. Phalen, R.F., Introduction to Air Pollution Science, Grand Rounds UCI Center for Occupational & Environmental Health, February, 2012, Irvine, CA.

*103. Phalen, R.F., Improving the scientific advice provided by the Clean Air Scientific Advisory PM Subcommittee, Joint Statistical Meetings, August, 2012, San Diego, CA. Proceedings pp. 2321-2323.

*104. Phalen, R.F., Acceptance speech for Public Outreach & Education Award, Joint Annual Meeting of the California Biomedical Research Assoc., and the California Society for Biomedical Research, May 2013, San Francisco, CA.

105. Phalen, R.F., The deposition and fates of inhaled transport-related particulate material, Sustainable Goods Movement Symposium, Palm Springs, CA, November 21-22, 2013.

*106. Phalen, R.F., Whole body vs. nose-only aerosol exposures, Invited continuing education course, Society of Toxicology 53rd Annual Meeting, Phoenix, AZ, March 23, 2014.

107. Phalen, R.F., and Raabe, O.G., The evolution of inhaled particle deposition modeling, Conference: Advancing Aerosol Dosimetry Research, Irvine, CA, October 4-25, 2014.

*108. Phalen, R.F., Biomedical Research: Role, Current Issues, and Funding, CA Biomedical Research Assoc. 32nd Ann. Mtg., La Jolla, CA, May 4-5, 2016.

ROBERT W. PULS

Owner/Principal, Robert Puls Environmental Consulting, LLC

EDUCATION

UNIVERSITY OF ARIZONA, Department of Soil and Water Science. Tucson, AZ. Ph.D. Soil and Water Science. 1986.

UNIVERSITY OF WASHINGTON, College of Forestry. Seattle, WA. Masters Forest Resources.1979.

UNIVERSITY OF WISCONSIN, Department of Soil Science, Madison, WI. B.S. Soil Science and Natural Resources. 1978.

UNIVERSITY OF NOTRE DAME, College of Arts and Sciences, South Bend, IN. 1968-1970.

Dr. Robert Puls is owner and principal scientist of Robert Puls Environmental Consulting, LLC. His company has received funding for projects from the National Ground Water Association, the Ground Water Protection Council, the Environmental Defense Fund, and the Wyoming Outdoor Council. Dr. Puls recently retired as the Director of the Oklahoma Water Survey at the University of Oklahoma and Associate Professor in the College of Atmospheric and Geographic Sciences. As Director, he was involved in water resource protection issues related to oil and gas operations, water reuse strategies, ground water protection and restoration, ecological effects from climate change and aquifer storage and recovery as a means to conserve water and augment drinking water supplies. He has made a number of invited presentations on these topics at national and international conferences. Prior to his arrival at the University of Oklahoma, he worked for 25 years at the Environmental Protection Agency's (EPA) Robert S. Kerr Research Laboratory in Ada, OK. While there, he served in many capacities including: Senior Research Soil Scientist, Branch Chief, Research Director and Lab Director. At EPA his research focused on use of passive systems to restore groundwater from nonpoint (e.g. nitrate) and point source contamination (e.g. chromium, arsenic, chlorinated solvents), site characterization and groundwater sampling, and the transport and fate of contaminants in the subsurface. Dr. Puls has more than 80 peer-reviewed publications and more than 150 publications on the above topics and received a number of Agency, interagency and industry awards for his research. He also led a major effort involving federal, state, and local partners to investigate the feasibility of using in-situ methods to reduce arsenic contamination in drinking water and has served on numerous Agency and interagency work groups.

EMPLOYMENT

ROBERT PULS ENVIRONMENTAL CONSULTING, LLC, Owner & Principal Scientist (www.robertpulsenvironmentalconsulting) [redacted] 06/01/2012-present.

His company has primarily received funding for projects from the Environmental Protection Agency, National Ground Water Association, the Ground Water Protection Council, the Environmental Defense Fund, and the Wyoming Outdoor Council on topics related to water resources and hydraulic fracturing operations for oil and gas production.

UNIVERSITY OF OKLAHOMA, Director, Oklahoma Water Survey (www.oklahomawatersurvey.org), Associate Professor, COLLEGE OF ATMOSPHERIC AND GEOGRAPHIC SCIENCES, 301 David L. Boren Pkwy. Suite 3530, 4 Partners Place, Norman, OK 73072, 01/01/12 – 07/01/2015

As Director he was responsible for the overall direction and development of programs at the Oklahoma Water Survey. Activities included Outreach, Education and Research on water issues important to the state of Oklahoma including oil and gas operations (water

conservation, recycling, baseline water sampling programs, best management practices), water reuse, aquifer storage and recovery, and nutrient transport in watersheds. He received funding from the National Science Foundation. He taught an undergraduate course entitled 'Hydraulic Fracturing & Water Resources'.

U.S. ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF RESEARCH AND DEVELOPMENT (ORD), NATIONAL RISK MANAGEMENT RESEARCH LABORATORY (NRMRL), GROUND WATER AND ECOSYSTEMS RESTORATION DIVISION (GWERD)
P.O. Box 1198, Ada, OK. 74820, 8/87 – 12/11.

03/10 – 12/11, Agency National Program Technical Lead, Hydraulic Fracturing and Drinking Water Resources, Ground Water & Ecosystems Restoration Division, National Risk Management Research Laboratory, USEPA

***06/08 – 03/10,* Acting Director,** Ground Water and Ecosystems Restoration Division

- In addition to Director of Research responsibilities outlined below, also now responsible for the safe operation and management of the R.S. Kerr Research Center, the facility, its research programs, supporting programs, and federal staff. The Center employs about 120 personnel including federal staff, contractors and cooperators.

***10/03 – 06/08,* Director of Research**, Ground Water and Ecosystems Restoration Division

- Responsibilities include providing the direction and management of the research program within the Division which includes research directed at the protection and restoration of ground water and surface water resources
- **Responsible for management of resources used to conduct the Divisions intramural and extramural research program (>$6 million/yr) and overall Laboratory operating budget of >$15 million/yr.**
- As a recognized expert in the Divisions areas of research, serves as a technical advisor

10/98 - 9/03 Supervisory Environmental Scientist and Chief, Remediation Branch

- Coordination, management and direction of in-house remediation research to answer regional and program office needs
- **Management of extramural and inter-agency research agreements, and**
- **Management of in-house contract research**
- Performance of research in the areas of innovative ground water remediation technologies, fate and transport of nanomaterials in the subsurface, and source water protection of underground sources of drinking water.

8/87 - 9/98, Research Soil Scientist GS 15 *(promotion via EPA-ORD Technical Qualifications Board Process)*
Senior Research Soil Chemist
Principal Investigator for multi-agency, multi-disciplinary research involving the fate, transport and remediation of inorganic contaminants in subsurface systems.
Research has included the following:

- sorption-desorption processes of inorganic and organic contaminants; Inorganic colloidal transport processes in the subsurface,
- application of innovative remediation techniques (permeable reactive barriers) to remediate contaminated (e.g. chromium, nitrate, arsenic) groundwater, the development and evaluation of innovative, cost-effective and representative methods to sample ground water and
- in situ geochemical methods to mitigate elevated levels of arsenic in drinking water supplies.

WESTINGHOUSE HANFORD COMPANY - BASALT WASTE ISOLATION PROJECT, U.S. Department of Energy. Richland, WA. 8/86 - 8/87. Senior Geochemist.

Project Officer and Senior Scientist in charge of directing, supervising, and managing the laboratory sorption work performed for the Project by Battelle, Pacific Northwest Laboratory. Part of an interdisciplinary research team studying the transport and fate of radionuclides in confined basalt aquifers in central Washington for the disposal of high level radioactive wastes.

DEPARTMENT OF SOIL AND WATER SCIENCE, UNIVERSITY OF ARIZONA.
Tucson, AZ. 8/82-8/86. Research Associate.

SOIL AND LAND USE TECHNOLOGY, INC.
Columbia, MD. 8/80-8/82. Senior Soil Scientist. Conducted soil surveys in Washington, Oregon, California, Wyoming and Colorado.

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES.
Longview, WA. 5/79-8/80. Forest Soil Specialist.

LEADERSHIP

- Nature Conservancy – member of 'Science and Nature for People' work group to address best management practices for oil and gas operations in the U.S. and abroad.
- Ground Water Protection Council, Ground Water Education and Research Foundation, 2012-present, scientific technical expert on Foundation Board.
- EPA National Technical Lead for study on the relationship between hydraulic fracturing for oil and gas resources and protection of drinking water resources. March 2010 – December 2011.
- Acting Director of NRMRL division of 50 federal staff responsible for leading 25 Principal Investigators in a diverse research program focused on the protection and restoration of ground water and surface water resources. The research program addressed multiple programs, and as Director, provided for the safe and efficient operation of a stand-alone research facility. In addition to the 50 federal staff, the Robert S. Kerr Research Center housed an additional 80 non-federal support staff with a total operating budget of more than 15 million dollars. (Ada, OK), June 2008 – January 2010.
- Director of Research of same division charged with leading and providing the scientific direction and management of the research program and management of resources used to conduct the divisions intramural and extramural research program (approx. $6 million/yr). 2003 - 2008
- Branch Chief, Subsurface Remediation Branch. Supervised 15 staff scientists engaged in innovative subsurface remediation research, primarily addressing the restoration of ground water resources. The program was primarily field-based with projects throughout the U.S. and done in collaboration with EPA Program offices, EPA regions, DoD, USCG, DOE, states and other partners.1998 – 2003
- As Chair, Interagency Ground Water Research Coordination Work Group (EPA, DoD, DOE, NSF, NIEHS), led interagency effort to identify research areas of common interest among the different government agencies, inform each other of respective research programs and foster collaboration on research across agencies. 2006 – 2008.
- As Co-Chairman, EPA's Remedial Technology Development Forum (RTDF) on Permeable Reactive Barriers (DOE, DoD, Dupont, GE, EPA) led interagency and inter-governmental and private industry group to coordinate on research, development and application of permeable reactive barriers for ground water remediation. This effort was primarily responsible for the widespread acceptance of this technology and served as a model for collaboration.
- As research team leader led an Agency-wide effort to establish consistent and effective methods for ground water sampling at hazardous waste sites. The emphasis was on

accurate assessment of contaminant loading and transport in ground water systems. Methods used in the past had introduced substantial uncertainty into the accuracy of samples, particularly for metals. The effort involved coordination with EPA Program offices and all 10 EPA regional offices as well as other EPA labs and other government agencies.

HONORS & AWARDS

National, Inter-Agency Awards

- USEPA Bronze Medal 2012. For rollout of USEPA National Study Plan on "Hydraulic Fracturing and Drinking Water Resources".
- USEPA Bronze Medal, 2010. For Outstanding Achievements in the research and Field Demonstration of Innovative Technology for Groundwater remediation at the ASARCO East Helena Smelter site.
- U.S. Department of the Interior National *Partners in Conservation Award* for aquifer storage and recharge research collaboration with Bureau of Reclamation, Chickasaw Indian Tribe, Oklahoma Water Resources Board, Oklahoma Department of Environmental Quality, Oklahoma Climatological Survey, National Oceanic Atmospheric Administration, and Oklahoma State University. May 7, 2009
- USEPA/ORD Scientific and Technological Achievement Award (**STAA**), 2008, for Systematic Research on Cost-Effectively and Efficiently Removing Groundwater Nitrate Using agricultural By-Products
- USEPA Award of Excellence for work on Recovery Efforts, Hurricane Katrina, 2007
- USEPA/ORD Scientific and Technological Achievement Award (**STAA**), 2005, for Leading Edge Science on the Mechanisms of removal of Arsenic and Nitrate from Groundwater Using Zerovalent Iron in Permeable Reactive barriers
- USEPA/ORD Scientific and Technological Achievement Award (**STAA**), 2005, for Innovative Research and Development of Permeable Reactive Barrier Technology
- USEPA/ORD Scientific and Technological Achievement Award (**STAA**), 2004, for Developing an Innovative, Scientifically Rigorous and Practical Method for Remediation of Arsenic in Ground Water
- National Environmental Excellence Award for Best Available Environmental Technology, National Association of Environmental Professionals, 2003. For robust remediation strategy to treat hexavalent chromium in soil and ground water below active governmental aircraft service center.
- USEPA Bronze Medal, 2002. For Research and Technical Assistance Related to the Development and Application of an Innovative Remediation Approach for Subsurface and Surface Systems.
- USEPA/ORD Scientific and Technological Achievement Award (**STAA**), 2002, for Pioneering Research on the Long-Term Performance of Permeable Reactive Barriers for Ground-Water Remediation.
- USEPA/ORD Scientific and Technological Achievement Award (**STAA**), 2000, for Research and Development of Permeable Reactive Barriers as an In Situ Remedial Approach for the Cost-Effective Restoration of Ground-Water Resources.
- USEPA Science Achievement Award in Waste Management. 1998. Air & Waste Management Association. For Outstanding Basic and Applied Research that Advanced the Development and Application of Permeable Reactive Barriers to Remediate Contaminated Ground Water. Presented by EPA Administrator, Carol Browner.
- USEPA/ORD Scientific and Technological Achievement Award (**STAA**), 1997, for Improved Methods for High Resolution Discrete Interval Chemical Monitoring in Water and Watersheds.
- USEPA/ORD Scientific and Technological Achievement Award (**STAA**), 1993, for Transport of Inorganic Colloids Through Natural Aquifer Material.

INTERAGENCY WORKGROUPS/COMMITTEE MEMBERSHIP

- Ground Water Protection Council, Education and Research Foundation, 2012 – 2016.
- ASTM Committee D18.21, Soil and Rock: Groundwater and Vadose Zone Investigations, 2012-2016.
- ASTM Committee D18.26, Hydraulic Fracturing, 2012-2016.
- Member, Advisory Board, Water Technologies for Emerging Regions (WaTER) Center, University of Oklahoma, 2012-2015
- Oklahoma Governors Work Group on Aquifer Recharge/Reuse 2008 - 2015
- Oklahoma Water Resources Research Institute Advisory Board, 2007 - 2012
- Member, Interstate Technology Regulatory Council (ITRC) panel for permeable reactive barriers, 1998- 2005; 2009 - 2011
- Chair, Interagency Ground Water Research Coordination Work Group (EPA, DoD, DOE, NSF, NIEHS), 2006 - 2009
- Co-Chairman, EPA's Remedial Technology Development Forum (RTDF) on Permeable Reactive Barriers (DOE, DoD, Dupont, GE, EPA), 1995-2002
- Interagency Work Group (DOE, USGS, EPA, NRC, USDA), Models for Reactive Transport in Subsurface Systems, 2003- 2007.
- National Research Council, Commission on Geosciences, Environment, and Resources, Advisory Panel on reorganization of U.S. Bureau of Mines, 1994-1996

AFFILIATIONS

- Special editor for WATER on state of the art methods for ground-water sampling issues
- Editorial Advisory Board, Land Contamination and Reclamation Journal
- American Geophysical Union
- National Ground Water Association
- ASTM committees

SELECTED PEER-REVIEWED PUBLICATIONS

Puls, R.W. and L.D. Sanders. 2017, Water-Energy Nexus and Environmental Aspects of Oil and Gas Production in J.R. Ziolkowska, J.M. Peterson, editors. *Competition for Water Resources: Experiences and Management Approaches in the US and Europe*. Elsevier: Cambridge, MA.Elsevier Science.

Su, C.; Puls, R.W.; Krug, T.A.; Watling, M.T.; O'Hara, S.K.; Quinn, J.W.; Ruiz, N.E. 2013. Travel distance and transformation of injected emulsified zero valent iron nanoparticles in the subsurface during two and half years. Water Research, 47: 4095-4106.

Su, C., R.W. Puls, T.A. Krug, M.T. Watling, S.K. O'Hara, J.W. Quinn, and N.E. Ruiz. 2013. A Two and Half-year-performance Evaluation of a Field Test on Treatment of Source Zone Tetrachloroethene and its Chlorinated daughter Products Using Emulsified Zero Valent Iron Nanoparticles. Water Research, 46:5071-5084.

Langston, M., R. Puls, S. Ferrell, H. Zhang. 2013. Hydraulic Fracturing and Domestic Water Issues, Oklahoma Cooperative Extension Service, WREC-103, http://osufacts.okstate.edu

Wilkin R.T., S.D. Acree, R. Ross, R.W. Puls, T.R. Lee, L. Woods. 2013. Fifteen-year assessment of a permeable reactive barrier for treatment of chromate and

trichloroethylene in groundwater. Science of the Total Environment 468–469 (2014) 186–194

Puls, R.W. 2011 Contributing author, EPA's Plan to Study the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources, EPA/600/R-11/122, November 2011

Puls, R.W. 2010. Opportunity for Stakeholder Input on Criteria for Selecting Case Studies for Consideration in EPA's Hydraulic Fracturing Research Study. http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/wells_hydroout.cfm#hfcomments

Puls, R.W. 2010. Opportunity for Stakeholder Input on Conceptual Model for Potential Impacts to Drinking Water Resources from Hydraulic Fracturing. http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/wells_hydroout.cfm#hfcomments

Puls, R.W.. 2010. Water Availability and Management of Water Resources, Oklahoma Town Hall Meeting of Water Plan for OK

Smith, S.J., S.T. Paxton, S.C. Christensen, R.W. Puls and J.R. Greer. 2009. Determination of Flow Contribution and Water Quality With Depth in Public-Supply Wells and Investigation of Low-Cost Arsenic Remediation Through Well Modification. EPA/600/R-09/036

Su, C. and R.W. Puls. 2008. Arsenate and Arsenite Sorption on Magnetite: Relations to Ground Water Arsenic Treatment Using Zerovalent Iron and Natural Attenuation, *Water, Air and Soil Pollution*, 193:65-78.

Su, C. and R.W. Puls. 2007. Utilization of zero-valent iron for arsenic removal from groundwater and wastewater. In I.M.C. Lo, R. Surampalli, and K.C.K. Lai (Eds.), *American society of civil engineers, zero-valent iron reactive materials for hazardous waste and inorganics removal* (pp. 111-150). Reston, VA: ASCE Chapter 8.

Ford, R.G., Wilkin, R.T., and R.W. Puls 2007 Monitored Natural Attenuation of Inorganic Contaminants in Ground Water Volume 1 - Technical Basis for Assessment, EPA/600/R-07/139

Ford, R.G., Wilkin, R.T., and R.W. Puls. 2007. Monitored Natural Attenuation of Inorganic Contaminants in Ground Water Volume 2: Assessment for Non-Radionuclides Including Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Nitrate, Perchlorate, and Selenium, EPA/600/R-07/140

Su, C. and R.W. Puls. 2007. Removal of added nitrate in the single, binary, and ternary systems of cotton burr compost, zerovalent iron, and sediment: Implications for groundwater nitrate remediation using permeable reactive barriers, *Chemosphere* 67(8): 1653-1662.

Su, C. and R.W. Puls. 2007. Removal of added nitrate in cotton burr compost, mulch compost, and peat: Mechanisms and potential use for groundwater nitrate remediation. *Chemosphere*, 66(1): 91-98.

Puls. R.W. 2006. Long-Term Performance of Permeable Reactive Barriers: Lessons Learned on Design, Contaminant Treatment, Longevity, Performance Monitoring and Cost – An Overview. In Viable Methods of Soil and Water Pollution Monitoring, Protection and Remediation, Editor: Irene Twardowska, Kluwer Academic Publishers

Barcelona, M.J., M.D. Varljen, R.W. Puls, D. Kaminski. 2005. Ground Water Purging and

Sampling Methods: History vs. Hysteria. Ground Water Monitoring & Remediation 25 (1): 52-62.

Su, C. and R.W. Puls. 2004. Significance of Iron (II,III) Hydroxycarbonate Green Rust in Arsenic Remediation Using Zerovalent Iron in Laboratory Column Tests. *Environmental Science and Technology*, 38(19): 5224-5231.

Su, C. And R.W. Puls. 2004. Nitrate Reduction by Zerovalent Iron: Ligand Effects of Formate, Oxalate, Citrate, Chloride, Sulfate, Borate, and Phosphate. *Environmental Science and Technology,* 38(9); 2715-2720.

Wilkin R.T. and R.W. Puls. 2004. Evaluation of Permeable Reactive Barrier Performance, Prepared under the auspices of the Member Agencies of the Federal Remediation Technologies Roundtable, EPA/542/R-04/004.

Wilkin R.T. and R.W. Puls. 2003. Capstone Report on the Application, Monitoring, and Performance of Permeable Reactive Barriers for Ground-Water Remediation. Volume 1: Performance Evaluations at Two Sites, EPA/600/R-03/045a.

Su, C. and R.W. Puls. 2003. In Situ Remediation of Arsenic in Simulated Groundwater Using Zerovalent Iron: Laboratory Column Tests on Combined Effects of Phosphate and Silicate. *Environmental Science and Technology*, 37(11) 2582-2587.

Lin, Z. and R.W. Puls. 2003. Potential Indicators for the Assessment of Arsenic Natural Attenuation in the Subsurface. *Advances in Environmental Research*, 7, 825-834.

Paul, C.J., M.S. McNeil, F.P. Beck Jr., P.J. Clark, R.T. Wilkin, and R.W.Puls. 2003. Capstone Report on the Application, Monitoring, and Performance of Permeable Reactive Barriers for Ground-Water Remediation. Volume 2: Long-Term Monitoring of PRBs: Soil and Ground Water Sampling Performance Evaluations at Two Sites, EPA/600/R-03/045b.

Wilkin, R. T., R.W. Puls and G.W. Sewell. 2002. Long-term Performance of Permeable Reactive Barriers Using Zero-valent Ion: An Evaluation at Two Sites. EPA/600/S-02/001.

Powell, R.M., P.D. Powell and R.W. Puls. 2002. Economic Analysis of the Implementation of Permeable Reactive Barriers for Remediation of Contaminated Ground Water. EPA/600/R-02/034.

Beck, F.P., P.J. Clark, and R.W. Puls. 2002. Direct Push Methods for Locating and Collecting Cores of Aquifer Sediment and Zero-Valent Iron from a permeable Reactive Barrier. *Ground Water Monitoring and Remediation*, 22(3):165-168.

Wilkin, R.T., R. W. Puls, and G.W. Sewell. 2001. Long-term Performance of Permeable Reactive Barriers Using Zero-Valent iron: Geochemical and Microbiological Effects. *Groundwater*, 41:493-503

Khan, F.A., and R.W. Puls. 2001. In Situ Abiotic Detoxification of Hexavalent Chromium in the Capillary Fringe Zone. *Ground Water Monitoring and Remediation*, 23(1):77-84.

Su, C. and R.W. Puls. 2001. Arsenate and Arsenite Removal by Zero-Valent iron: Effects of Phosphate, Silicate, Carbonate, Borate, Sulfate, Chromate, Molybdate, and Nitrate, Relative to Chloride. *Environmental Science and Technology*, 35(22) 4562-4568.

Puls, R.W. and W.J. Deutsch. 2001. Redox Processes in Inorganic Remediation. In Monitoring Oxidation-reduction Processes for Groundwater Restoration: A Workshop Summary. EPA/600/R-02/002.

Su, C., and R.W. Puls. 2001. Arsenate and Arsenite Removal by Zero-Valent Iron: Kinetics, Redox Transformation, and Implications for In Situ Groundwater Remediation. *Environmental Science and Technology*, 35(7) 1487-1492.

Lin, Z. and R.W. Puls. 2001. Studies of Interfacial Reactions Between Arsenic and Minerals and its Significance to Site Characterization. *Environmental Geology*, 40:1433-1439.

Paul, C.J., F.A. Khan and R.W. Puls. 2001. In Situ Reduction of Chromate-Contaminated Soils. In Handbook of Groundwater Remediation of Trace Metals, Radionuclides, and Nutrients with Permeable Reactive Barriers, Editors: D.L. Naftz, S.J. Morrison, J.A. Davis, and C.C. Fuller, Academic Press

Lin, Z. and R.W. Puls. 2000. Adsorption, Desorption and Oxidation of Arsenic Affected by Clay Minerals and Aging Process. *Environmental Geology*, 39(7):753-759.

Blowes, D.W., C.J. Ptacek, S.G. Benner, C.W.T. McRae, T.A. Bennett and R.W. Puls. 2000. Treatment of Inorganic Contaminants Using Permeable Reactive Barriers. *J. Contam. Hydrol*. 45(2000):123-137.

Liang, L., N. Korte, B. Gu, R. Puls, C. Reeter. 2000. Geochemical and Microbial Reactions Affecting the Long-term Performance of in situ AIron Barriers@, *Advances in Environmental Research,* 4(2000):273-286.

Beck, F.P., P.J. Clark, and R.W. Puls. 2000. Location and Characterization of Subsurface Anomalies Using a Soil Conductivity Probe. *Ground Water Monitoring and Remediation*, 2:55-59.

Chattopadhyay, S. and R.W. Puls. 2000. Forces Dictating Colloidal Interactions Between Viruses and Soil. *Chemosphere*, 41:1279-1286.

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SELECTED CONFERENCE PROCEEDINGS

Puls. R.W. Water Use for High Volume Hydraulic Fracturing in Oklahoma, Ground Water Protection Council, Annual Meeting, Oklahoma City, OK, Sep 27-30, 2015.

Puls, R.W. Municipal Wastewater Reuse in Oklahoma, Ground Water Protection Council, Annual Meeting, Oklahoma City, OK, Sep 27-30, 2015.

Puls, R.W. Baseline Water Quality Testing for Oil & Gas Operations. Battelle International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, CA, May 2014.

Puls, R.W. Pre-drill or baseline Water Quality Testing for Oil & Gas Operations, National Ground Water Association Summit 2014, May 4-7 Denver, Co.

Puls, R.W. Hydraulic Fracturing and Water Resources. Expert Panel presentation organized by Oklahoma Energy resources Board, April 2, 2014, Norman, OK.

Puls, R.E. Sustainability of Groundwater Systems. Oklahoma Ground Water Association Meeting, Jan 15, 2014, Norman, OK

Puls, R.W. Overview of State Baseline Water Quality Monitoring Programs for Oil and Gas Operations. Ground Water Protection Council, Annual Meeting, St. Louis, MO, Sep 22-25, 2013.

Puls, R.W. Risk Management Best Practices for Oil & Gas Operations Using Hydraulic Fracturing, Ground Water Protection Council, Annual Meeting, Nashville, TN, Sep 25, 2012.

Puls, R.W. Protecting Water Resources throughout the Hydraulic Fracturing Lifecycle: Lessons Learned and Additional Research Needs. Battelle International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, CA, May 2012..

Wilkin, R.T. and R.W. Puls. Carbon and Sulfur Accumulation and Iron Mineral Transformations in Permeable Reactive Barriers Containing Zero-Valent Iron. 2001 International Containment & Remediation Technology Conference and Exhibition, 10-13 June 2001, Orlando, Florida, USA.

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Puls, R.W., N. Korte, A. Gavaskar, and C. Reeter. 2000. Long-term Performance of Permeable Reactive Barriers: An Update on a U.S. Multi-Agency Initiative, **ConSoil 2000**, Sep 18-22, 2000, Leipzig, Germany.

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Puls, R.W. 1996. The Application of Passive Ground Water Remediation Technologies in the US: Experiences and Recommendations. **International Workshop** on Passive Systems for In Situ Remediation of Ground Water and Soil. University of Dresden, Dresden, Germany. May 2-3, 1996.

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Taylor, C.S., R.W. Puls, and G.L. Laidig. 1982. Kenaf Newsprint System. Prepared for the **American Newspaper Publishers Association** by SaLUT, Inc.

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Puls, R.W. 1980. Soil Inventory of the White River National Forest, Colorado. Prepared for the **U.S Forest Service** in cooperation with the **U.S. Department of Agriculture** Soil Conservation Service.

Puls, R.W. 1979. Wastewater Renovation in Selected Forest Ecosystems and Effects on Biomass. Masters Thesis. University of Washington.

SELECTED PRESENTATIONS, INTERNATIONAL MEETINGS

Considerations for hydraulic fracturing and groundwater and surface water protection: lessons learned in the U.S. **Unconventional Shale Gas and Freshwater Resources, Madrid, Spain, Mar 7, 2012**

Long-Term Performance of Permeable Reactive Barriers: Lessons Learned on Design, Contaminant Treatment, Longevity, Performance Monitoring and Cost – An Overview, **NATO Programme Security Through Science Advanced Workshop, Viable Methods of Soil and Water Pollution Monitoring, Protection and Remediation** (Keynote address), Krakow, Poland, June 27 – Jul 1, 2005.

Long-Term Performance of Permeable Reactive Barriers: Lessons Learned, Future Directions, **1st International Symposium on Permeable Reactive Barriers** (Keynote address), Belfast, Northern Ireland, March 14-14, 2004.

Cost Analysis for Permeable Reactive Barriers for Remediation of Ground Water, **3rd International Conference on Remediation of Chlorinated and Recalcitrant Compounds**, Monterrey, CA, May 20-23, 2002.

Permeable Reactive Barriers for Ground water Remediation, Keynote Address, **Permeable Reactive Barriers Net Workshop: PRB Technology and its Current Status.** Belfast Northern Ireland, April 25-27, 2001.

Permeable Reactive Barriers for Inorganic Contaminants, **Permeable Reactive Barriers Net Workshop: PRB Technology and its Current Status.** Belfast Northern Ireland, April 25-27, 2001.

PRB Regulatory Aspects and Implementation, **Permeable Reactive Barriers Net Workshop: PRB Technology and its Current Status**. Belfast Northern Ireland, April 25-27, 2001.

Long-term Performance of Permeable Reactive Barriers: An Update on a U.S. Multi-Agency Initiative, **ConSoil 2000**, Sep 18-22, 2000, Leipzig, Germany.

Long-term Performance Assessment of Permeable Reactive Barriers to Remediate Contaminated Ground Water. 2000. **Fourth USA/CIS Joint Conference/Hydrologic Issues of the 21st Century: Ecology, Environment and Human Health**, San Francisco, November 7-10, 1999.

Performance Monitoring of Permeable Reactive Barriers to Remediate Contaminated Groundwater. 1999. **Society for Environmental Toxicology and Chemistry-Europe**, 9th Annual Meeting, Quality of Life and Environment in Cultured Landscapes. May 25-29, 1999, Leipzig, Germany.

Emplacement Verification and Long-term Performance Monitoring for Permeable Reactive Barriers at USCG Support Center, Elizabeth City, NC. **GQ >98 International Conference**: Groundwater Quality: Remediation and Protection, Tubingen, Germany, Sep 21-25, 1998.

The Application of Permeable Reactive Barriers to Remediate Ground water. **NATO/CCMS** Pilot Study Meeting, Vienna, Austria, February 22-28, 1998.

The Application of Passive Ground Water Remediation Technologies in the US : Experiences and Recommendations. **International Workshop** on Passive Systems for In Situ Remediation of Ground Water and Soil. University of Dresden, Dresden, Germany. May 2-3, 1996.

Toward a Better Understanding of the Complex Geochemical Processes Governing Subsurface Contaminant Transport. **International Conference and Workshop**, International Hydrological Society, "Transport and Mass Exchange Processes in Sand and Gravel Aquifers: Field and Modeling Studies". October 1-4, 1990, Ottawa, Canada.

Curriculum Vitae

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Education

University of North Carolina at Chapel Hill, School of Public Health, Department of Epidemiology, PhD., 1997.

Dissertation: "Time-Related Factors in Radiation-Cancer Associations Among Workers at Oak Ridge National Laboratory." A study of the relationship between external exposure to ionizing radiation and cancer mortality among workers at a nuclear facility.

University of North Carolina at Chapel Hill, School of Public Health, Department of Epidemiology, M.S.P.H., 1994.

Thesis: "Respiratory Effects of Chronic Hydrogen Sulfide Exposure." A study of lung function among workers occupationally exposed to hydrogen sulfide.

Duke University, B.A., 1991. Honors Society.

Professional Experience

Director, Program in Occupational Epidemiology, North Carolina Occupational Safety and Health Education and Research Center (2007-present).

Associate Professor, Department of Epidemiology, School of Public Health, University of North Carolina at Chapel Hill. 1/1/2009-current.

Honorary Professor, Division of Environmental Epidemiology, Utrecht University, The Netherlands. 1/1/2015-current.

Research Scientist and Fellow, Institute for Radiological Protection and Nuclear Safety, Fontenay-aux-Roses, France. 2017; 2016; 2015; 2012.

Faculty, International Summer School of Epidemiology, University of Ulm, Germany. 2013; 2006.

Senior Visiting Scientist, International Agency for Research on Cancer, Lyon, France, 2009-2010.

Visiting Research Fellow, Radiation Effects Research Foundation, Hiroshima, Japan, 2008.

Research Fellow, Alfried Krupp Kolleg Greifswald Foundation and Alfried Krupp von Bohlen und Halbach Foundation, Greifswald, Germany, 2006.

Assistant Professor, Department of Epidemiology, School of Public Health, University of North Carolina at Chapel Hill. 9/24/2004-12/31/2008.

Research Assistant Professor, Department of Epidemiology, School of Public Health, University of North Carolina at Chapel Hill. 7/1/2001-9/23/2004.

Post-Doctoral Research Fellow, International Agency for Research on Cancer, World Health Organization, Lyon, France. International Collaborative Study of Cancer Risk among Radiation Workers in the Nuclear Industry. 1999 – 2000.

Post-Doctoral Researcher, Department of Epidemiology, University of North Carolina. Ionizing Radiation and Mortality among Hanford Workers. 1997 - 1998.

Professional Service

Member, US Presidential Advisory Board on Radiation and Worker Health, US Presidential Appointment, 2009-present; and, *Chair*, Working Group on Scientific Issues, Presidential Advisory Board on Radiation and Worker Health, White House, 2011-present.

Chair, Radiation Advisory Committee, Standing Committee, US Environmental Protection Agency (EPA), Washington, DC, 2012-present.

Member, Science Advisory Board, US Environmental Protection Agency (EPA), Washington, DC, 2015-2017.

Member, Scientific and Ethical Committee for the Health Effects Study on A-bomb Survivors' Children, Radiation Effects Research Foundation (RERF), Hiroshima, Japan, 2016-2018.

Member, Institute of Medicine, Committee to Review the Health Effects in Vietnam Veterans of Exposure to Herbicides – Tenth Biennial Update, National Academies of Science, Washington DC, 2014-2016.

Member, Institute of Medicine, Committee on Research Directions in Human Biological Effects of Low Level Ionizing Radiation, National Academies of Science, Washington DC, 2013-2014.

Member, Institute of Medicine, Committee on Review of the Department of Labor's Site Exposure Matrix Database, National Academies of Science, Washington DC, 2011-2013.

Reviewer, Institute of Medicine, Committee on Blue Water Navy Vietnam Veterans and Agent Orange Exposure, National Academies of Science, Washington DC, 2011.

Member, IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 120: Benzene, International Agency for Research on Cancer, Lyon, France 2017-2018.

Member, Advisory Group to Recommend on Quantitative Risk Characterization for the IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, International Agency for Research on Cancer, Lyon, France 2013

Member, IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 102: Non-Ionizing Radiation, Part 2: Radiofrequency Electromagnetic Fields, International Agency for Research on Cancer, Lyon, France 2010-2011.

Chair, Subgroup on Epidemiology, IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 100D: Radiation, International Agency for Research on Cancer, Lyon, France 2009.

Member, Expert Panel on Trichloroethylene, National Toxicology Program, Report on Carcinogens, National Institute for Environmental Health Sciences, 2014.

Member, Expert Panel on Formaldehyde, National Toxicology Program, Report on Carcinogens, National Institute for Environmental Health Sciences, 2009.

Member, Scientific Committee on Biological Effectiveness of Photons as a Function of Energy (SC 1-20), U.S. National Council on Radiation Protection and Measurements (US NCRP), Washington DC, 2010-2016.

Member, National Advisory Panel, Agricultural Health Study, Washington, DC, 2012-present.

Member, Scientific Advisory Committee, EPICOH, 2015-2017.

Member, ISGlobal External Advisory Committee, ISGlobal, Barcelona, Spain, 2017-present.

Member, Scientific Advisory Committee, Centre for Research in Environmental Epidemiology (CREAL), Barcelona, Spain, 2012-2017.

Member, Occupational Health Surveillance Advisory Group, North Carolina Occupational Health and Safety Surveillance Program, Occupational and Environmental Epidemiology Branch, NC Division of Public Health, 2016-present.

Member, Board of Directors, Citizens' Monitoring and Technical Assessment Fund (a US Department of Energy-established fund to provide grants to non-governmental and tribal organizations working on issues related to the nuclear weapons complex), 2003-2007.

Awards

Teaching Innovations Award, School of Public Health, University of North Carolina at Chapel Hill, 2012.

Best Paper in Epidemiology in Occupational Health, Lead author of "Risk of cancer from exposure to ionizing radiation: a retrospective cohort study of workers in France, the United Kingdom, and the United States (INWORKS)" which was awarded at EPICOH, 2016.

Article of the Year, Lead author of "Assessment and indirect adjustment for confounding by smoking in cohort studies using relative hazards model" with Eric Tchetgen Tchetgen, Steve Cole and Dominique Laurier, which received the Society of Epidemiologic Research and American Journal of Epidemiology Article of the Year, 2014.

Best paper in Biometrics, Coauthor of "Detecting disease outbreaks using local spatiotemporal methods" with Yingqi Zhao, Donglin Zeng, Amy Herring, Amy Ising, Anna Waller, and Michael Kosorok, which was named the Best paper in Biometrics, 2011.

Research Participation Program, U.S. Environmental Protection Agency, Office of Research and Development. Washington, D.C. 2013-2015.

Environmental Biostatistics Training Program, National Institute for Environmental Health Sciences, Traineeship in Environmental Epidemiology, 1993 - 1997.

Public Health Service Traineeship, Department of Health and Human Services, 1992 - 1993.

Merit Assistant Award, The Graduate School of the University of North Carolina, Merit Assistantship Program and the Department of Epidemiology, 1992 - 1993.

Editorial Positions

Associate Editor, American Journal of Epidemiology. 2009-current.

Associate Editor, Occupational & Environmental Medicine. 2009-current.

Associate Editor, Environmental Health Perspectives. 2010-current.

Professional Memberships

Member, American Public Health Association, 1994-present.

Member, Society for Epidemiologic Research, 2004-present.

Member, International Society for Environmental Epidemiology, 2004-present.

Member, International Commission on Occupational Health, 2006-present.

Member, Scientific Committee on Epidemiology in Occupational Health (EPICOH), International Commission on Occupational Health, 2006-present.

Member, Committee on Capacity Building in Developing Countries, International Society for Environmental Epidemiology, 2004-2008.

Book Chapters

Richardson DB. "Occupational Epidemiology." In, Rothman K, Greenland S, Lash T, editors Modern Epidemiology, Fourth edition. Lippincot, (forthcoming).

Richardson D. "Occupational Health Risks in Nuclear Power." In, Cleveland C., editor Encyclopedia of Energy, Volume 4. Academic Press/Elsevier Science, San Diego CA (2004): 489-496.

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Peer-Reviewed Publications

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2. Lee JS, Cole SR, Richardson DB, Dittmer DP, Miller WC, Achenbach CJ, Moore RD, Kitahata M Mathews C, Mayer K, Geng E, Eron JJ. Incomplete viral suppression and mortality in HIV patients after antiretroviral therapy initiation. Aids (in press).

3. Gillies M, Richardson DB, Cardis E, Daniels RD, O'Hagan JA, Hamra GA, Haylock R, Laurier D, Leuraud K, Moissonnier M, Schubauer-Berigan MK, Thierry-Chef I, Kesminiene A. Mortality from circulatory diseases and other non-cancer outcomes among nuclear workers in France, the United Kingdom, and the United States (INWORKS). Radiation Research (in press).

4. Richardson DB, Cardis E, Daniels RD, Gillies M, O'Hagan JA, Hamra GA, Haylock R, Laurier D, Leuraud K, Moissonnier M, Schubauer-Berigan MK, Thierry-Chef I, Kesminiene A. Site specific solid cancer mortality following exposure to ionizing radiation: a cohort study of workers in France, the United Kingdom, and the United States (INWORKS). Epidemiology (2017) in press.

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6. Rinsky JL, Richardson DB, Wing S, Beard JD, Alavanja M, Beane Freeman LE, Chen H, Henneberger P, Kamel F, Sandler DP, Hoppin JA. Assessing the potential for bias from non-response to a study follow-up interview: An example from the Agricultural Health Study. American Journal of Epidemiology (2017) in press PMID: 28486574.

7. Richardson DB, Keil AP, Cole SR, MacLehose RF. Observed and expected mortality in cohort studies. American Journal of Epidemiology (2017) doi: 10.1093/aje/kww205. PMID: 28158438

8. Hamra G, Dement JD, Loomis DL, Richardson DB. Lung cancer risk associated with regulated and unregulated chrysotile asbestos fibers. Epidemiology (2017) 28:275-280. PMID: 27922528.

9. Laurier D, Richardson DB, Cardis E, Daniels RD, Gillies M, O'Hagan JA, Hamra GB, Haylock R, Leuraud K, Moissonnier M, Schubauer-Berigan M, Thierry-Chef I, Kesminiene A. The International Nuclear Workers Study (INWORKS): a collaborative epidemiological study to improve knowledge about health effects of protracted low dose exposure. Rad Prot Dosim (2016) PMID: 27885078.

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13. Yau R, Golightly Y, Richardson DB, Waller A, Runfola C, Marshall S. Potential predictors of injuries among pre-professional ballet and contemporary dancers. Journal of Dance Medicine and Science (2016 in press).

14. Mordukhovich I, Herring AH, Hatch M, Stellman SD, Teitelbaum SL, Richardson DB, Engel LS, Shantakumar S, Steck SE, Neugut AI, Rossner Jr. P, Santella RM, Beyea J, Gammon MD. Polymorphisms in DNA repair genes, traffic-related polycyclic aromatic hydrocarbon exposure and breast cancer incidence. International Journal of Cancer (2016) 139: 310-321. PMID: 26946191.

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Mannetje A, McMichael T, McLaughlin JR, Marrett M, Martuzzi M, Merchant J, Merler E, Merletti F, Miller M, Mirer F, Monson R, Nordby K-C, Olshan A, Parent M-E, Perera F, Perry MJ, Pesatori AC, Pirastu R, Porta M, Pukkala E, Rice C, Richardson D, Ritter L, Ritz B, Ronckers CM, Rushton L, Rusiecki J, Rusyn I, Samet J, Sandler DP, de Sanjose S, Schernhammer E, Seniori Costantini A, Seixas N, Shy C, Siemiatycki J, Silvermann D, Simonato L, Smith AH, Smith M, Spinelli JJ, Spitz MR, Stallones L, Stayner L, Steenland K, Stenzel M, Stewart BW, Stewart PA, Symanski E, Terracini B, Tolbert P, Vainio H, Vena J, Vermeulen R, Victora C, Ward E, Weinberg CR, Weisenburger D, Wesseling C, Weiderpass E, Zahm SH. IARC Monographs: 40 years of evaluating carcinogenic hazards to humans. Environmental Health Perspectives (2015) 123:507-514. PMID: 25712798.

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hexamethylene diisocyanate (HDI). International Council of Chemical Association, Long-Range Research Initiative Workshop. Charleston, South Carolina, 2009.

Richardson DB. "Lung cancer in chrysotile asbestos workers: Analyses based on the two-stage clonal expansion model." 21th Conference of the International Society for Environmental Epidemiology (ISEE), Dublin, Ireland, 2009.

Richardson DB, Sugiyama H, Nishi N, Sakata R, Shimizu Y, Grant EJ, Soda M, Hsu W, Suyama A, Kodama K, Kasagi F. "Ionizing radiation and leukemia mortality among Japanese atomic bomb survivors, 1950-2000." Late Health Effects of Ionizing Radiation: Bridging the Experimental and Epidemiologic Divide, Washington DC, 2009.

Symons JM, Cole S, Richardson DB, Checkoway H, Eisen E. "Past, Present, and Future Approaches to the Healthy Worker Effect." Symposium organized for the Society for Epidemiologic Research, Anaheim, California, 2009.

Kim HM, Richardson DB, Loomis D, van Tongeren M, Burstyn I. Bias in the Estimation of Exposure Effects with Individual-or Group-Based Exposure Assessment. Symposium on Dependent Data Structures, Ottawa, ON, 2008.

Richardson DB. "Temporal Variation in the Association Between Benzene and Leukemia Mortality." 20th Conference of the International Society for Environmental Epidemiology (ISEE), Pasadena, California, 2008.

MacLehose RF, Dunson D, Richardson DB. "Bayesian hierarchical estimation of dose response curves." American Public Health Association, 136th Annual Meeting, San Diego CA, 2008.

MacLehose RF, Dunson D, Richardson DB. "Flexible non-parametric estimation of dose response curves." Society for Epidemiologic Research, 41st Annual Meeting, Chicago, IL 2008.

Hakenworth AM, Waller A, Richardson DB. "Linking North Carolina's Emergency Department and Ambulance Records for Disease Surveillance." American Public Health Association, 135th Annual Meeting, Washington DC, 2007.

Hamra G, Richardson DB, Nylander-French L. "Dose Reconstruction for an Occupational Cohort at the Savannah River Nuclear Facility: Evaluation of a hybrid method." International Society of Exposure Analysis, 17th Annual Meeting, Durham, NC, 2007.

Angelon K, Richardson DB, Wing S. "Inequalities in the nuclear age." American Public Health Association, 135th Annual Meeting, Washington DC, 2007.

Kim H, Burstyn I, Loomis D, Richardson D. "Bias Analysis In Regression Models With Individual- and Group-Based Exposure Assessment." 19th International Conference on Epidemiology in Occupational Health (EPICOH), Banff, Canada, 2007.

Rodríguez-Acosta RL, Schoenfisch AL, Richardson DB, Lipscomb HJ, Dement JM. "Injury and Illness Experience among Nurse Aides Employed in Acute Care at a Major Healthcare System."

19th International Conference on Epidemiology in Occupational Health (EPICOH), Banff, Canada, 2007.

Richardson DB, Wing S. "Mortality among workers at the Savannah River Site." 19th Conference of the International Society for Environmental Epidemiology (ISEE), Mexico City, Mexico, 2007.

Loomis D, Wolf S, Dement J, Richardson D. "Lung Cancer Mortality in North Carolina Asbestos Textile Workers, 1950-2003." Scientific Committee on Epidemiology in Occupational Health (EPICOH), Banff, Canada, 2007.

Kim H, Burstyn I, Loomis D, Richardson D. "Bias Analysis In Regression Models With Individual- and Group-Based Exposure Assessment." Canadian Society for Epidemiology and Biostatistics, Calgary, Canada, 2007.

Richardson DB, Wing S. "Investigating Temporal Patterns of Exposure Effects Using Multistage Models." 18th Conference of the International Society for Environmental Epidemiology (ISEE), Paris, France, 2006.

Loomis D, Richardson D, Stainback K, Schulman M, Bailer J, Wheeler M, , Marshall S. "State Political Economy and Occupational Fatality Rates in the United States." International Commission on Occupational Health (ICOH), Milan, Italy, 2006.

Richardson DB, Ashmore J. "Critical Windows: How Time Patterns of Exposure Can Influence Disease Risk." 17th Conference of the International Society for Environmental Epidemiology, Johannesburg, South Africa, 2005.

Clapp R, Richardson DB. "Capacity Building for Environmental and Occupational Health in Southern Africa." 17th Conference of the International Society for Environmental Epidemiology, Johannesburg, South Africa, 2005.

Chen JC, Richardson DB. "Informative vs. Non-Informative Cases: Implications for Design and Analyses of Case-Crossover Studies." Joint Meeting of the Society for Epidemiologic Research and the Canadian Society for Epidemiology and Biostatistics, Toronto, Canada, 2005.

van Wijngaarden E, Richardson D. "A graphical method to evaluate exposure-response relationships for sparse data." 16th Conference of the International Society for Environmental Epidemiology, New York, NY, 2004.

Loomis D, Richardson D, Elliott L. "Ungrouped Poisson regression analysis of epidemiologic studies with quantitative exposure data." Exposure Assessment in a Changing Environment, Utrecht, The Netherlands, 2004.

Mirabelli M, Richardson D. "Heat-related fatalities in North Carolina." Third National Occupational Injury Research Symposium (NOIRS), Pittsburgh, PA, 2003.

Bena J, Richardson D, Bailer AJ, Loomis D, Marshall S. "Comparison of fatality rate denominator choices: Population based methods." Third National Occupational Injury Research Symposium (NOIRS), Pittsburgh, PA, 2003.

Richardson D, Watson J, Wing S, Wolf S. "Evaluating Exposures to Ionizing Radiation among Hanford Workers." American Public Health Association, 126th Annual Meeting, Washington DC, 1998.

Wing S, Richardson D. "Radiation and Mortality among US Department of Energy Workers. STAR Symposium on Low Level Radiation and Implications for Medicine and the Nuclear Industry, New York Academy of Medicine, New York, NY, 1998.

Richardson D, Wing S. "Radiation and Cause-Specific Mortality among Workers at Oak Ridge National Laboratory." International Congress on the Effects of Low Dose Ionizing Radiation, Muenster, Germany, 1998.

Wolf S, Richardson D, Elliot L. "Information for Historical Studies of Hanford Workers: Current Challenges." First Annual Conference on the Health of the Hanford Site: Current Challenges, Richland, WA, 1997.

Richardson D, Wing S., Wolf S. "Occupational Exposure to Ionizing Radiation and Cancer Mortality among Hanford Workers: Continuing Research." First Annual Conference on the Health of the Hanford Site: Current Challenges, Richland, WA, 1997.

Richardson D, Wing S. "Evidence of Increasing Sensitivity to Radiation at Older Ages among Workers at Oak Ridge National Laboratory." Presented at the International Workshop on Radiation Exposures by Nuclear Facilities, Evidence of the Impact on Health, Portsmouth, England, 1996.

Richardson D, Wing S, Stewart A. "Epidemiologic Studies of the Effects of Exposure to Ionizing Radiation." In, Ermittlung des Standes wissenschaftlicher Erkenntnisse unde der VerlaBlichkeit der Strahlenschutz-Bestimmungen. Ministeriums fur Finanzen und Energie des Landes Schleswig-Holstein, 1997.

Richardson D, Loomis D. "Fatal Agricultural Injuries in North Carolina." Presented at the 11th International Symposium on Epidemiology in Occupational Health, Noordwijkerhout, The Netherlands, 1995.

Richardson D. "History of Byssinosis in the United States." Presented at the Sixth Latin American and Eighth World Congress on Social Medicine, Guadalajara, Mexico, 1994.

Invited Presentations

Richardson DB. "Solid cancer mortality among workers in the International Nuclear Workers Study (INWORKS)" Radiation Epidemiology Branch, Division of Cancer Epidemiology & Genetics, National Cancer Institute, Shady Grove, MD, 2016.

Richardson DB. “Impact of currently uncounted asbestos fibers on lung cancer risk” Occupational and Environmental Epidemiology Branch, Division of Cancer Epidemiology & Genetics, National Cancer Institute, Shady Grove, MD, 2016.

Richardson DB. “Digital health: A catalyst for behavioral change.” German Center for Research and Innovation; European-American Chamber of Commerce. Global Studies Program, Chapel Hill, NC 2016.

Richardson DB. “The connection between policy options and causal inference methods.” Institut National de la Sante et de la Recherche Medicale (INSERM), Hopital Paul Brousse, Universite Paris-Sud, Paris, France, 2016.

Richardson DB, Laurier D, Cardis E, Daniels RD, Gillies M, O’Hagan JA, Hamra GB, Haylock R, Leuraud K, Moissonnier M, Schubauer-Berigan M, Thierry-Chef I and Kesminiene A. International Nuclear Workers Study (INWORKS). Conference on Radiation and Health. Hawaii, October 2016.

Richardson DB. “Earthquake, Tsunami, Nuclear Crisis: Fukushima and Lessons from Hiroshima.” Department of Epidemiology, Biostatistics, and Occupational Health, McGill University, Montreal, Canada, 2014.

Richardson DB. Keynote Address, “Statistical models to improve risk assessments.” EPICOH, 23rd Conference on Epidemiology in Occupational Health, Utrecht, The Netherlands, 2013.

Richardson DB. Seminar, “Improving the impact of occupational epidemiology.” National Center for Environmental Assessment, US Environmental Protection Agency, Washington, DC, 2013.

Richardson DB. Symposium, “Asbestos and Cancer: Science and Policy Implications.” ISEE, Basel, Switzerland, 2013.

Richardson DB. “Occupational and Environmental Radiation Exposures.” Boston University, Boston, MA, 2013.

Richardson DB. “The Fukushima Nuclear Crisis: Lessons from Hiroshima.” Oberlin College, Oberlin, Ohio, 2012.

Richardson DB. “Past and Future approaches to the healthy worker effect.” Drexel University, Philadelphia, PA, 2012.

Richardson DB. Earthquake, Tsunami, Nuclear Crisis: Fukushima and Lessons from Hiroshima. Medical University of South Carolina, Charleston, SC, 2011.

Richardson DB. “Epidemiological models for heat waves: Issues and Illustration.” Climate and Health in North Carolina: Emerging Risks and Opportunities. CDC/ North Carolina Division of Public Health/Southeast Regional Climate Center, Chapel Hill, NC, 2011.

Richardson DB. “Fukushima and the future of safe energy.” Physicians for Social Responsibility, Washington, DC, 2011.

Richardson DB. “Leveraging linkages: Emergency department data for environmental and occupational health surveillance.” North Carolina Division of Public Health, Raleigh, NC, 2011.

Richardson DB. “Ionizing radiation and lymphoma mortality among Japanese atomic bomb survivors and US DOE workers.” Drexel University, Philadelphia, PA, 2010.

Richardson DB, “Long-term follow-up of the Japanese atomic bomb survivors: Insights for the World Trade Center Medical Monitoring and Treatment Program.” World Trade Center Responder Health Consortium, World Trade Center Medical Monitoring and Treatment Program, Mount Sinai School of Medicine, New York, New York, 2010.

Richardson DB. “Ionizing radiation and lymphoma mortality among Japanese atomic bomb survivors and US DOE workers.” International Agency for Research on Cancer, Lyon, France, 2010.

Richardson DB. “Long-term effects of occupational radiation exposures.” Center for Research in Environmental Epidemiology, Barcelona, Spain, 2010.

Richardson DB. “Ionizing radiation and leukemia mortality among Japanese atomic bomb survivors, 1950-2000.” Radiation Effects Research Foundation, Hiroshima, Japan. 2008.

Richardson DB. “Ionizing radiation and mortality due to lymphoma.” 29th Radiation Effects Research Foundation Colloquium, Radiation Effects Research Foundation, Hiroshima, Japan. 2008.

Richardson DB. “Mortality among Savannah River Site Workers.” Radiation Epidemiology Branch Seminar, National Cancer Institute, Bethesda, MD. 2007.

Richardson DB. “Susceptibility and Occupational Radiation Risks.” North Carolina Health Physics Society Annual Meeting, Asheville, North Carolina. 2006.

Richardson DB. “Critical Time Windows of Exposure” Departmental Seminar Series, Department of Environmental Health, University of Cincinnati, Ohio. 2006.

Richardson DB. “Critical Windows: How Time Patterns of Exposure Can Influence Disease Risk.” NORA Interdisciplinary Seminar, Chapel Hill, North Carolina. 2006.

Richardson DB. “Critical Windows: How Time Patterns of Exposure Can Influence Disease Risk.” Alfried Krupp Kolleg, University of Greifswald, Germany. 2006.

Richardson DB. “Radiation and Health: Epidemiological Studies of the Nuclear Industry.” Nuclear Power and Global Warming. Warrenton, VA, 2005.

Richardson D. “How many at risk? Estimating rate denominators for occupational mortality rates at the state level".” Bureau of Labor Statistics/National Institute for Occupational Safety and

Health Workshop "Data Resources for Occupational Health Surveillance and Research," Washington, DC, 2004.

Richardson D. "Controversies around radiation risk estimates." Institute for Energy and Environmental Research Technical Training Workshop on Radiation and Health, Takoma Park, MD, 2002.

Richardson D. "Increased effects of exposures after age 45." Agency for Toxic Substances and Disease Registry: Hanford Health Effects Subcommittee and Inter-tribal Council on Hanford Health Projects, Kennewick, WA, 2001.

Richardson D. "Testing radiation exposures: Who sets the standards?" Medical Association for the Prevention of War, National Conference, Canberra, Australia, 2000.

Richardson D, Wing S. "Time-related factors in radiation-cancer associations among workers at Oak Ridge National Laboratory." Worker-Management and Public Meeting, Oak Ridge, TN, 1998.

Richardson D, Wing S. "External Ionizing Radiation and Cancer Mortality among Workers at Oak Ridge National Laboratory" NIOSH/DOE Surveillance Programs: Partners and Stakeholders Meeting, Cincinnati, OH, 1998.

Richardson D, Wing S, Wolf S. "Ionizing Radiation and Mortality Among Hanford Workers." NIOSH/DOE Surveillance Programs: Partners and Stakeholders Meeting, Cincinnati, OH, 1997.

Teaching Experience (Lead Instructor/Co-instructor)

Epidemiologic Data Analysis (EPID 716). Department of Epidemiology, UNC-CH. Spring 2017. Lead instructor. 47 students.

Advanced Environmental Epidemiology (EPID 799B). Department of Epidemiology, UNC-CH. Fall 2016. Lead instructor. 5 students.

Advanced Environmental Epidemiology (EPID 799B). Department of Epidemiology, UNC-CH. Fall 2015. Lead instructor. 9 students.

Epidemiologic Analysis of Binary Data (EPID 718). Department of Epidemiology, UNC-CH. Fall 2014. Co-instructor. 42 students.

Epidemiologic Analysis of Binary Data (EPID 718). Department of Epidemiology, UNC-CH. Fall 2013. Lead instructor. 38 students.

Advanced Methods in Epidemiology. Bayesian Epidemiology: Principles and Practice (EPID 730). Department of Epidemiology, UNC-CH. Spring 2013. Co-instructor. 15 students.

Epidemiologic Analysis of Binary Data (EPID 718). Department of Epidemiology, UNC-CH. Fall 2012. Lead instructor. 52 students.

Advanced Methods in Epidemiology. Bayesian Epidemiology: Principles and Practice (EPID 730). Department of Epidemiology, UNC-CH. Spring 2012. Co-instructor. 15 students.

Epidemiologic Analysis of Binary Data (EPID 718). Department of Epidemiology, UNC-CH. Fall 2011. Lead instructor. 50 students.

Advanced Methods in Epidemiology. Bayesian Epidemiology: Principles and Practice (EPID 730). Department of Epidemiology, UNC-CH. Spring 2011. Co-instructor. 15 students.

Epidemiologic Analysis of Binary Data (EPID 718). Department of Epidemiology, UNC-CH. Fall 2010. Lead instructor. 53 students.

Epidemiologic Analysis of Binary Data (EPID 718). Department of Epidemiology, UNC-CH. Fall 2009. Lead instructor. 37 students.

Epidemiologic Analysis of Binary Data (EPID 718). Department of Epidemiology, UNC-CH. Fall 2008. Lead instructor. 46 student.

Epidemiologic Analysis of Binary Data (EPID 718). Department of Epidemiology, UNC-CH. Fall 2007. Lead instructor. 52 students.

Analysis of Case-Control Data (Summer Course). International Summer School of Epidemiology in Ulm, Germany. July 2006.

Epidemiologic Analysis of Binary Data (EPID 718). Department of Epidemiology, UNC-CH. Fall 2006. Co-instructor. 46 students.

Epidemiologic Analysis of Binary Data (EPID 269). Department of Epidemiology, UNC-CH. Fall 2005. Co-instructor. 35 students.

Teaching Experience (Guest Lectures)

Cancer Epidemiology (EPID 770). Department of Epidemiology, UNC-CH. Spring 2010, 2011, 2012, 2013, 2014. Guest lecture "Radiation and Cancer."

Epidemiologic Analysis of Survival Data (EPID 730). Department of Epidemiology, UNC-CH. Spring 2012. Guest lecture "Linear Rate and Excess Relative Rate Models."

Occupational and Environmental Epidemiology (EPID 750). Department of Epidemiology, UNC-CH. Spring 2012, 2013, 2014. Guest lecture "Occupational and Environmental Radiation Exposures."

Environmental Exposure Analysis (ENVIRON 780). Nicholas School of the Environment, Duke University, Durham, North Carolina, 2014. Guest lecture "Occupational and Environmental Radiation Exposures."

Graduate Students Supervised

Doctoral Students as Committee Chair

Rosa Rodriquez-Acosta "Occupational Injury and Illness Experience of Nurse Aides Employed at Duke University Health System" (Graduated: August, 2007). Prior status: Epidemiologist, Centers for Disease Control and Prevention, San Juan, Puerto Rico. Current status: Epidemiologist, NIOSH Center for Motor Vehicle Safety, National Institute for Occupational Safety and Health, Division of Safety Research, Morgantown, WV.

Phuong-Thao Vo "DDE and PCBs: Their intra-individual changes, correlations, predictors, and role in timing of menopause." (Graduated: November, 2007).

Ghassan Hamra "Bayesian Methods for the Evaluation of Tritium: Relative Biological Effectiveness and Cancer Risk" (Graduated: February, 2011). Awards: Sidney Kark Award for Distinguished Teaching Assistant (2011). Current status: Assistant Professor, Drexel University, Philadelphia, PA.

Jerrod Nelms. "Unemployment change and homicide: An exploration of the national violent death reporting system." (Graduated: May, 2013). Current status: Occupational health consultant, Gainesville, Fl.

Kim Angelon Gaetz. "Free to Breath, Free to Teach: Indoor air quality in schools and respiratory health of teachers" (Graduated: May, 2014). Honors and Awards: EPA Star Fellowship Awardee. Current status: Public Health Epidemiologist. Environmental Health Section, Division of Public Health, N.C. Department of Health and Human Services.

Alexander Keil "Methods for the Healthy Worker Survivor Effect" (Graduated: 2014). Honors and Awards: EPICOH Young Investigator Award, Best Conference Abstract (2014). Current status: Research Assistant Professor, Department of Epidemiology, University of North Carolina at Chapel Hill.

Steven Lippmann "Effects of High Temperatures on Cause-Specific Emergency Department Visits in North Carolina." (Graduated: July, 2015). Researcher, Duke University School of Medicine.

Jessica E. Laine "Investigation of exposure to iAs during pregnancy, nutritional biomarkers, iAs metabolism and adverse birth outcomes." (Graduated: May, 2017). Post-doctoral researcher, Imperial College London, UK.

Kaitlin Kelly-Reif "Radon and mortality among Czech uranium miners" (expected graduation: 2018)

Nathan Debono "Plastics and breast cancer among auto workers" (expected graduation 2018)

Cynthia Lin "Water quality and emergency department visits in Boston" (expected graduation, 2018)

Nat MacNell "CAFO emissions and impacts on quality of life and sleep"

Elizabeth Kamai "Environmental lead exposure and childhood blood lead in Forsyth county"

Doctoral Students as Committee Member

Kelly K. Gurka "Workplace homicide in North Carolina, 1994-2003: A case series and an examination of recommended prevention strategies." (Graduated: October, 2007). Current status: Assistant Professor, Department of Community Medicine, West Virginia University.

Rachael Avery Horton "Psychophysiologic effects of odor from industrial hog operations on the health of neighboring residents." (Graduated: October, 2007).

Lynette S. Phillips "Breast ductal carcinoma in situ (DCIS): Reproductive and hormonal risk factors and reliability of histologic diagnoses" (Graduated: June, 2007). Current status: Assistant Professor, Department of Epidemiology, Kent State University.

Linda Gaines "Diisocyanate exposures among auto body painters" (ESE: Graduated, June 2010). Current status: Environmental Health Scientist, U.S. Environmental Protection Agency.

Sheila Flack "Diisocyanate exposures among auto body painters" (ESE: Graduated, June 2010. Current status: Post-Doctoral Fellow, University of North Carolina).

Melinda Eaton "Non-battle injury and non-battle psychiatric illness in deployed Air Force members" (Graduated: May, 2010). Current status: Epidemiologist, U.S. Air Force.

Tania A. Desrosiers "Maternal occupational exposure to organic solvents during early pregnancy and selected congenital anomalies." (Graduated: April, 2011). Current status: Epidemiologist, NC Division of Public Health.

Scott Masten "National Study of Teen Driver Licensing Systems and Graduated Driver Licensing Program Core Components." (Graduated: May, 2011). Current status: Research manager, California Department of Motor Vehicles.

Kai Ding "Adjustment for high dimensional covariates in time-to-event analysis" (Department of Biostatistics; Graduated: May, 2011. Current status: Assistant Professor, Department of Biostatistics and Epidemiology, University of Oklahoma Health Sciences Center.)

Virginia Guidry "A Longitudinal Study of Acute Respiratory Health in Children Attending Schools Near Swine Concentrated Animal Feeding Operations." (Graduated: August, 2011). Current status: Post-Doctoral Fellow, University of North Carolina.

Camille Metz-Flamant “Effets sanitaires des faibles doses a faibles debits de dose: modelisation de la relation dose-response dans une cohorte de travailleurs due nucléaire” (École Doctoral: Santé Publique Paris 11-Paris 5, Université Paris-Sud 11). (Graduated: September, 2011).

Ashley Naimi “Marginal structural models for the healthy worker survivor effect” (Graduated: 2012). Current status: Assistant Professor, University of Pittsburgh School of Public Health.

Leah Schinasi “Environmental, occupational, and medical exposures associated with methicillin resistant Staphylococcus aureus nasal carriage in patients admitted to an eastern North Carolina hospital” (Graduated: October, 2012). Current status: Post-Doctoral position, Drexel University, Philadelphia, PA.

Yingqi Zhao “Semiparametric and nonparametric methods in data mining and statistical learning with applications in public health surveillance and personalized medicine” (Department of Biostatistics; Graduated: May, 2012). Current status: Assistant Professor, Department of Biostatistics, University of Wisconsin-Madison.

Ashley Schoenfisch “The injury experience of union drywall carpenters in Washington state: 1989-2008” (Graduated: 2012). Current status: Research associate, Duke University.

Irina Mordukhovich “Polycyclic aromatic hydrocarbons and breast cancer in Long Island Breast Cancer Study Project” (Graduated: 2013). Current status: Post doctoral fellow, Harvard School of Public Health.

Jeanette Stingone “Maternal exposure to criteria air pollutants during early pregnancy and congenital heart defects in offspring” (Graduated: March, 2013). Current status: Post-doctoral research associate, Mount Sinai School of Medicine.

Genee Smith “Air pollution and pulmonary tuberculosis disease in California” (Graduated: March, 2013). Current status: Research associate, U.S. Environmental Protection Agency.

Jess Edwards “Methods to account for outcome misclassification in epidemiology” (Graduated: March, 2013). Current status: Post-doctoral research fellow, University of North Carolina.

Anne Starling “Perfluorinated compounds during pregnancy and preeclampsia.” (Graduated: May, 2013). Current status: Post-Doctoral Fellow, University of Colorado-Denver, School of Medicine.

Steven Hoberman “Response adaptive designs for highly successful treatments, randomness, and relationship detection in clinical trials” (Under direction of Dr. Michael Kosorok and Anastasia Ivanova, Department of Biostatistics; Graduated: July, 2014). Current status: Statistician, US FDA.

Jessie Buckley “Prenatal phthalate exposures and childhood adiposity: examining the obesogen hypothesis.” (Graduated: November, 2014). Current status: Post-doctoral student, University of North Carolina; Assistant Professor, Johns Hopkins School of Public Health.

Evan Busch “Markers of epithelial-mesenchymal transition in colorectal cancer mortality“(Graduated: 2015). Current status: Post-doctoral research associate, Harvard University.

Jill Lebov “Pesticide exposure and renal disease” (Graduated: 2014). Current status: Post-doctoral researcher, National Institute of Environmental Health Sciences.

John Beard “Military Service, Deployments, and Exposures in Relation to Amyotrophic Lateral Sclerosis Etiology and Survival” (Graduated: March, 2015). Current status: US CDC, Epidemiological Intelligence Service.

Jessica Rinsky “The role of occupational exposure to animal production in chronic obstructive pulmonary disease among farmers in Iowa and North Carolina” (Graduated: March, 2015). Current status: US CDC, Epidemiological Intelligence Service.

Shannon Grabich “Associations Between Hurricane Exposure and Pregnancy Outcomes: A Demonstration of Ecological and Individual-level Methods” (Graduated: April, 2015).

Rebecca Yau “Injuries and eating disorders symptoms among elite ballet and modern dancers” (Graduated: May, 2016).

Yunro Chung “Statistical Contributions to Order Restricted Inference for Survival Data Analysis” (Under direction of Dr. Jason Fine and Anastasia Ivanova, Department of Biostatistics; Graduated: January, 2016).

Laurel Harduar Morano “Ambient outdoor heat exposure and heat-related illness in Florida” (graduated: April, 2016). Current status: US CDC, Epidemiological Intelligence Service

Sarah Rhodes “The evolution and dissemination of antibiotic-resistant, livestock-associated Staphylococcus aureus in regions of dense industrial hog production in North Carolina, U.S.” (Department of Environmental Science and Engineering; graduated, April 2017).

Jennifer Lee “Mortality and cancer risk in HIV patients with incomplete viral suppression after antiretroviral therapy initiation” (graduated, May, 2017).

Kirstin Huiber “Case-control study of organochlorine compounds and melanoma” (expected graduation: 2017).

Karen Roos “Overuse Injuries in High School and Collegiate Populations: Occurrence and Methodological Issues in Surveillance Data” (expected graduation: 2017).

Jean Strelitz “Exposure to PM2.5, PAH, and BTEX during oil spill cleanup and incident coronary heart disease in the GuLF Study” (expected graduation: 2017)

Laura McGuinn “Early life exposure to air pollution and autism spectrum disorder” (expected graduation: 2017).

Katie Harmon “Surveillance for sports-related injuries in North Carolina” (expected graduation: 2017).

Emily Werder “Styrene exposure and neurologic effects in the GuLF STUDY” (expected graduation: 2017).

Sabine Hoffmann “Effects of measurement error on models for dose-response associations in a cohort of uranium miners” (École Doctoral: Santé Publique Paris 11-Paris 5, Université Paris-Sud 11). (expected graduation: September, 2017).

Jacqueline Rudolph “The US Lifespan project: Effects of air pollution on mortality” (expected graduation: 2018)

Brett Doherty “Flame retardants and cognitive effects in the PIN study” (expected graduation: 2019).

Paige Bommarito “Cadmium exposure and microRNA signaling in the placenta” Department of Environmental Science and Engineering; expected graduation, 2018).

Master's Students:

Ghassan Hamra “Dose Reconstruction for an Occupational Cohort at the Savannah River Nuclear Facility: Evaluation of a hybrid method” (Environmental Sciences & Engineering, Graduated: May, 2007).

Leah Schinasi “Data quality and completeness in a community based and participatory epidemiologic study” (Graduated: November, 2007).

Kim Angelon “Inequalities in the Nuclear Age” (Graduated: January, 2008).

Nat McHardy “The environmental racism of Louisiana’s petrochemical industry” (Graduated: January, 2014). Current status: Doctoral student, UNC.

Kaitlin Kelly-Reif “A reanalysis of cancer incidence surrounding the Apollo nuclear facility: 1990-2010” (Graduated: May, 2015). Current status: Doctoral student, UNC.

Yuzhi Xi “Air pollution in Pittsburgh after plant closure and birth weight: A natural experiment” (expected graduation: 2017).

Grants and Contracts

Ongoing and Completed

Alpha Foundation for the Improvement of Mine Safety and Health, Inc., "Innovations in applied decision theory for mine surveillance and health and safety efforts" $150,000 (2017-2018).

UNC Center for Environmental Health and Susceptibility, CEHS Standard Pilot Projects Program,"Use of isotopic ratios to characterize newborn blood lead measures and environmental lead contamination from operating industrial sites in Forsyth County, North Carolina" $30,000 (2017-2018).

Samuel Freeman Charitable Trust,"Review of intensive livestock operations in North Carolina" $40,000 (2017-2018).

National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention (R03OH010946). Role: Principal Investigator. Combined analysis of lung cancer among uranium miners, 9/2015 – 8/2017.

National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention (R03-OH-10706). Role: Principal Investigator. Occupational exposure to asbestos: Effects of unregulated fibers, 10/2014 – 10/2016.

US EPA, Office of Research and Development. Role: Fellow. Research Participation Program, 9/2013-9/2015.

National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention (T42-OH008673-02). Role: Principal Investigator. North Carolina Occupational Safety and Health Education and Research Center, 12/15/2006-06/30/2015.

National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention (R03-OH-010056). Role: Principal Investigator. Combined analysis of mortality among nuclear workers, 2/15/2011 – 02/16/2013.

National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention (R03-OH-009800). Role: Principal Investigator. Evaluation of tritium: relative biological effectiveness and cancer mortality, 8/15/2010 – 08/14/2012 (Total award: $143,245).

National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention (R01-OH-009407). Role: Principal Investigator. Long-term effects of occupational radiation exposures, 09/01/2009 – 08/31/2012 (Total Award: $930,100).

National Cancer Institute, National Institutes of Health (R01-CA117841). Role: Principal Investigator. Cohort analysis methods for occupational cancer studies, 7/1/2007-12/31/2012 (Total Award: $520,143).

National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention (R01-OH-007803-05A1). Role: Co-Investigator. Chrysotile and Lung Cancer: Time-Related Effects and Pooled Analysis, 08/01/2008 – 01/31/2011 (Total Award: $710,641).

University of North Carolina, School of Public Health, Gillings Innovation Laboratory. Role: Principal Investigator. Innovative Methods for Disease Surveillance, 08/15/2008 – 08/14/2010 (Total Award: $564,610).

National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention, Occupational Radiation and Energy-Related Health Research Grants Program (RO1-OH007871-01). Role: Principal Investigator. Susceptibility and Occupational Radiation Risks, 09/30/2002 – 9/29/2006 (Total Award: $832,026).

National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention (K01-OH008635-01). Role: Principal Investigator. Mechanistic models in occupational cancer epidemiology, 07/01/2006 – 06/30/2010 (Total Award: $291,600).

National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention (R01-OH007803-03). Role: Principal Investigator. Innovative metrics for asbestos exposure, 07/01/2006 – 06/30/2007 (Total Award: $1,128,081). Note Principal Investigator Dana Loomis left the University in Year 5 of this project and Dr. Richardson assumed the role of Principal Investigator.

National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention (RO3-OH0721-01). Role: Principal Investigator. Time-Factors in Exposure Effects among Uranium Workers, 05/01/2002 – 04/30/2004. (Total Award: $145,500).

National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention (RO1-OH03910-01A1). Role: Co-Investigator. Occupational Fatality Trends: A Contextual Analysis, 09/30/2000 – 09/29/2004 (Total Award: $179,622).

North Carolina Department of Health and Human Services, Division of Public Health, Injury and Violence Prevention Branch. (Contract #01596-07). Role: Project Leader. Surveillance Activity of the Public Health Preparedness and Response Program, 09/01/2006 – 08/31/2007 (Total Award: $65,902).

Alfried Krupp Kolleg Greifswald Foundation and Alfried Krupp von Bohlen und Halbach Foundation. Role: Principal Investigator. 05/01/2006-07/31/2006 (Total Award: $25,587).

University Research Council, University of North Carolina at Chapel Hill, Research Grant Program. Role: Principal Investigator. Newborn Fetal Hemoglobin Levels and Cancers in Childhood, 12/1/2004-11/30/2006 (Total Award: $4000).

National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention, Pilot Projects Program. Role: Co-Investigator. Modeling of Trends in Fatal Occupational Injury in Older Workers, 07/06/2004-03/31/2006 (Total Award: $21,900).

North Carolina Department of Health and Human Services, Division of Public Health, Injury and Violence Prevention Branch. Role: Project Epidemiologist. Terrorism Surveillance Activity of the Public Health Preparedness and Response Program, 11/01/2005 – 8/31/2006 (Total Award: $22,677).

North Carolina Department of Health and Human Services, Division of Public Health, Injury and Violence Prevention Branch. Role: Project Epidemiologist. Terrorism Surveillance Activity of the Public Health Preparedness and Response Program, 8/15/2004 – 8/14/2005 (Total Award: $92,950).

University Research Council, University of North Carolina at Chapel Hill, Research Grant Program. Role: Principal Investigator. Fetal Hemoglobin Level at Birth as a Risk Factor for SIDS, 12/01/2001-11/30/2003 (Total Award $4000).

Additional Service

Reviewer, Grant proposal, Medical Research Council, United Kingdom, 2017.

Reviewer, Pilot project program. Southern California NIOSH Education and Research Center, Los Angeles, CA 2017.

Reviewer, Infectious Disease, Reproductive Health, and Asthma/Pulmonary Conditions (IRAP) Study Section. Center for Scientific Review, National Institutes of Health, Washington DC, October 13-14, 2011.

Expert, National Institute for Occupational Safety and Health. Review of Monoclonal B-cell Lymphocytosis and Chronic Lymphocytic Leukemia: Etiologic factors, Precursors, and Disease. 2007.

Subject Matter Expert, National Institute for Occupational Safety and Health, Office of Compensation Analysis and Support. Smoking and Radiation Interactions: Reconsideration of Models under EEOICPA. 2005.

Advisory Board, North Carolina Department of Health and Human Services, Division of Public Health, Committee on Occupational Injury Surveillance. 2004-2006.

Subject Matter Expert, National Institute for Occupational Safety and Health, Office of Compensation Analysis and Support. Chronic Lymphocytic Leukemia: Reconsideration of Exclusion and Eligibility for Compensation under EEOICPA. 2004.

Subject Matter Expert, National Institute for Occupational Safety and Health, Office of Compensation Analysis and Support. Review of the NIOSH Interactive RadioEpidemiological Program. 2002.

Reviewer, Graduate Training Internship Program, Association of Schools of Public Health (ASPH)/Centers for Disease Control and Prevention (CDC). 2009.

Reviewer, Research Grants Program. Science Centers Program, U.S. Civilian Research and Development Foundation, U.S. Department of State. 2005.

Reviewer, Environmental Health Sciences Grants Review Committee. National Institute of Environmental Health Sciences and National Institute for Occupational Safety and Health. 2003.

Departmental Service

Core Faculty, Injury Prevention Research Center. University of North Carolina at Chapel Hill (2008- present).

Member, Exposure and Biomarkers Research Core, Center for Environmental Health and Susceptibility. University of North Carolina at Chapel Hill (2006- present).

Member, Cancer Epidemiology Program, Lineberger Comprehensive Cancer Center. University of North Carolina at Chapel Hill (2009- present).

Member, Injury Epidemiology Assistant Professor Search Committee, Department of Epidemiology (2015-2016).

Member, Staff Excellence Award Committee, Department of Epidemiology (2013).

Member, Chair's Council, Department of Epidemiology (2008-2010).

Member, Post-tenure review committee, Department of Epidemiology (2010-present).

Co-ordinator, Epidemiologic Methods Qualifying Exam, Department of Epidemiology (2008).

Epidemiologic Methods Qualifying Exam, Department of Epidemiology (2007 - 2013).

Occupational & Environmental Substantive Qualifying Exam (2005-2010)

Graduate Studies Committee, Department of Epidemiology (2005-present)

Curriculum Subcommittee of the Graduate Studies Committee (2008-present)

Research Space Committee, Department of Epidemiology (2005).

Faculty Mentoring: Shabbar Ranapurwala and Alexander Keil, Department of Epidemiology (2017-present); Karin Yeatts and Melissa Troester, Department of Epidemiology (2009-2011)

January 2017

CURRICULUM VITAE

Mary Jo Richardson
Regents' Professor, Departments of Oceanography and Geology/Geophysics
Texas A&M University, College Station TX 77843
[redacted], mrichardson@ocean.tamu.edu

EDUCATION:

A.B.	Smith College, June 1975 (Geology/Mathematics) Magna Cum Laude
Ph.D.	Massachusetts Institute of Technology/Woods Hole Oceanographic Institution - Joint Program in Oceanography, May 1980.

EXPERIENCE:

2006-present	Texas A & M University, Oceanography and Geology/Geophysics Regents' Professor
2011	Santa Chiara Study Abroad Program, Castiglion Fiorentino, Italy Geoscience program created and delivered
2009	Hellenic Centre for Marine Research, Athens, Greece Faculty Development Leave - Invited
1994-2006	Texas A & M University, Oceanography and Geology/ Geophysics Professor
2002–2004	Texas A&M University, College of Geosciences Interim Dean
1993-2002	Texas A & M University, College of Geosciences Associate Dean for Academic Affairs
1996	NOAA/ Pacific Marine Environmental Lab Faculty Development Leave - Invited
1990-1994	Texas A & M University, Oceanography and Geology Associate Professor
1986-1990	Texas A & M University, Geology Visiting Assistant Professor
1985-1986	Texas A & M University, Oceanography Research Associate
1981-1985	City University of New York (Lehman), Geol. and Geog. Assistant Professor
1981	State University of New York (Purchase), Natural Science Physical Geology Professor, Summer Session
1980-1981	Lamont-Doherty Geological Observatory, Palisades, New York Research Scientist
1980	Woods Hole Oceanographic Institution, Woods Hole, Massachusetts Post-Doctoral Investigator

PROFESSIONAL AFFILIATIONS:

American Geophysical Union
Association for Women Geoscientists
Geological Society of America
National Association of Geoscience Teachers
The Oceanography Society

PROFESSIONAL INTERESTS:

Understanding dynamics and biogeochemistry of particle formation, sinking, resuspension, transport and deposition in the ocean from the continental shelf to the deep sea and from surface waters to the seafloor using satellite and in-situ measurements. Quantifying particulate organic carbon (POC) in the ocean through the development of algorithms from satellite ocean color that are sea-truthed with in-situ POC and transmissometer data to unravel global ocean processes of carbon recycling.

Improving geoscience educational opportunities through development of enhanced educational delivery methods, relevant curricula, international field-based learning, and improved undergraduate and graduate educational experiences.

Mentoring students and faculty for successful educational and professional development.

Increasing diversity in geoscience disciplines.

HONORS AND AWARDS:

Texas A&M University, Association of Former Students Distinguished Teaching Award - College Level – 2016
Antarctic Service Medal – 2013
Women's Faculty Network Mentoring Award – 2007 – 1st recipient (University-wide)
Regents' Professor – 2006
Texas A&M University, International Excellence Award – 1995

National Science Foundation Faculty Award for Women Scientists and Engineers - 1991. Only 10 awards were given nationwide in the Geosciences, 3 in Ocean Sciences. The purpose of this $250,000 award is "to recognize the nation's most outstanding and promising women scientists and engineers in academic careers of research and teaching" and "to retain these women scientists and engineers in academia and to facilitate the further development of their careers."

Texas A&M University, Association of Former Students Distinguished Teaching Award - College Level – 1991
Sigma Xi – 1975
Phi Beta Kappa - 1975

UNDERGRADUATE TASK FORCE (CHAIR) 2004-2005:

"this effort ultimately will affect virtually all faculty and students", Robert Gates, 2004

Chair of University Task Force for Enhancing the Undergraduate Experience

In fall 2004 President Gates announced a major new initiative for the academic year: enhancing the undergraduate experience. This initiative, along with the faculty reinvestment program, improving the diversity of our campus, and addressing issues with the university's built environment, were his four goals as president. The Task Force for Enhancing the Undergraduate Experience was created and charged with drawing on current research, examining best practices and developing recommendations that are unique and enhance the undergraduate experience at Texas A&M University. The task force consisted of eleven subcommittees whose recommendations are changing the educational experience of all undergraduates at Texas A&M University.

PRESENT FEDERAL FUNDING:

NSF Multi-decadal Global Surveys of Benthic Nepheloid Layers - Supplement
PIs, Gardner, W.D., Richardson, M.J
$8,175 2016-2017
Supplemental funding to replace a transmissometer lost on a CTD cast during field work with the CLIVAR program.

NSF Multi-decadal Global Surveys of Benthic Nepheloid Layers
PIs, Gardner, W.D., Richardson, M.J
$208,394 2015-2017
The results of multi-decadal surveys of benthic nepheloid layers will aid oceanographers in understanding deep sea processes of sediment resuspension and redistribution. While suspended and on the seafloor these particles undoubtedly scavenge adsorption-prone elements or isotopes from the bottom waters.

NSF Oceanography Scholars
PIs, Gardner, W.D., Richardson, M.J., Yvon-Lewis, S, Thornton, D. Giese, B.
$621,742 2014-2019

The Oceanography Scholars S-STEM (Scholarships in Science, Technology, Engineering and Mathematics) **Program facilitates recruitment of academically-talented, financially needy graduate students to become oceanographic scientists** who will solve environmental, social and economically important challenges facing the nation. Financial support for the M.S. and Ph.D. students will also include partial teaching or research assistantships.

NSF ADVANCE: Promoting Success of Women Faculty through a Psychologically Healthy Workplace
P.I. : S. Yennello (M.J. Richardson as senior personnel)
$3,499,980 2010-2017

NSF ADVANCE program goal is increasing the participation and advancement of women in academic science and engineering careers.

PAST FEDERAL FUNDING AT A&M:

NSF Geological and Geophysical Scholars of Continental Margins
PIs, Gardner, W.D., Richardson, M.J., Lyle, M., Sager, W., Schmidt, M.
$598,287 2008-2015

The Geological and Geophysical Scholars of Continental Margins S-STEM (Scholarships in Science, Technology, Engineering and Mathematics) **Program facilitates recruitment of academically-talented, financially needy graduate students to become oceanographic scientists** in continental margin processes who will solve environmental, social and economically important challenges facing the nation. Financial support for the M.S. and Ph.D. students will also include partial teaching or research assistantships.

NSF Geoscience Scholars
PIs Richardson, M.J., ,Bownam, K., Cairns, D., Pettibon, J
$600,000 2007-2015

The Geoscience Scholars S-STEM (Scholarships in Science, Technology, Engineering and Mathematics) **Program facilitates recruiting new graduate and undergraduate students into the Geosciences with assistance of scholarship funds to defray the cost of attendance when they would otherwise not have had the resources to do so.**

NSF Geosciences Educators for Texas
PIs Bednarz, S., Richardson, M.J., and Stewart, R.
$352,923 2006-2012

The Geosciences Educators for Texas program to prepare highly qualified geosciences educators equipped to teach geosciences content in grades 8-12; and take leadership roles to improve geosciences education state- and nationwide.

NSF Expanded Opportunities in Atmospheric Sciences for Texas Undergraduates.
PIs Richardson, M.J., Cifuentes, L, Orville, R., Price-Blount, K., Norwine, J., Tobin, K.
$66,099 2005-2008

NSF Global POC Concentrations from a Decade of Optical Profiles and Satellite Data: A JGOFS Synthesis
PIs Gardner, W. D. and Richardson, M.J.
$221,794 2000-2003

ONR From Microns to Millimeters: the Use of Optically Determined Particle Size and Distribution in Understanding coastal Vertical Mixing Processes – Data Synthesis
PIs: Gardner, W.D. and Richardson, M.J.
$127,000 1998-2000

NSF The Role of POC, Small Particles and Aggregates in Biogeochemical Cycles in Southern Ocean Fronts
PIs: Gardner, W. D. and Richardson, M. J.
$450,000 1996-1999

NSF Faculty Awards for Women Scientists and Engineers
Tracing Sources and Sinks of Particles in the Ocean
PI: Richardson, M. J.
$250,000 1991-1999

NSF The Role of Aggregates and Small Particles in Biogeochemical Cycles in the Arabian Sea
PIs: Gardner, W.D. and Richardson, M.J.
$533,000 1994-1998

ONR From Microns to Millimeters: the Use of Optically Determined Particle Size and Distribution in Understanding Coastal Vertical Mixing Processes
PIs: Gardner, W.D. and Richardson, M.J.
$433,439 1995-1998

MMS Sediment Transport/ Benthic Boundary Layer
PIs: Gardner, W. D. and Richardson, M. J.
$104,732 1991-1996

NSF Distribution of Large and Small Particles in JGOFS Equatorial Pacific (EQPAC): Role in Carbon Cycling
PIs: Gardner, W. D., Richardson, M. J., and Walsh, I. D.
$273,768 1991-1993

ONR Optical Variability in the Equatorial and Southeast Pacific
PIs: Gardner, W. D. and Richardson, M. J.
$60,000 1991-1993

NSF Particulate Matter in the Atlantic Sector of the Southern Ocean: Optical Determination and Interpretation of Oceanic Processes
PIs: Richardson, M. J. and Gardner, W. D.
$78,199 1990-92

ONR Optical Determination of Particle Distribution Throughout the Water Column and its Relationship to Biogeochemical Processes During the GOFS Spring Bloom Experiment
PIs: Gardner, W. D. and Richardson, M. J.
$92,834 1989-90

ONR Abundance and Size Distribution of Large Marine Aggregates in the North Atlantic Ocean
PIs: Gardner, W. D. and Richardson, M. J.
$44,500 1989-90

NSF Research Assistantship for Minority High School Students
PIs: Richardson, M. J. and Gardner, W. D.
$2,000 1989

NSF Three-Dimensional Distribution of Particle Concentration and Size Spectra in the South Atlantic: Indicator of Oceanic Processes
PIs: Richardson, M. J. and Gardner, W. D.
$193,419 1987-90

ONR Beam Attenuation Coefficients in the South Atlantic: Indicator of Oceanic Processes
PIs: Gardner, W. D. and Richardson, M. J.
$9,999 1987-88

ONR Eddy Kinetic Energy, Benthic Storms and Sediment Redistribution in the Argentine Basin
PIs: Gardner, W. D. and Richardson, M. J.
$92,300 1986-88

OTHER FUNDING:

TAMU Computer-Aided Instruction for Geology 101
PIs: Richardson, M.J. and Herbert, B.
$7,500 1994

OURS	Matching funds for equipment purchase	
	$19,299	1991-1996
GEO RES	Matching funds for equipment purchase	
	$9,651	1991-1996
OCNG	Matching funds for ship use	
	$118,500	1992-1995
OURS	Matching funds for equipment purchase of Coulter Multisizer	
	$10,500	1987

CERTIFICATION/TRAINING:

40-hour Basic Mediation Training (2001)

Open water scuba certification (1976 and 2016)

LARGE SCIENCE PROJECTS PARTICIPATED IN:

Low-Level Waste Disposal - Sandia National Laboratories
HEBBLE - High Energy Benthic Boundary Layer Experiment
Vema Channel Program
SAVE - South Atlantic Ventilation Experiment
MUDWAVES - Mudwaves in the Argentine Basin
JGOFS - Joint Global Ocean Flux Study
- North Atlantic Bloom Experiment (NABE)
- Equatorial Pacific (EQPAC)
- Arabian Sea
- Southern Ocean (AESOPS)
- Synthesis and Modeling Project

WOCE - World Ocean Circulation Experiment
LATEX - Louisiana/Texas Shelf circulation program
CMO - Coastal Mixing and Optics –ONR
NEGOM – Northeast Gulf of Mexico program
CLIVAR Repeat Hydrography
- Added transmissometers to the CTD package on multiple cruises to expand our global beam attenuation data set.

GEOTRACES – International Study of Marine Biogeochemical Cycles of Trace Elements and their Isotopes
MCH –Mechanisms Controlling Hypoxia – NOAA
GO-SHIP – The Global Ocean Ship-Based Hydrographic Investigations Program

REVIEWED PROPOSALS FOR:

National Science Foundation
- Marine Geology and Geophysics
- Polar Programs
- Chemical Oceanography
- Biological, Behavioral, and Social Sciences
- Biological Oceanography
- Division of Ocean Sciences
- Division of Undergraduate Science, Engineering and Mathematics Education
- Directorate of Geosciences
- Directorate for Education & Human Resources, Division of Graduate Education

COURSES TAUGHT AT SUNY AND CUNY:

Structural Geology with field trip , New York City - Delaware
Structural Geology Lab
Geomorphology
Geomorphology Lab
Intro Physical Geology with field trip, Palisades, New York/ New Jersey
Intro Oceanography
Natural Science
Special Problems (Plate tectonics, coastal geomorphology, glacial sedimentation, marine sedimentation)

COURSES TAUGHT AT TEXAS A & M UNIVERSITY:

GEOL 101 – Principles of Geology
GEOL 101 Honors – Principles of Geology
GEOL 202 – General Earth Science
GEOL 485 – Directed Studies
GEOL 600 – Earth Science for Secondary School Teachers
GEOL 603 – Rocks and Minerals
GEOL 618 – Sedimentology, with field trip to Oklahoma
GEOL 685 – Directed Studies

GEOS 101 – Introduction to Geosciences
GEOS 481 - Seminar

OCNG 251 – Introduction to Oceanography
OCNG 485 – Directed Studies,
Ocean Science Presentations, (1 credit) created and taught – Fall 2016 – OCNG 481
Oceans in the News, (2 credits) created and taught - Spring and Fall 2015
OCNG 606 – Geological Oceanography Cruise
OCNG 685 – Directed Studies
OCNG 689 – Special Topics – Pelagic Particle Dynamics

GEOL 101 and OCNG 251 and 252 as field-based learning in Italy, 2011
GEOL 101 developed as an online course, fall 2011

Together with faculty in the College of Geosciences
MGeos – Master of Geosciences
Ocean Observation Certificate (Campbell, DiMarco leads)
B.S. – Environmental Studies
B.S. – Environmental Geosciences
B.A. – Geology (Wiltschko lead)
Ph.D. – Archeological Oceanography (not approved by Faculty Senate – Dean of Liberal Arts did not concur with Nautical Archeology support)

UNDERGRADUATE STUDENT ADVISOR:

Advisor for freshman, transfer, and graduate students throughout the year for those seeking information regarding pursuing a major in Environmental Geosciences, Geology and Geophysics a minor in Oceanography or the Master of Geosciences non-thesis degree.

GRADUATE STUDENT COMMITTEES AT TEXAS A&M UNIVERSITY:

Student's Name	Department	Level	Chair/Member	Year Graduated
Rebecca Gray	OCNG	M.S.	Co-chair	2016
Nikki Zuck	OCNG	M.S.	Co-chair	2015
Emma Cochran	OCNG	M.S.	Co-chair	2013
Amanda DePasquale	ATMO	M.S.	Member	2013
Stephanie Rice	OCNG	M.S.	Member	2007
Young Baek Son	OCNG	Ph.D.	Member	2006
Erick Huchzermeyer	OCNG	M.S.	Member	2005
Mary Patch	OCNG	M.S.	Member	2002
Geoff Bailey	OCNG	Ph.D.	Member	
Christina Bernal	OCNG	M.S.	Chair	2001
Ty Wamsley	OCEN	M.S.	Member	2000
Cheryl Burden	OCNG	M.S.	Co-Chair	1999
Josh Blakey	OCNG	M.S.	Member	1998
Jan Gundersen	OCNG	M.S.	Co-Chair	1997
Youcheng Zhang	OCNG	Ph.D.	Co-Chair	1997
Sung Pyo Chung	OCNG	Ph.D.	Co-Chair	1996
Lisa Meng	GEOL	Ph.D.	Member	1996
Annette Colgan	GEOL	M.S.	Chair	1995
Matthew Holtcamp	CHEM	Ph.D.	GCR	1995
Megan Wood	GEOL	M.S.	Chair	1993
Laura Cutright	GEOL	M.S.	Chair	transferred
Jun Song	CHEM	Ph.D.	GCR	1992
Ian Walsh	OCNG	Ph.D.	Member	1990
Bret Berglund	OCNG	M.S.	Co-Chair	1989

TEACHING RELATED ACTIVITIES (selected):

Texas A&M University:

Integration, development and delivery of geoscience content through field-based learning with the Arts and Civilization program for the Study Abroad Program in Santa Chiara, Italy, 2011

Center for Teaching Excellence at Texas A&M University:

Center for Teaching Excellence 25th anniversary celebration invited and hosted Roberta Johnson from the National Center for Atmospheric Research. Fall 2008.

"Be a Better Teacher. Better yet, Inspire Better Learners!" Inaugural Faculty Teaching Academy, Center for Teaching Excellence. One of eight faculty members selected university wide as inspirational and exemplary models to work with junior faculty during the academic year 2005 – 2006.

Center for Teaching Excellence "Network of University Professors Exemplary in Teaching" 1988-1995. Faculty member selected for assisting for faculty across campus seeking to improve teaching skills.

Center for Teaching Excellence team member to develop a newly created and required program. University-wide graduate teaching assistant training program, 1991

College of Geosciences:

Organized sponsorship by faculty in the College of Geosciences for airing on the local National Public Radio station, KAMU, a daily radio program "Earth and Sky" produced in association with the American Geophysical Union, 1993 – 1995

College of Science:

Regional Science Bowl, Jr Science Bowl, Moderator/Science Judge several years

Department of Oceanography:

Development and delivery of field-based learning Oceanography courses for the Study Abroad Program in Santa Chiara, Italy, 2011

Supervisor of OCNG 251 Graduate Teaching Assistant for 10-12 colleagues, 2010-2015

Best practices in teaching OCNG 251. Organized and formulated mechanisms for sharing tested successful and unsuccessful innovative teaching practices (end of long semesters)

National Ocean Science Bowl, Regional Competition, Moderator, Science Judge, coordinator of judges and volunteers (2005), yearly

Department of Geology and Geophysics:

Development and delivery of field-based learning Geology course for the Study Abroad Program in Santa Chiara, Italy, 2011

Administrator of Tier I Core Curriculum Science Course – Geology, 1986-1993 Director of the course working with faculty, graduate teaching assistants and lab coordinator to manage and enhance the instruction of 1000-1200 undergraduates students per semester. Assignments of graduate teaching assistants and other non-teaching graduate assistants assisting with the course.

Coordinator for community service requests to the Department of Geology, 1991-1993. Coordinated requests for speakers, samples loans, science fair judges, career day presentations, etc., from schools in the Brazos Valley and beyond, and local civic organizations.

MENTORING ACTIVITES:

Women's Faculty Network:

Women's Faculty Network mentoring program – Organized mentoring for all female faculty at Texas A&M University, 2007 – 2010.

Women's Faculty Network mentor to new female faculty throughout the university (1-3 per year), 1996 – present

Women's Faculty Network previous mentees nominated and received professional society awards, university excellence awards, and promotion to full professor, and appointment to academic administrative positions.

ATMentors:

a faculty/staff organization dedicated to providing a listening ear for students at Texas A&M University, mentor, 1993 – 2015.

Awards and promotion for students, faculty, staff, administrators:

Prepared nomination packets for faculty colleagues, graduate students, undergraduate students and staff for international, national, professional, university, and college awards. Average 2 per year, 1988 - present.

Assisted colleagues in preparation of tenure and promotion documents through an annual seminar on criteria for tenure and promotion and strategies for development of a successful tenure and promotion packages, 2002 – 2004. Individual mentoring and review of packages, 1994 – present.

SELECTED COMMITTEES/PANELS/ETC, NATIONAL AND STATE, (2000- present):

American Geophysical Union

Education Session Co-Convener – ED08: Innovative Integrative Approaches to K-Gray Ocean Sciences and Geosciences Education, 2010 – AGU Ocean Sciences Meeting, Portland, OR**,** Green, V., Richardson, M.J., Stepath, C. M.

National Science Foundation

Panelist for Division of Graduate Education - 2015

Panelist for Directorate of Geosciences – 2007

Advisory Council for the Geosciences Directorate, 2006- 2009
Education and Outreach Subcommittee (chair) 2007 - present

The charge of the NSF Advisory Committee on Geosciences is to
· Provide advice, recommendations and oversight concerning support for the NSF's geosciences research and education portfolio.
· Be a base of contact with the scientific community to inform NSF of the impact of its research support and NSF-wide policies on the scientific community.
· Serve as a forum for consideration of geosciences initiatives and research thrusts.
· Provide broad input into long-range plans and partnership opportunities.
· Perform oversight of program management, overall program balance, and other aspects of program performance for geoscience activities.

GeoVision Working Group – 2006 – 2008 (a group of 16 tasked with writing the strategic plan for NSF GEO) (4 face-to-face meetings), continual rewriting and revision of document

National Science Foundation

Committee of Visitors (COV) for Ocean Sciences Division, co-chair, 2006
· The NSF has become increasingly concerned with determining the effectiveness of the projects, programs, and overall set of activities it supports. The Committee of Visitors evaluate the performance of the Ocean Sciences Division, specifically with regard to programmatic definition and vision, the process of review, the resulting awards portfolio, and the results of investments.

University Corporation for Atmospheric Research (UCAR)

UCAR is a non-profit consortium of over 100 university members and affiliates founded in 1960 to enhance the capabilities of the universities and to focus on scientific problems that are beyond the scale of a single university. Its annual budget is $213 million.

Scientific Program and Evaluation Committee, Chair - 2005 – present
Chair-Evaluation of NCAR (National Center for Atmospheric Research)-2011
Board of Trustees, 1999 – 2006
Secretary of the Board of Trustees, 2002 – 2004
Interim Treasurer of the Board of Trustees, 2002
Audit and Finance Committee, 1999 – 2002
Nominating Committee (chair), 2001 – 2005
Nominating Committee, 2000 – present
Membership Committee (chair), 1997 – 2000
Membership Committee, 1995 – 2000

University-National Oceanographic Laboratory System:

Ocean observing science committee – 2010 – present
Extensive work with alpha and beta testing of user-interface and workshop planning and delivery

Consortium for Ocean Research and Education (CORE):

Institutional representative, 2002 – 2005
Executive Committee – elected, 2003 – 2005
Technical Advisory Panel – for the National Ocean Science Bowl – reviewer and writer of discipline questions for regional and national competitions – 2 days, Washington D.C - 2006

Council of Environmental Deans and Directors

Institutional representative, 2002-2004

National Association of State Universities and Land Grant Colleges (NASULGC)/ Association of Public and Land-grant Universities(APLU)

Board of Oceans and Atmosphere - Executive Committee – elected, 2007 - present

Phi Beta Kappa

Committee on Qualifications – selection of colleges/universities for site visits for sheltering new chapters of Phi Beta Kappa – 42 applicants in 2007 review. Chair of one site visit team and member of another team during spring 2008; 2003 – 2010.

State of Texas

Appointed by State Board of Education to Earth and Space Science committee for development of the Science Texas Essential Knowledge and Skills (TEKS) for a new Earth and Space Science capstone course– five 3 day meetings in Austin, TX with continual email revisions to course TEKS. The work of this group was politically controversial in Texas due to the emphasis on deep time, evolution and climate change. 2007 – 2009.

Texas A&M University System

Principal Investigator's Advisory Committee for the Texas A&M University Research Foundation –Meeting 2-3 times/year. Advise the Research Foundation on proposed policies and procedures, 2006 – 2011.

Texas A&M University (2010 - present):

University Level –

Academic Civil Rights Investigation Committee (ACRIC) – 2012 – present (investigations conducted 2012, 2015, and 2016, extensive interviewing and report writing with justification from interviews with complainant and respondents.

Council of Principal Investigators – elected representative for the college (2010-present).
Council of Principal Investigators – executive committee – 2010-2011

Budget Reallocation Task Force - Two 2hr meetings per week through fall semester – extensive background preparation, synthesis, integration and analysis – recommendations implemented (2010)

Budget Reallocation Task Force – Facilities subcommittee - extensive background preparation, synthesis, integration and analysis - recommendations implemented (2010)

Scientific Misconduct Committee – rewrote university documents and accompanying system documents (2010)

College of Geosciences

Tenure and Promotion Committee, 2008 – 2011
Geoscience Faculty Advisory Committee – 2010 – 2014 – elected

Department of Oceanography

Tenure and Promotion Committee (chair), 2011
Tenure and Promotion Committee (member), 2007 - 2011
Recruiting and Advising Committee (member), 2013 - present

SIGNIFICANT ACCOMPLISHMENTS AS DEAN OF THE COLLEGE OF GEOSCIENCES:

Team member for the preparation of the letter of intent and principal organizer of the presentations for the external panel site visit that resulted in the awarding by the National Science Foundation of the Integrated Ocean Drilling Program contract to the Joint Oceanographic Institutions/Texas A&M University/Columbia University Alliance in September 2003. This program brings increased stature to Texas A&M and specifically the College of Geosciences with this award being the University's largest federally funded research program, approximately $50 million/year.

Formulating with other colleagues and as dean, implementing the College of Geosciences' creative initiative to link the Integrated Ocean Drilling Program science to the academic mission of the University through the Ocean Drilling and Sustainable Earth Sciences (ODASES) initiative involving 10 new tenure-track faculty hires in the Colleges of Geosciences, Science, Education and Human Development, and the Dwight Look College of Engineering. Hired the first faculty member in the ODASES program and with faculty and administrative input formed interdisciplinary search committees for hires in participating colleges.

Obtaining 20 new tenured/tenure-track faculty members over four years for the College of Geosciences that enabled the College to make significant advancement in four cross-departmental thematic areas collectively defined by the faculty and administration.

Solicited and obtained endowment funds for establishment of new chairs, professorships, scholarships and increased discretionary funds for departments and the college.

INVITED PRESENTATIONS DURING FACULTY DEVELOPMENT LEAVE:

Ocean color and the biological pump: Tropics to Poles, Seminar at the Rhodes Aquarium, Rhodes, Greece, April 28, 2009 with W. Gardner.

.Joint Global Ocean Flux Studies in the Ross Sea, Antarctica, Rhodes, Greece, April 28, 2009 with W. Gardner.

Measuring marine particulate organic carbon (POC) from satellites: future use in assessing impacts of climate change, 2009. Inter University Institute for Marine Sciences & Hebrew University's Earth Sciences Institute, Eilat, Israel, May15, 2009 with W. Gardner.

Particulate Organic Carbon (POC) measured from satellites, Hellenic Center for Marine Research, Athens, Greece, 21 May, 2009 with W. Gardner.

Currents and Sediment Transport in the Mississippi Canyon and Effects of Hurricane Georges. Hellenic Center for Marine Research, Athens, Greece, 21 May, 2009 with W. Gardner.

Measuring marine particulate organic carbon (POC) from satellites, 2009. School of Marine Sciences, University of Maine, Orono, September 22, 2009 with W. Gardner.

Invited to Damascus University, Damascus, Syria as part of their international seminar series. Declined due to meeting with colleagues and giving seminars in Israel.

PUBLICATIONS:

Abstracts

Shor, A. N., M. J. Richardson, and D. A. Johnson, 1977. Bottom water flow and sediment transport south of Iceland. EOS, Trans. Amer. Geophys. Union, 58:1159.

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Gardner, W. D., J. C. Blakey, I.D. Walsh, M. J. Richardson, S. Pegau, J.R.V. Zaneveld, C. Roesler, M.C. Gregg, J. A. MacKinnon, H. M. Sosik and A. J. Williams, III, 2001 (May). Optics, particles, stratification and storms on the New England continental shelf. Journal of Geophysical Research, 106: 9473-9497.

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Gardner, W. D. A.V. Mishonov, and M. J. Richardson, 2006, Global POC Concentrations from in-situ and satellite data. Deep-Sea Research II, 53 (5-7): 718-740.

Richardson, M.J. 2006. "Women in Oceanography, Biographic Sketch", The Oceanography Magazine, Vol 18, No 1, p 103.

Committee of Visitors Advice to the NSF Ocean Sciences Division, 2007, EOS, 88: 149.
Mary Jo Richardson Texas A&M University, co-chair
Michael Roman, University of Maryland, co-chair
Carmen Aguilar, University of Wisconsin-Milwaukee
Claudia R. Benitez-Nelson, University of South Carolina
Thomas M. Brocher, U.S. Geological Survey
Tom Drake, Office of Naval Research

Rana A. Fine, University of Miami
James P. Ray, Oceanic Environmental Solutions LLC
Kathy Tedesco, National Oceanic and Atmospheric Administration

Nianzhi, J., Y. Zhang, Y.,Zeng,, W.D. Gardner, M. J. Richardson and A.V. Mishonov and others, 2007. Early Impacts of the Three Gorges Dam on the East China Sea Ecosystem, Water Research, 41: 1287-1293.

Son, Y.B., W.D. Gardner, A.V. Mishonov, and M.J. Richardson, 2009, Multispectral Remote Sensing Algorithms for Particulate Organic Carbon (POC): the Gulf of Mexico, Remote Sensing of Environment 113 (2009) 50–61. DOI: 10.1016/j.rse.2008.08.011

Ross, C.B., W.D. Gardner, M.J. Richardson, V.L. Asper, 2009. Currents and sediment transport in the Mississippi Canyon and effects of Hurricane Georges. Continental Shelf Research 29: 1384–1396

Son, Y.B., W.D. Gardner, A.V. Mishonov, and M.J. Richardson, 2009, Model-based remote sensing algorithms for particulate organic carbon (POC) in the Northeastern Gulf of Mexico, Journal of Earth System Science, 118 (1), 1-10.

Son, Y.B., W.D. Gardner, M.J. Richardson, J. Ishizaka, J.H. Ryu, Y.H. Ahn, H.-C. Kim, S.H. Kim, S.H. Lee, Tracing offshore low-salinity plumes in the northeastern Gulf of Mexico during the summer season by use of multispectral remote-sensing data. J. Oceanography. DOI: 10.1007/s10872-012-0131-y

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Gardner, W.D., B.E. Tucholke, M.J. Richardson, and P.E. Biscaye. Benthic storms, nepheloid layers, and linkage with upper ocean dynamics in the Western North Atlantic. Marine Geology, available online 10 January 2017 (http://dx.doi.org/10.1016/j.margeo.2016.12.012) (Invited Review Article)

Videos Produced:

Antarctic Adventures, RVIB Nathaniel B. Palmer, 97-1, Jan-Feb, 1997, 58 minute-video used by the scientific party of RVIB NBP 97-1 in seminars and presentations to community and school groups. I recorded video footage during the cruise, with significant post-cruise editing. While at sea email communications were exchanged with a middle school science class.

Amanda D. Rodewald

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EDUCATION

Ph.D. in Ecology, 2000. Pennsylvania State University, University Park, Pennsylvania.
M.S. in Zoology, 1995. University of Arkansas, Fayetteville, Arkansas.
B.S. in Wildlife Biology, 1992. University of Montana, Missoula, Montana.

PROFESSIONAL POSITIONS

Garvin Professor of Ornithology and Director of Conservation Science, Cornell Lab of Ornithology. July 2016 to present.
Director of Conservation Science, Cornell Lab of Ornithology. February 2013 to July 2016.
Professor, Department of Natural Resources, Cornell University. February 2013 to present.
Professor of Wildlife Ecology, School of Environment and Natural Resources, The Ohio State University. October 2010 – January 2013.
Visiting Scientist, Integrative Ecology Group, Estación Biológica de Doñana, CSIC, Sevilla, Spain. August 2011 – February 2012.
Associate Professor of Wildlife Ecology, School of Environment and Natural Resources, The Ohio State University. October 2006 – September 2010.
Assistant Professor of Wildlife Ecology, School of Environment and Natural Resources, The Ohio State University. August 2000 – September 2006.
Graduate Research Associate, School of Forest Resources, Pennsylvania State University, 1996–2000.
Research Assistant, Montana Dept of Fish, Wildlife, and Parks, 1996 and 1995
Tropical Research Assistant, Manomet Observatory for Conservation Sciences, 1996.
Laboratory Assistant, Dept. of Entomology, University of Arkansas, 1995.
Graduate Assistant, Dept of Biological Sciences, University of Arkansas, 1993-95.
Biological Technician, Glacier National Park, Montana, 1992.

HONORS AND AWARDS

International Research Fellow, Wall Institute for Advanced Studies, Univ. British Columbia. 2016-17
Public Voices Fellow, The Op-Ed Project, 2017
Partners in Flight Investigation Award, 2013
Avian Conservation and Science Award, Ohio Ornithological Society, 2012
Fellow, American Ornithologists Union, 2011
Fellow, CIC Academic Leadership Program, 2010-2011
Best Lessons Learned Award for Migratory Bird Conservation, Eco-Index & Rainforest Alliance, 2011
Distinguished Junior Faculty Research Award, Ohio Agricultural Research & Development Center, OSU, 2007
Elective Member of American Ornithologists' Union, 2006
Fellow, President's and Provost's Leadership Institute, OSU, 2006-2008
Best Lessons Learned Award for Migratory Bird Conservation, Eco-Index & Rainforest Alliance, 2009
Finalist, Magrath & Kellogg Foundation Engagement Award, OSU, 2007
Price Academic Advising Award, College of Food, Agricultural, and Environmental Sciences, OSU, 2004
Roger Latham Award in School of Forest Resources, PSU, 2000

Brian Horton Award in Ecology, PSU, 2000
Paul A. Stewart Research Award, Wilson Ornithological Society, 1999
Graduate Women in Science, Sigma Delta Epsilon Fellowship, 1998-99
Clare Boothe Luce Fellowship, Women in Science & Engineering Institute, PSU, 1997-99
Pinchot Scholar, School of Forest Resources, PSU, 1996-1999
National Park Service Productivity Award, 1993
Outstanding Senior Award, School of Forestry, UM, 1992
Scholarships: Watkins Research Scholarship, UM, 1991-92; Montana Board of Regents Scholarship, 1991-92; Ralph H. O'Brien Scholarship, 1989-90; New York Regents Scholarship, 1988-90

NATIONAL LEADERSHIP AND SERVICE

- **Scientific Review Board, National Socio-environmental Synthesis Center,** 2012-2016. SESYNC is an NSF-funded synthesis center focused on socio-environmental issues.
- **Advisory Committee for Monitoring Avian Productivity and Survival (MAPS) Program**, 2016 to present.
- **Founding member** of the Steering Committee for the Breeding Grounds program of the Canada Warbler International Conservation Initiative, 2015-2016.
- **Chartered Science Advisory Board of US Environmental Protection Agency**, 2009 to 2015. Advised the Agency on broad scientific matters in science, technology, social/economic issues, evaluates scientific and technical information as well as methodological and analytical approaches that support regulatory decisions, and provides guidance on development and application of strategic research programs in the Agency.
- **Avian Advisory Committee, Wildlife Habitat Council**, 2014. Provided guidance and recommendations on how corporate habitat improvement projects should be evaluated and certified by the Wildlife Habitat Council.
- **Chair, EPA Science Advisory Board review panel for EPA's draft report *Connectivity of Streams and Wetlands to Downstream Waters: A Review and Synthesis of the Scientific Evidence.*** 2013-2014. Reviewed the EPA's controversial draft report on The Waters of the US, that synthesizes the scientific literature regarding the biological, chemical, and hydrologic connectivity of waters and the effects that small streams, wetlands, and open waters have on downstream waters such as rivers, lakes, estuaries, and oceans. Reviewed the scientific basis of the proposed water rule at special request of Congress.
- **National Academies / National Research Council's Committee on Human and Environmental Exposure Science in the 21st Century**, 2010-2012. Developed a long-range vision for exposure science as well as an implementation strategy. Efforts included the development of a unifying conceptual framework for exposure science to advance the study and assessment of human and ecological contact with chemical, biological, and physical stressors in their environments.
- **Ecological Processes and Effects Committee of the Science Advisory Board**, **US Environmental Protection Agency**, 2006 to 2012. Provided independent advice to the EPA Administrator on issues related to EPA environmental programs, science, and research that aims to protect, sustain and restore the health of ecosystems.
- **Report on the Environment Review Panel of the Science Advisory Board, US Environmental Protection Agency**, 2009 to 2015. Provided advice on future development of the Agency's Report on the Environment.
- **Review Panel for National Science Foundation**, Ecology Program, 2007, 2009, 2012. Evaluated proposals submitted to Ecology program of Division of Environmental Biology of NSF.
- **Expert for US Environmental Protection Agency's Workshop on "Ecological Risk Assessment – An Evaluation of the State-of-the Practice",** 2006.

- **Geographic Information System Screening Tool (GISST) Review Panel of the Science Advisory Board**, US Environmental Protection Agency, 2005. Reviewed GISST, an environmental assessment tool that systematically evaluates single media and cumulative impacts for environmental and regulatory decisions in Region 6.
- **Critical Ecosystem Assessment Tool Review for the Science Advisory Board, US Environmental Protection Agency**, 2004. Reviewed a spatially explicit model (CrEAM) developed to assess the ecological significance of land areas across EPA Region5.

INSTITUTIONAL LEADERSHIP AND ADMINISTRATION

- **Director of Conservation Science Program,** Cornell Lab of Ornithology (2013 to present)
  - Manage ~$1.5 million annual budget from grants, gifts, and contracts.
  - Supervise 6-9 professional and academic staff and 6-8 graduate students.
  - Developed a research portfolio with staff and students that included projects in 12 countries – Chile, Peru, Colombia, Panama, Costa Rica, Nicaragua, Honduras, Guatemala, Belize, Jamaica, Canada, and the U.S.
  - Conceived of and co-developed the Cornell Lab's Land Trust Initiative, which builds capacity in land trusts for strategic planning, monitoring, and conservation through workshops, publications, web-based resources, online interactive decision-support tool, and a small grant program.
  - Initiated interdisciplinary research to innovate in collaborative and entrepreneurial approaches to sustainability, conservation finance, and environmentally-friendly business, such as developing market-based incentives for forest restoration and conservation in Latin America; collaborators include Johnson School of Business, Dyson School of Applied Economics, Cornell Institute for Public Affairs, and private sector.
  - Formalized institutional partnerships with American Bird Conservancy, National Fish and Wildlife Foundation, Wildlife Conservation Society, and foundations.
  - Launched two competitive grant programs – one for land trusts and one for Latin American conservation organizations.
  - Engage frequently with conservation practitioners and environmental agencies and NGOs
  - Write bi-monthly contributor column in The Hill, the leading US policy/news source for Capitol Hill as well as contribute op-eds to other news outlets.
  - Interact regularly with media for interviews and commentaries (print, radio, film)
  - Contribute to development activities by engaging with private donors and foundations.
- **Faculty Advisory Board,** Atkinson Center for a Sustainable Future, Cornell (2013 to present). Provided oversight, direction, and advice to Cornell's interdisciplinary sustainability center.
- **Cornell Sustainability Task Force**, Cornell (2017). Developed a strategy for Cornell University to be an international leader in sustainability science and application, emphasizing how to facilitate collaboration across campus and with external partners.
- **College of Agricultural & Life Sciences Structure Task Force**, Cornell (2016). Evaluated the organizational structure of the College and proposed ways to improve efficiency, capacity to pursue cutting-edge research, teaching, and extension efforts, and student experience.
- **Seminar Series Co-organizer,** Department of Natural Resources, Cornell (2015-2017).
- **Graduate Admissions Committee,** Department of Natural Resources, Cornell (2013-2016).
- **Environmental Science & Sustainability Internship Committee**, Cornell (2015)
- **Oversight Committee**, Cornell Center for Wildlife Conservation, Cornell (2013 to present)
- **Ad hoc tenure review committee chair,** College of Agricultural and Life Sciences, Cornell (2015).
- **Science Advisory Committee to Environmental Science Program Council**, OSU (2010-2011). Developed strategic plan to reorganize and integrate environmental sciences across colleges at Ohio State; reported to Provost and Deans.

- **Steering Committee of University Senate, Ohio State University** (2009-2011). Senate leadership committee that met monthly with Provost and academic leaders to identify and discuss key issues.
- **University Senate, Ohio State University** (2009-2011). Elected governance body comprised of faculty, staff, and students.
- **Advisory Committee for Ohio Sea Grant College Program, Stone Laboratory, the Center for Lake Erie Area Research (CLEAR), and the Great Lakes Aquatic Ecosystem Research Consortium (GLAERC)** (2010-2012). Developed strategic and tactical plans for research, education, and outreach efforts.
- **Advisory Board for Climate, Water, Carbon Program** at OSU (2008-2011). Appointed to administer and steer the multi-million dollar university targeted investment in excellence, especially regarding grant awards, research progress, and faculty hires.
- **Advisory Board for Raccoon Ecological Management Area** (OSU representative; 2008-2010). Board of appointed representatives from academic institutions, federal & state agencies, and non-profit organizations to oversee research and management on cooperatively managed natural area.
- **Environment & Natural Resources Graduate Studies Committee** (2001-2011). Responsible for administering graduate programs in School of Environment & Natural Resources, including matters regarding admission, fellowships and associateships, graduate curriculum, and program requirements.
- **Advisory Committee for Audubon Sanctuary**, Ohio State University Golf Course (2011). Tasked with providing advice on environmental sustainability and wildlife management on golf course. .
- **Affiliate Faculty of the John Glenn Institute of Public Service and Public Policy** (2006-present).
- **Search Committees**. Chair for search for Assistant Professor of Aquatic Ecology (2010); member, search committees for Assistant Professor in environmental decision-making (2006-07), SENR Director (2004-05), Assistant Professor of wildlife ecology (2002), and Assistant Professor in natural resources communication (2001).

SERVICE TO PROFESSIONAL SOCIETIES

- Elected member of Nominating Committee of the AAAS Section on Agriculture, Food, and Renewable Resources, 2015-2018.
- Special research topic co-editor, Frontiers in Ecology and Evolution: Behavioural and Ecological Consequences of Urban Life in Birds. 2016-2017. With Caroline Isaksson and Diego Gil.
- Editorial Board, *Issues in Ecology* (ESA), 2013 to present.
- Editorial Board, *Studies in Avian Biology*, 2010 to 2016.
- Member, Early Professionals Committee, American Ornithological Society 2013-14.
- Chair of Outreach and Education, Society for Ornithology Committee, 2011-2012.
- Council Member of The American Ornithologists' Union, 2008-2011.
- Associate Editor for the *International Journal of Forestry*, 2008-2011.
- Associate Editor for *The Auk, an International Journal of Ornithology*, 2006-2010.
- Associate Editor for *Journal of Wildlife Management*, 2004-2006.
- Member of Publication Awards Committee for The Wildlife Society, 2005-07.
- Member of Research Awards Committee of American Ornithologists' Union, 2005-07.
- Guest Editor for special issue, *Wildlife Society Bulletin*, 2004-2005.
- Guest Editor for *Conservation Biology*, Spring 2004.

REVIEWER SERVICE

National Science Foundation. Ecology, Population Biology, & International Programs, 2005-11.
US Fish and Wildlife Service. Great Lakes Protection Fund Program, 2008.
US Forest Service. Northeast Research Station Research Charter, 2008.
National Fish and Wildlife Foundation grants, 2007.

US Forest Service. Wayne National Forest Plan and Species Viability Evaluations, 2002.
National Commission on Science for Sustainable Forestry, Sustainable forestry bio-indicators, 2002.
Reviewer for *Science, Nature, Ecology, Ecological Monographs, Ecological Applications, Landscape Ecology, Conservation Biology, Biological Conservation, Journal of Animal Ecology, Agroecosystems and Environment, Journal of Wildlife Management, Ecography, Journal of Tropical Ecology, Journal of Field Ornithology, Landscape and Urban Planning, Environmental Management, The Auk, Wilson Journal of Ornithology, Forest Science, Condor, Oikos, Naturwissenchaften, Ornis Fennica, Natural Areas Journal, American Midland Naturalist, Wildlife Research, Ohio Journal of Science, Journal of Applied Ecology, Forest Ecology and Management, Ardeola, Journal of Avian Biology, Frontiers in Ecology and Evolution*

RESEARCH

As an ecologist, I study how global changes impact ecosystems across multiple spatiotemporal scales and levels of biological organization. My research touches on a variety of sub-disciplines, including conservation biology, community ecology, landscape ecology, population demography, behavioral ecology, and ecological restoration. My current work focuses on (1) population and community responses to changes in land use, climate, invasive species, and disturbance regimes, (2) socioecological dynamics and conservation in working landscapes, (3) eco-evolutionary dynamics in human-dominated and urbanizing systems, (4) sustainable management of temperate and tropical forests, (5) conservation planning and prioritization, and (6) innovative finance and market-based instruments to support conservation and alleviate poverty.

PUBLICATIONS:

Journal articles (*graduate student advisee, **post-doc, ***undergraduate student advisee)

118 Rodewald, A.D. and P. Arcese. *In press.* Reproductive contributions of cardinals are consistent with a hypothesis of relaxed selection in urban landscapes. Frontiers in Ecology and Evolution.

117 LaSorte, F., D.Fink, P.J. Blancher, A.D. Rodewald, V. Ruiz-Gutierrez, K.V. Rosenberg, W.M. Hochachka, P.H. Verburg, and S. Kelling. *In press.* Global change and the distributional dynamics of migratory bird populations wintering in Central America. Global Change Biology.

116 Kearns, L. J.* and A.D. Rodewald. *In press.* Does nest predator activity predict location and survival of songbird nests in urbanizing landscapes? Condor.

115 Schuster, R.**, A.D. Rodewald, T.G. Martina,, K.A. Wilson,. E.A. Law, M. Watts , H.P. Possingham & P. Arcese. *In press.* Tax-shifting and incentives for biodiversity conservation on private lands. Conservation Letters.

114 Sevillano-Rios, C.S. * and A.D. Rodewald. *In press.* Avian community structure and habitat use of *Polylepis* forests along an elevation gradient. PeerJ 5:e3220; doi: 10.7717/peerj.3220

113 Bennett, R E. *, S. Barker Swarthout, J. S. Bolsinger, A.D. Rodewald, K. V. Rosenberg, and R. Rohrbaugh. *In press.* Extreme genetic similarity does not predict non-breeding strategies in two closely related warblers. Journal of Field Ornithology.

112 Swift, R.J.*, A.D. Rodewald, and N.R. Senner. *In press.* Breeding habitat of a declining shorebird in a changing environment. Polar Biology.

111 Hernández-Aguilera , J. N., M. I. Gómez , A.D. Rodewald, X. Rueda, C. Anunu, R. Bennett*, H.M. van Es. *In press.* Quality as a driver of sustainable agricultural value chains: The case of the relationship coffee model. Business Strategy and the Environment.

110 Swift*, R.J., A.D. Rodewald, and N.R. Senner. 2017. Environmental heterogeneity and biotic interactions as potential drivers of spatial patterning of shorebird nests. Landscape Ecology 32:1689-1703.

109 Soto, G.E.*, C.G. Pérez-Hernández, I.J. Hahn, A.D. Rodewald, P.M. Vergara. 2017. Tree senescence as a direct measure of habitat quality: linking red-edge vegetation indices to space use by Magellanic Woodpeckers. Remote Sensing of Environment.

108 Malpass, J.*, A.D. Rodewald, S.N. Matthews. 2017. Scale-dependent effects of anthropogenic foods on predators and prey. Condor 119:1-16.

107 Rodewald, A.D. 2016. Beyond biology: the political and legal implications of "conservation reliance." Avian Conservation and Ecology 11 (2):13.

106 Colorado, G.J.Z.* and A.D. Rodewald. 2016. Patterns of mass change in wintering Neotropical-Nearctic migratory birds in shaded monocultures in the Andes. Agroforestry Systems. doi:10.1007/s10457-016-9989-9

105 Sullivan, BL, Phillips, T, Dayer, AA**, Wood, CL, Farnworth, A, Iliff, MJ, Davies, IJ, Wiggins, A, Fink, D, Hochachka, W, Rodewald, AD, Rosenberg, KV, Bonney, R, and Kelling, S. 2016. Using open access observational data for conservation action: a case study for birds. Biological Conservation. http://dx.doi.org/10.1016/j.biocon.2016.04.031

104 Wood, E. M.**, S. E. Barker, W. M. Hochachka, R. W. Rohrbaugh, K. V. Rosenberg, and A. D. Rodewald. 2016. Intermediate habitat associations by hybrids may facilitate genetic introgression in a songbird. Journal of Avian Biology. DOI: 10.1111/jav.00771

103 Rodewald, A.D. and P. Arcese. 2016. Direct and indirect interactions between landscape structure and invasive or overabundant species. Current Landscape Ecology Reports. DOI 10.1007/s40823-016-0004-y

102 Dayer, A.**, Rodewald, AD, Stedman, R., E. Cosbar***, and EM Wood**. 2016. Wildlife Conservation and Private Protected Areas: The Discrepancy between Land Trust Mission Statements and their Perceptions. Environmental Management 58:359-364.

101 Vergara, P.M., G.E. Soto*, D. Moreira-Arce, A.D. Rodewald, L.O. Menesese, and C.G. Perez-Hernandez. 2016. Foraging behavior in Magellanic Woodpeckers is consistent with a multi-scale assessment of tree quality. PLoS ONE 11(7):e0159096.

100 Narango, D.L.* and A.D. Rodewald. 2016. Urban-associated drivers of song variation along a rural-urban gradient. Behavioral Ecology 27:608-616.

99 Thieme, J.L.*, A.D. Rodewald, S.D. Gehrt, J. Brown, and C. Anchor. 2015. Linking grassland and early successional bird territory density to predator activity in urban parks. Natural Areas Journal 35:515-532.

98 Rodewald, A.D., R.P. Rohr, M.A. Fortuna, and J. Bascompte. 2015. Does removal of invasives restore ecological networks? An experimental approach. Biological Invasions 17:2139-2146. DOI 10.1007/s10530-015-0866-7

97 Colorado, G.J.Z.* and A.D. Rodewald. 2015. Multiscale influence of deforestation and habitat alteration on Neotropical-Nearctic migratory birds and mixed species flocks in the Andes. Biological Conservation 188:72-81.

96 Boves, T.J., A.D. Rodewald, P.B. Wood, D.A. Buehler, J.L. Larkin, T.B. Wigley, P.D. Keyser. 2015. Habitat quality from individual- and population-level perspectives and implications for management. Wildlife Society Bulletin 39:443-448.

95 Colorado, G. J. Z.* and A. D. Rodewald. 2015. Assembly patterns of mixed-species flocks in the Andes. Journal of Animal Ecology 84: 386-395.

94 LaSorte, F.A., D. Fink, W.M. Hochachka, J.L. Aycrigg, K.V. Rosenberg, A.D. Rodewald, N.E. Bruns, A. Farnsworth, B.L. Sullivan, C. Wood, and S. Kelling. 2015. Stewardship responsibilities on public lands and full life-cycle conservation of North American birds. Ecological Applications 25(1):39-51.

93 McDermott, M.*, A.D. Rodewald, S. N. Matthews. 2015. Managing tropical agroforestry for conservation of flocking birds. Agroforestry Systems. DOI: 10.1007/s10457-014-9777-3.

92 Malpass, J.*, A.D. Rodewald, and S. Matthews. 2015. Trees and shrubs do not promote activity of nest predators in residential yards. Landscape and Urban Planning 135:32-39

91 Padilla, B.J.* and A.D. Rodewald. 2014. Avian metapopulation dynamics in a fragmented urbanized landscape. Urban Ecosystems. Doi: 10.1007/s11252-014-0390-z

90 Newell, F.L.*, T.A. Beachy, A.D. Rodewald, C.G. Rengifo, I.J. Ausprey*, and P.G. Rodewald. 2014. Foraging behavior of Cerulean Warblers during the breeding and non-breeding seasons: evidence for the breeding currency hypothesis. Journal of Field Ornithology 85(3):310-320.

89 Rodewald, A.D., R.P. Rohr, M.A. Fortuna, and J. Bascompte. 2014. Community-level demographic consequences of anthropogenic disturbance: an ecological network approach. Journal of Animal Ecology. doi: 10.1111/1365-2656.12224

88 McDermott, M. E.* and A.D. Rodewald. 2014. Conservation value of silvopastures to Neotropical migrants in Andean forest flocks. Biological Conservation 175:140-147.

87 Rowse, L.M.*, A.D., Rodewald, S.M.P. Sullivan. 2014. Pathways and consequences of contaminant flux to Acadian flycatchers (*Empidonax virescens*) in urbanizing landscapes of Ohio, USA. Science of the Total Environment 485-486: 461-467.

86 LaSorte, F.A., D. Fink, W.M. Hochachka, A. Farnsworth, A.D. Rodewald, K.V. Rosenberg, B.L. Sullivan, C. Wood, and S. Kelling. 2014. The role of atmospheric conditions in the seasonal dynamics of North American migration flyways. Journal of Biogeography 41:1685-1696.

85 Newell, F.L.*, T.A. Beachy, A.D. Rodewald, C.G. Rengifo, I.J. Ausprey*, and P.G. Rodewald. 2014. Foraging behavior of migrant warblers in mixed-species flocks in Venezuelan shade coffee: interspecific differences, tree species selection, and effects of drought. Journal of Field Ornithology 85(2):134-151.

84 Sullivan, Aycrigg, Barry, Bonney, Bruns, Cooper, Dhondt, Dietrich, Farnsworth, Fink, Gerbracht, Gomes, Hochachka, Iliff, Lagoze, La Sorte, Merrifield, Phillips, Reynolds, Rodewald, Rosenberg, Trautmann, Wiggins, Winkler, Wong, Wood, Yu, Kelling. 2014. The eBird enterprise: an integrated approach to the development and application of citizen science. Biological Conservation 169:31-40.

83 Boves, T.J., D.A. Buehler, P.B. Wood, A.D. Rodewald, J.L. Larkin, P.D. Keyser, and T.B. Wigley. 2014. Multiple plumage traits convey information about age and within-age-class qualities of a canopy-dwelling songbird, the Cerulean Warbler. Auk 131:20-31.

82 Stoklosa, S.K.***, L.J. Kearns*, and A.D. Rodewald. 2014. Risky edges: temporal variation in brood parasitism of Northern Cardinals. Wilson Journal of Ornithology. 126:94-97.

81 Sheehan, J., P.B. Wood, D.A. Buehler, P.D. Keyser, J.L. Larkin, A.D. Rodewald, T.B. Wigley, T.J. Boves, G.A. George, M.H. Bakermans*, T.A. Beachy, A. Evans, M.E. McDermott*, F.L. Newell*, K.A. Perkins, and M. White. 2014. Avian response to timber harvesting applied experimentally to manage Cerulean Warbler breeding populations. Forest Ecology and Management. 321:5-18.

80 Lehnen, S. E.* and A. D. Rodewald. 2013. Daily and seasonal movements in a shrubland-obligate breeder in relation to mature forest edge habitat. Forest Ecology and Management 305:112-119.

79 Newell, F.L. *, T.J. Boves, D.A. Buehler, T.A. Beachy, P.B. Wood, A.D. Rodewald, J.L. Larkin, P.D. Keyser, G.A. George, J. Sheehan, J. Mizel, and A. Evans. 2013. Comparison of point counts and territory mapping for detecting effects of forest management on songbirds. Journal of Field Ornithology 84:270-286.

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U.S. Fish and Wildlife Service. Wintering Grounds Conservation Plan for Golden-winged Warblers With Rosenberg & Rodewald. 2013-2014. $94,000

Ohio Department of Natural Resources – Division of Wildlife. Ohio biodiversity conservation partnership – conserving birds in urbanizing landscapes. 2011-2013. $127,100.

Ohio Department of Natural Resources – Division of Wildlife. Ohio biodiversity conservation partnership – forest bird habitat management. 2011. $26,450.

U.S. Fish and Wildlife Service. Assessing the impact of free-ranging cats and food-provisioned cat colonies on the conservation value of protected areas to grassland birds. U.S. Fish and Wildlife Service. 2010-2013. $38,709. With Stan Gehrt.

National Science Foundation. Research Experience for Undergraduate (REU) Supplement for "Towards a mechanistic understanding of landscape-scale responses of animal communities to urbanization. 2010. $14,876.

U.S. Fish and Wildlife Service. Non-breeding ecology of Cerulean Warblers in shade-coffee plantations in the northern Andes. U.S. Fish and Wildlife Service. 2010-2014. $24,516.

National Science Foundation. Research Experience for Undergraduate (REU) Supplement for "Towards a mechanistic understanding of landscape-scale responses of animal communities to urbanization. 2009. $12,974.

National Council on Air and Stream Improvement. Cerulean Warbler conservation initiative 4. 2008-2010. Breeding ground forest management experiment, $108,000

National Council on Air and Stream Improvement. Non-breeding demography of Cerulean Warblers in Venezuela, 2008-2010. $ 30,000.

National Council on Air and Stream Improvement. Habitat model testing for the Cerulean Warbler in South America, 2008-2010, $21,000

Ohio Agricultural Research and Development Center (OARDC) and *The Ohio State University*. Social and ecological values of agroecosystems in the Venezuelan Andes. Office of International Affairs. 2008. $2,000.

U.S. Fish and Wildlife Service. Non-breeding ecology of Cerulean Warblers in shade-coffee plantations in Venezuela. U.S. Fish and Wildlife Service. 2008-2010. $17,796.

National Science Foundation. Research Experience for Undergraduate (REU) Supplement for "Towards a mechanistic understanding of landscape-scale responses of animal communities to urbanization. 2008. $6,551.

National Science Foundation. Linking watershed research and GK-12 education within an ecosystem context. R. Moore, V. Bouchard, C. Goebel, C. Hoy, L. Williams, A. Rodewald, D. Stinner, and P. Grewal. 2007-2012. $2,958,178.

National Science Foundation. Towards a mechanistic understanding of landscape-scale responses of animal communities to urbanization. 2007-2011. $421,300.

National Science Foundation. Research Experience for Undergraduate (REU) Supplement for "The role of the landscape matrix in structuring avian communities". 2007. $6,230.

Ohio Ornithological Society. Winter ecology of Cerulean Warblers in shade-coffee plantations in Venezuela, 2007. $1,500.

Cleveland Metroparks Zoo. Winter ecology of Cerulean Warblers in shade-coffee plantations in Venezuela, 2007. $1,500.

Ohio Department of Natural Resources – Division of Wildlife. Conserving birds in urbanizing landscapes: the importance of the post-fledging period. 2007-2012 $139,166.

Ohio Department of Natural Resources – Division of Wildlife. Towards a mechanistic understanding of landscape-scale responses of animal communities to urbanization. 2007-2012. $157,755.

National Council on Air and Stream Improvement. Cerulean Warbler conservation initiative 3. 2007-2008. $32,000.

U.S. Fish and Wildlife Service. Cooperative Cerulean Warbler forest management project. USFWS, 2005-2009, $53,310.

National Science Foundation. The role of the landscape matrix in structuring avian communities. 2004-2008. $125,000.

National Science Foundation. Research Experience for Undergraduate (REU) Supplement for "The role of the landscape matrix in structuring avian communities". 2005. $6,000.

National Science Foundation. Research Experience for Undergraduate (REU) Supplement for "The role of the landscape matrix in structuring avian communities". 2006. $6,245.

National Fish and Wildlife Foundation. Cooperative Cerulean Warbler forest management project; administered through National Council on Air and Stream Improvement, 2006-2010. $600,000 per year. B. Wigley, D. Buehler, P. Hamel, P. Keyser, J. Larkin, D. Maehr, A. Rodewald, K. Rosenberg, P. Bohall-Wood.

Ohio Department of Natural Resources – Division of Wildlife. Avian response to forest management for oak regeneration. 2006-2009. $163,634.

Ohio Department of Natural Resources – Division of Wildlife. Conservation of riparian forests in urbanizing landscapes. 2005-2007. $22,200.

Ohio Agricultural Research and Development Center (OARDC) and *The Ohio State University*. After the invasion: Developing a mechanistic understanding of ecological and human responses to exotic species to inform restoration decisions. 2005-2007. Ohio Agricultural Research and Development Center Competitive Grant Program, $100,000. A. Rodewald, V. Bouchard, M. Miriti, and J. Arvai.

U.S. Fish and Wildlife Service. Demography of Cerulean Warblers on breeding and wintering grounds, 2004-2006. Neotropical Migratory Bird Conservation Act Program. $57,204. A. D. Rodewald and M. H. Bakermans.

U.S. Fish and Wildlife Service. Conservation of Cerulean Warblers in the Ohio Hills. Nongame Bird Program, 2004-2006. $12,000.

Ohio Department of Natural Resources – Division of Wildlife. Conservation of Cerulean Warblers in the Ohio Hills. 2004-2006. $40,000.

The Nature Conservancy. Conservation of Cerulean Warblers in the Ohio Hills. 2004-2005. $8,713.

Ohio Department of Natural Resources – Division of Wildlife. Conservation of late-successional birds in managed forest landscapes. 2003-2008. $265,934

Ohio Department of Natural Resources – Division of Wildlife. Balancing the needs of early and late successional birds on public forestlands. 2003-2007, $185,106.

Ohio Department of Natural Resources – Division of Wildlife. Bird conservation in midwestern riparian forests: local and landscape influences on breeding birds. 2003-2005, $19,047.

American Association for the Advancement of Science. Edge effects in tropical montane forests: impacts on avian communities. 2003. $4,000.

U.S. Fish and Wildlife Service. Wildlife habitat enhancement on public open spaces. 2001-2003. National Conservation Training Center, $26,379.

Ohio Department of Natural Resources – Division of Wildlife. Monitoring and demographic modeling of grassland birds on strip mines, 2002-2007, $73,000.

National Fish and Wildlife Foundation – Wildlife Links. Assessment of Midwestern golf courses as breeding habitat for a declining bird species: the Red-headed Woodpecker. 2001-2004. $59,920. Funding through U.S. Golf Association. A. D. Rodewald and P. G. Rodewald.

Ohio Department of Natural Resources – Division of Wildlife. Minimum area and habitat requirements of scrub-successional birds: does landscape context matter? 2001-2004, $101,332.

Ohio Department of Natural Resources – Division of Wildlife. Suitability of riparian and upland forests as stopover habitat for migrating songbirds: a multi-scale approach. 2001, P. Rodewald and A. Rodewald. $5,000.

Ohio Agricultural Research and Development Center (OARDC) and *The Ohio State University.* A landscape approach to riparian forest buffer design: implications for wildlife conservation and policy. 2001, The C. William Swank Grant Program in Rural-Urban Policy. $8,000.

Ohio Agricultural Research and Development Center (OARDC) and *The Ohio State University.* A multi-scale analysis of landscape matrix effects on riparian forests: implications for wildlife conservation and buffer design. 2000-2002, OARDC Research Enhancement Competitive Seed Grants. $19,500.

INVITED RESEARCH SEMINARS

American Ornithological Society, Michigan State University. 2017. Plenary address. The Anthropocene frontier: understanding ecological responses to urbanization.

Dumbarton Oaks, Harvard University. Mellon Initiative in Urban Landscape Studies. 2017. How a bird's eye view of the city teaches us about urban ecology.

Skidmore College, Department of Biology. 2017. A bird's eye view of the city: how our actions alter species interactions.

University of British Columbia, Institute for Resources, Environment, and Sustainability. 2017. Can working landscapes work for conservation?

Invited Inaugural Presentation. Colombian Ornithological Congress, Medellin, Colombia. 2016. A vista de aves de la naturaleza en la ciudad: Los sorprendentes formas en que nuestras acciones alteran las comunidades ecológicas.

Cornell Lab of Ornithology, Monday Night Seminar Series. 2016. Coffee, communities, and conservation: how your cup can make a difference.

Barkalow Distinguished Conservationist Lecture, College of Natural Resources, North Carolina State University. 2016. A bird's eye view of nature in the city: the surprising ways that our actions alter species interactions and shape ecological communities.

Ecology, Evolution, and Behavior Seminar Series, Virginia Tech. 2016. Altered species interactions in cities and the role of anthropogenic inputs.

Plenary for Trilateral Committee for Wildlife and Ecosystem Conservation and Management, Annual Meeting in Ottawa, Canada. 2016. Bringing vision to reality: the path forward for bird conservation in the Americas.

Department of Ecology, Evolution, and Biodiversity, University of British Columbia. 2015. Altered species interactions in cities and the role of anthropogenic inputs.

El Instituto de Ecología (INECOL), Xalapa, Mexico. 2015. Causes and consequences of altered species interactions in urbanizing landscapes.

Department of Wildlife Ecology and Conservation, University of Florida. 2015. Causes and consequences of altered species interactions in urbanizing landscapes.

Organismic and Evolutionary Biology Program Seminar Series, University of Massachusetts-Amherst. 2014. Altered species interactions in cities and the role of anthropogenic resources.

Department of Natural Resources Seminar Series, Cornell University. 2014. Altered species interactions in cities and the role of anthropogenic resources.

Programa de Ciencias Ambientales, Universidad de Ciencias Aplicadas y Ambientales, UDCA, Bogota, Colombia. 2014. Respuesta de la aves a la urbanización: mecanismos, demografícos y de comportamiento. (Invited and funded by the The Colombian Institute for Education Funding and Study Abroad; ICETEX)

Environmental Lecture Series, Ashland University. 2014. The intersection of coffee, communities, and conservation in Latin America.

Center for Ecology's Distinguished Speaker Series, Southern Illinois University. 2013. Altered species interactions in cities and the role of human inputs.

Department of Ecology and Evolutionary Biology, Cornell University. 2013. Anthropogenic inputs and consequences to bird-plant-predator interactions.

Distinguished Ecologist Lecture Series, School of Forest Resources and Environmental Sciences, Michigan Tech University. 2013. Anthropogenic inputs and consequences to bird-plant-predator interactions.

Program in Ecology, Evolution, and Conservation Biology, University of Illinois. 2013. Behavioral and population processes shaping bird communities in an urbanizing world.

Department of Natural Resources and Environment, University of Michigan. 2013. Behavioral and population processes shaping bird communities in an urbanizing world.

XXI Congreso Español y V Ibérico de Ornitología, 2012. Plenary: Demographic and behavioural drivers of avian responses to urbanization.

Center for Urban Environmental Research, University of Maryland, Baltimore. 2012. Linking pattern and process: behavioral and demographic drivers of avian responses to urbanization.

School of Environment and Natural Resources, The Ohio State University. 2012. High life in the city? Behavioral and population processes shaping avian conservation in an urbanizing world.

Integrative Ecology Group, Doñana Biological Station – CSIC, Sevilla, Spain. 2012. Demographic and behavioral drivers of avian responses to urbanization.

Department of Ecology, Evolution, and Conservation Biology, University of Nevada – Reno. 2011. Demographic and behavioral mechanisms that drive urban-associated changes in bird communities.

Department of Biology, Texas Tech University. 2011. Demographic and behavioral mechanisms that drive urban-associated changes in bird communities.

Department of Biological Sciences, Western Michigan University. 2011. Theodosia Hamilton Hadley Lecture in Ornithology - A bird's eye view of the city: Bird conservation in an urbanizing world.

Department of Biology, Case Western Reserve University, 2011. Understanding demographic and behavioral mechanisms that drive avian responses to urbanization.

Stone Laboratory, Ohio Sea Grant and Ohio State University, 2011. Bird conservation in an urbanizing world: are we winging it?

Department of Biological Sciences, Kansas State University, 2009. Understanding mechanisms that guide avian community responses to urbanization.

Universidad Nacional de Colombia, Medellin, Colombia, 2008. Mecanismos que determinan las respuestas de las aves a la urbanización.

Department of Natural Resources Conservation, University of Massachusetts – Amherst, 2008. Understanding mechanisms that guide avian community responses to urbanization.

Department of City and Regional Planning, The Ohio State University, 2008. Urban Flight: Understanding avian responses to urbanization.

Stone Laboratory Biological Field Station, The Ohio State University, 2007. A bird of two worlds: the challenge of conserving the Cerulean Warbler.

Department of Horticulture and Crop Science, The Ohio State University. 2006. Plant-mediated nest predation: can exotic plants thwart our efforts to conserve birds?

School of Natural Resources, University of Arizona. 2005. The importance of land uses within the landscape matrix: lessons from forested and fragmented landscapes. Invited as participant in series, "A Showcase of Promising Scientists in Natural Resources".

Department of Biological Sciences, University of Pittsburgh - Pymatuning Laboratory of Ecology. 2005. Conserving riparian forests in urbanizing landscapes.

Department of Natural Resources, Purdue University. 2005. The importance of shrubland habitat to early- and late-successional forest birds.

Ohio State University Research Foundation, The Ohio State University. 2005. Conserving Ohio's riparian forests: lessons from the birds.

Institute of Ecology, Department of the Sciences, The University of the Andes, Merida, Venezuela. 2005. La importancia de la matriz del paisaje para la avifauna del bosque.(The importance of the landscape matrix to forest bird communities).

Department of Zoology, Oklahoma State University. 2004. Avian community responses to an ever-changing landscape matrix.

Women in Science and Engineering (WISE) Institute, The Pennsylvania State University. 2004. How the WISE Institute helps to facilitate careers of women in science.

Department of Biological Sciences, University of Arkansas. 2003. The importance of the landscape matrix: lessons from forested and fragmented landscapes.

School of Natural Resources, The Ohio State University. 2003. The importance of land uses within the landscape matrix.

Department of Evolution, Ecology, and Organismal Biology, The Ohio State University. 2001. Influence of landscape composition on forest bird communities.

Annual Meeting of the Pennsylvania Society of Ornithology. 2001. Forested landscapes of Pennsylvania: the impacts of land uses on birds.

ROUNDTABLE DISCUSSION:

Rodewald, A.D., P.P. Marra, K.L. Evans, L. Conole, and C.Suertegaray Fontana. 2010. Frontiers in urban ecology: moving from pattern to process. Organizers/Facilitators of a Roundtable Discussion Group at International Ornithological Congress, Brazil.

SCIENTIFIC PRESENTATIONS:

1. Rodewald, AD. 2016. Socioecological drivers of urban bird communities: trait and density-mediated consequences of human inputs. North American Ornithological Conference (NAOC) IV. Washington, DC. (invited for symposium)

2. Rodewald, AD. 2016. Causes & consequences of the urban phenotype. North American Ornithological Conference (NAOC) IV. Washington, DC.

3. Sevillano, C.S. and A.D. Rodewald. 2016. Diversity, Ecology, and Conservation of Bird Communities of Polylepis Woodlands in the Northern Andes of Peru. North American Ornithological Conference (NAOC) IV. Washington, DC.

4. Arcese, P., R. Schuster, E. Kleynhans, A.Rodewald, S. Wilson. 2016. Climate, land use and life history drivers of population growth and distribution and their application to conservation prioritization. North American Ornithological Conference (NAOC) IV. Washington, DC.

5. McNeil, D. J., A. D. Rodewald, C. J. Fiss and J. L. Larkin. 2016. From Touch-down to Take-off: Breeding Range Conservation for Golden-winged Warbler:. North American Ornithological Conference (NAOC) IV. Washington, DC.

6. Bennett, R., A.D. Rodewald, K. Rosenberg. 2016. Sexual segregation in overwintering Golden-winged Warblers (Vermivora chrysoptera) at multiple spatial scales. North American Ornithological Conference (NAOC) IV. Washington, DC.

7. Colorado, G. and AD Rodewald. 2016. Assembly patterns of mixed-species avian flocks in the Andes. North American Ornithological Conference (NAOC) IV. Washington, DC.

8. Dossman, B., C. Studds, P. Marra, A.D. Rodewald. 2016. Seasonal rainfall influences inter-and intra-seasonal territorial dynamics of a migratory bird. North American Ornithological Conference (NAOC) IV. Washington, DC.

9. Dossman, B., C. Studds, P. Marra, A.D. Rodewald. 2016. Assessing Plasticity in the Migratory Behavior of a Songbird Wintering in the Caribbean Using the Motus Wildlife Tracking System. North American Ornithological Conference (NAOC) IV. Washington, DC.

10. Gifford, G., A. Rodewald, W. Hochachka, V. Ruiz Gutierrez. 2016. Conservation value of tropical agroecosystems to migratory and resident birds in the Guatemalan HighlandsNorth American Ornithological Conference (NAOC) IV. Washington, DC.

11. Malpass, J. A. Rodewald, S. Matthews. 2016. Conserving our urban birds: Lessons from the OSU Yard Birds Project. North American Ornithological Conference (NAOC) IV. Washington, DC.

12. Swift, R., A.D. Rodewald, N. Senner. 2016. Do habitat and risk of predation explain spatial patterning of nests? North American Ornithological Conference (NAOC) IV. Washington, DC.

13. Soto, G.E., C.G. Pérez-Hernández, I.J. Hahn, A.D. Rodewald, P.M. Vergara. 2016. Tree senescence as a direct measure of habitat quality: linking red-edge vegetation indices to space use by Magellanic Woodpeckers. North American Ornithological Conference (NAOC) IV. Washington, DC.

14. Hernandez-Aguilera, J. N., M. I. Gómez, A. D. Rodewald, X. Rueda, C. Anunu, R. Bennett, R. R. Schindelbeck, H. M. van Es. 2016. Sustainable Supply Chains in high-quality coffee markets: The Relationship Coffee Model. International Sustainable Development Research Society Conference, Portugal.

15. Malpass, J.S., A.D. Rodewald. 2015. Effect of habitat and resource availability on avian nest survival in yards and adjacent forest parks. International Congress of Conservation Biology; Montpellier, France

16. McDermott, M., A.D. Rodewald, and S.Matthews. 2015. Functional traits and habitat use of Andean flocks in managed agroforestry landscapes. Neotropical Ornithological Congress, Brazil.

17. Malpass, J.S., A.D. Rodewald. 2015. Effect of anthropogenic food on predators and prey. Urban Wildlife Conference; Chicago, IL

18. Malpass, J.S., A.D. Rodewald and Kearns. 2015. Comparison of nest predator identity in forest parks and adjacent residential neighborhoods using video cameras. Ohio Fish and Wildlife Managers' Association; Columbus, OH

19. Swift, RJ, Senner, N. and AD Rodewald. 2015. Settlement Cues for Nest Placement in Hudsonian Godwits. Presentation at the Western Hemisphere Shorebird Group Meeting. Wallops Island, Virginia.

20. Malpass, J.S., A.D. Rodewald. 2014. Effects of anthropogenic subsidies on predator-prey interactions. The Wildlife Society; Winnipeg, Manitoba, Canada

21. Rodewald, A.D., RP Rohr, MA Fortuna, and J. Bascompte. 2014. Does removal of invasives restore ecological networks? An experimental approach. Annual Meeting of American Ornithologists' Union and Cooper Ornithological Society, Estes Park, CO.

22. Malpass, J.S., A.D. Rodewald, and S.N. Matthews. 2014. Effect of wildlife-friendly gardening on species interactions. Annual Meeting of Ohio Fish and Wildlife Management Association, Columbus, OH.

23. Malpass, J.S., and A.D. Rodewald. 2014. Nest survival of urban-adapted songbirds in residential yards and adjacent forest parks. Joint Meeting of American Ornithologists' Union, Cooper Ornithological Society, and Society of Canadian Ornithologists, Estes Park, CO.

24. McDermott, M.E., A.D. Rodewald, and S.N. Matthews. 2014. La contribución de sistemas agroforestales a la conservación de aves migratorias neotropicales. IV Congreso Colombiano de Zoología, Cartagena, Colombia.

25. McDermott, M.E., A.D. Rodewald, and S.N. Matthews. 2014. Conservation value of agroforestry for flocking Andean birds. Annual Meeting of the American Ornithologists' Union, Cooper Ornithological Society, and Society for Canadian Ornithology, Estes Park, CO.

26. McDermott, M.E., A.D. Rodewald, and S.N. Matthews. 2014. La contribución de sistemas agroforestales a la conservación de aves migratorias neotropicales. IV Reunión Ecuatoriana de Ornitología, Maldonado, Ecuador.

27. Malpass, J.S., A.D. Rodewald, and L.J. Kearns. 2014. Nest predator identity in forest parks and adjacent residential neighborhoods. Annual Meeting of The Wildlife Society, Pittsburgh, PA.

28. Malpass, J.S. and A.D. Rodewald. 2013. Effects of vegetation and food resources on activity patterns of nest predators. Annual Meeting of the Wildlife Society. Milwaukee, WI.

29. Malpass, J.S. and A.D. Rodewald. 2013. Influence of complex vegetation on activity of nest predators in residential yards. Meeting of the American Ornithologists' Union and Cooper Ornithological Society, Chicago, IL.

30. McDermott, M. and A.D. Rodewald. 2013. Conservation value of silvopasture and shade agroforestry to Andean forest birds. Meeting of the American Ornithologists' Union and Cooper Ornithological Society, Chicago, IL.

31. Rowse, L.M. and A.D. Rodewald. 2013. Reproductive consequences of mercury to Acadian Flycatchers in urbanizing landscapes of Ohio, USA. Meeting of the American Ornithologists' Union and Cooper Ornithological Society, Chicago, IL.

32. Rodewald, A.D. 2012. Demographic consequences of altered bird-plant networks in urbanizing landscapes. North American Ornithological Conference, Vancouver, BC, Canada.

33. McDermott, M. and A.D. Rodewald. 2012. Ecology of mixed-species flocks in shaded monocultures and silvopastures in the Colombian Andes. North American Ornithological Conference, Vancouver, BC, Canada.

34. Rowse, L. M. and A.D. Rodewald. 2012. Exposure of songbirds to heavy metal contaminants across an urban to rural landscape. North American Ornithological Conference, Vancouver, BC, Canada.

35. Malpass, J.S. and A.D. Rodewald. 2012. The influence of anthropogenic resources on nest predator activity and nest survival in suburban yards. North American Ornithological Conference, Vancouver, BC, Canada.

36. Thieme, J.L., A.D. Rodewald, and S. Gehrt. 2012. Linking grassland bird density to predator activity in urban parks. North American Ornithological Conference, Vancouver, BC, Canada.

37. Narango, D. and A.D. Rodewald. 2012. Variation in signal information within urban bird song. North American Ornithological Conference, Vancouver, BC, Canada.

38. Kearns, L.J. and A. D. Rodewald. 2012. Do patterns of nest predator activity predict nest locations and survival in urbanizing landscapes? North American Ornithological Conference, Vancouver, BC, Canada.

39. Boves, T., D. Buehler, P. Bohall Wood, A. Rodewald, J. Larkin, P. Keyser, and BT Wigley. 2012. Information content and habitat contingency of multiple plumage ornaments in a canopy-dewelling songbird, the Cerulean Warbler. North American Ornithological Conference, Vancouver, BC, Canada.

40. Kearns, L.J. and A.D. Rodewald. 2011. Incorporating predation risk into nesting decisions by an urban adapter and urban avoider. International Congress of Conservation Biology, New Zealand.

41. Larkin,J.L., P.B. Wood, T.J. Boves, J. Sheehan, D.A. Buehler, A.D. Rodewald, P.D. Keyser, T.A. Beachy, M.H. Bakermans, A. Evans, G.A. George, M.E. McDermott, F. L. Newell, K.A. Perkins, and M. White. 2011. Breeding Season Concerns and Response to Forest Management: Can forest management produce more breeding birds? Neotropical Ornithological Congress, Peru.

42. Colorado, C.J.,M. Bakermans, P. Caycedo, P. Ramoni-Perazzi, A. Rodewald, D. Mehlman, and P. Hamel. 2011. Hallazgos recientes en la ecología invernal de la reinita cerúlea (*Setophaga cerulea*) en los Andes: perspectivas, retos y oportunidades**.** Neotropical Ornithological Congress, Peru.

43. Botero,J., G. Medina, B. Smith, D. Buehler, J. Larkin, A. Rodewald, P.Wood. 2011. Integrating conservation management, species protection and economic viability into sustainable land use practices in the Andes and Appalachians. Neotropical Ornithological Congress, Peru.

44. Wood, P.B., T.J. Boves, J. Sheehan, D.A. Buehler, J.L. Larkin, A.D. Rodewald, P.D. Keyser, T.A. Beachy, M.H. Bakermans, A. Evans, G.A. George, M.E. McDermott, F. L. Newell, K.A. Perkins, and M. White, T.B. Wigley. 2011. Cerulean warbler and associated species responses to hardwood forest management. Annual Conference of The Wildlife Society. Hawaii.

45. Rodewald, A.D. 2011. Dynamic selective environments and evolutionary traps in human-dominated landscapes. 129th Stated Meeting of American Ornithologists' Union, Jackonsville, Florida.

46. Vitz, A.C. and A.D. Rodewald. 2011. Demographic and behavioral correlates of mature-forest bird use of successional habitat during the post-fledging period. 129th Stated Meeting of American Ornithologists' Union, Jackonsville, Florida.

47. McDermott, M.E. and A.D. Rodewald. 2011. Mixed-species flocks in shaded monocultures and silvopasture in the Colombian Andes. 129th Stated Meeting of American Ornithologists' Union, Jackonsville, Florida.

48. Shustack, D. P. and A.D. Rodewald. 2011. Interannual territory, mate, and nest site fidelity in Acadian Flycatcher. 129th Stated Meeting of American Ornithologists' Union, Jackonsville, Florida.

49. Faaborg, J., D. King, and A.D. Rodewald. 2011. Use of early-successional vegetation by post-breeding birds: convenience or necessity? 129th Stated Meeting of American Ornithologists' Union, Jackonsville, Florida.

50. Kearns, L. J. and A.D. Rodewald. 2011. Influence of prior fate and nest predator community on renesting decisions of multi-brooded forest songbirds. Joint Meeting of Cooper Ornithological Society/Wilson Ornithological Society/Association of Field Ornithologists in Kearney, Nebraska.

51. Thieme, J., A. D. Rodewald, and S. Gehrt. 2011. Behavioral and reproductive consequences of nest predator activity to grassland birds. Joint Meeting of Cooper Ornithological Society/Wilson Ornithological Society/Association of Field Ornithologists in Kearney, Nebraska.

52. Narango, D.L. and A.D. Rodewald. 2011. Bird song in the city: how are avian communication systems affected by urbanization? Joint Meeting of Cooper Ornithological Society/Wilson Ornithological Society/Association of Field Ornithologists in Kearney, Nebraska.

53. Boves, T. J., T.A. Beachy, P. Keyser, D.A. Buehler, P.B. Wood, J. Sheehan, J. Mizel, G. George, J.L. Larkin, A. Evans, M. White, A.D. Rodewald, M. Bakermans, F. Newell. 2011. Cerulean Warbler *Dendroica cerulea* response to forest management in the Appalachian Mountains. Joint Meeting of Cooper Ornithological Society/Wilson Ornithological Society/Association of Field Ornithologists in Kearney, Nebraska.

54. Sheehan, J., P.B. Wood, G. George, M. McDermott, J. Mizel, P. McElhone, K. Perkins, M. Shumar, D. Buehler, P. Keyser, T. Beachy, T. Boves, J. Larkin, A. Evans, M. White, A. Rodewald, M. Bakermans, F. Newell, and S. Stoleson. 2011. Avian community and species response to hardwood forest management for Cerulean Warblers. Joint Meeting of Cooper Ornithological Society/Wilson Ornithological Society/Association of Field Ornithologists in Kearney, Nebraska.

55. Newell, F.L., A.D. Rodewald, M.H. Bakermans, P.B. Wood, J. Sheehan, G.A. George, M.E. McDermott, P.M. McElhone, K.A. Perkins, M.B. Shumar, D.A. Buehler, P.D. Keyser, T.A. Beachy, T.J. Boves, J.L. Larkin, A. Evans, and M. White. A comparison of breeding density estimates from fixed-radius point counts, distance-sampling, and territory mapping for forest songbirds. Joint Meeting of Cooper Ornithological Society/Wilson Ornithological Society/Association of Field Ornithologists in Kearney, Nebraska.

56. Stoleson, S.H., J. Larkin, D. Buehler, P. Keyser, P. Hamel, A. Rodewald, and P.B. Wood. 2011. From Research to Management: Development of Best Management Practices for Cerulean Warbler. Joint Meeting of Cooper Ornithological Society/Wilson Ornithological Society/Association of Field Ornithologists in Kearney, Nebraska.

57. Rodewald, A. D., L. J. Kearns, and D. P. Shustack. 2010. Anthropogenic resources decouple predator-prey relationships. Annual Meeting of Ecological Society of America.

58. Rodewald, A. D. 2010. Understanding demographic and behavioral mechanisms that drive avian responses to urbanization. International Ornithological Congress, Brazil.

59. Colorado, G. and A. D. Rodewald. 2010. Effects of forest degradation and fragmentation on Neotropical-Nearctic migrants in the Andes. International Ornithological Congress, Brazil.

60. Colorado, G., P. Hamel, D. Mehlman, and A. D. Rodewald. 2010. Distribution and winter ecology of Cerulean Warbler in the Andes: new insights. International Ornithological Congress, Brazil.

61. Ausprey, I. and A. D. Rodewald. 2010. Are young birds city smart?: Survivorship and habitat selection of fledgling songbirds across an urban-to-rural landscape gradient. 24th International Congress for Conservation Biology.

62. Newell, F. and A. D. Rodewald. 2010. Shelterwood harvests provide suitable habitat for canopy-nesting songbirds. 24th International Congress for Conservation Biology.

63. Ausprey, I. and A. D. Rodewald. 2010. Post-fledging dispersal timing and natal home range size of two songbird species. Annual Meeting of Association of Field Ornithologists.

64. Newell, F. and A. D. Rodewald. 2010. Role of topography, canopy structure, and floristics in nest-site selection and nesting success of canopy songbirds. Annual Meeting of Association of Field Ornithologists.

65. Shustack, D. P. and A. D. Rodewald. 2010. Nest predation reduces benefits to early clutch initiation in an urbanizing landscape. Meeting of Wilson Ornithological Society.

66. Kearns, L. J. and A.D. Rodewald. 2010. Does prior experience influence nest-site selection of songbirds within a single season? Annual Meeting of American Ornithologists' Union.

67. Kearns, L. J. and A.D. Rodewald. 2009. Landscapes of risk for nesting songbirds: Does spatial variation in predator activity predict nest success? Annual Meeting of The Wildlife Society.

68. Rodewald, A.D., Kearns, L. J., and Shustack, D. P. 2009. Urbanization does not reduce nest success of forest birds. Annual Meeting of American Ornithologists' Union.

69. Boves, T., D. Buehler, T. Beachy, P. Wood, G. George, J. Sheehan, A. Rodewald, F. Newell, M. Bakermans, J. Larkin, and A. Evans. 2009. Effects of forest management on density and reproductive success of Cerulean Warblers in the Appalachian Mountains. Annual Meeting of American Ornithologists' Union.

70. Ausprey, I. and A.D. Rodewald. 2009. Post-fledging survivorship in an urbanizing landscape. Joint Meeting of Wilson Ornithological Society and Association of Field Ornithologists.

71. Newell, F.L. and A.D. Rodewald. 2009. A bird's eye view of forest canopy structure: how does canopy openness affect canopy-nesting species. Joint Meeting of Wilson Ornithological Society and Association of Field Ornithologists.

72. Kearns, L.J. and A.D. Rodewald. 2009. Associations between activity levels of nest predators and songbird nest placement in riparian forests. Joint Meeting of Wilson Ornithological Society and Association of Field Ornithologists.

73. Rodewald, A.D., Bakermans, M. H., Rengifo, C. 2008. Winter ecology and survival of Cerulean Warbler in coffee plantations in Venezuela. Congress on Conservation Planning for Migratory and Resident Birds of the Northern Andes, Colombia. [Invited]

74. Colorado, G., P.B. Hamel, D. Mehlman, and A. Rodewald. 2008. Distribution and ecology of Cerulean Warbler in the Andes: New insights. Congress on Conservation Planning for Migratory and Resident Birds of the Northern Andes, Colombia. [Invited]

75. Boves, T., T. Beachy, D. Buehler, J. Larkin, M. White, A. Evans, P. Wood, G. George, M. McDermott, P. McElhone, J. Sheehan, M. Shumar, A. Rodewald, F. Newell, and M. Bakermans. 2008. Effects of forest management on Cerulean Warblers in the Appalachian Mountains. Congress on Conservation Planning for Migratory and Resident Birds of the Northern Andes, Colombia. [Invited]

76. Kearns, L. J. and A. D. Rodewald. 2008. Exploring disconnects between avian nest predators and predation across an urban land use gradient. Midwest Fish and Wildlife Conference.

77. Ausprey, I. J. and A. D. Rodewald. 2008. Post-fledging survivorship across an urbanizing landscape. Midwest Fish and Wildlife Conference.

78. Rodewald, A.D. 2008. Exotic shrubs as ephemeral ecological traps for nesting birds. Meeting of the American Ornithologists' Union.

79. Bakermans, M. H. and A. D. Rodewald. 2008. Steady-state forest conditions and Cerulean Warblers. Meeting of the American Ornithologists' Union.

80. Shustack, D. P. and A. D. Rodewald. 2008. Are urban forests underutilized by migratory bird species? Meeting of the American Ornithologists' Union.

81. Kearns, L. J. and A. D. Rodewald. 2008. Nest predator communities in forest fragments across a rural-urban gradient. Meeting of the American Ornithologists' Union.

82. Lehnen, S. E. and A. D. Rodewald. 2008. Nest survival, settling patterns, and territory distribution in relation to edge habitat in a shrubland bird community. Meeting of the American Ornithologists' Union.

83. Colorado, G., P. Hamel, D. Melhman, and A. D. Rodewald. 2008. Ecology and distribution of Cerulean Warblers in the Northern Andes: new insights. Meeting of the American Ornithologists' Union.

84. Rodewald, A. D. 2008. Making way for birdies: avian conservation on golf courses. World Scientific Congress of Golf [Invited Symposium Presentation].

85. Shustack, D. P., A. D. Rodewald, and T. A. Waite. 2008. Advanced green-up in urban forests: compositional differences or intraspecific variation? Ohio Natural History Conference.

86. Rodewald, A. D., M. H. Bakermans, and T. Will. 2007. Connecting breeding and non-breeding seasons: Cerulean Warbler and El Grupo Cerúleo. Midwest Fish and Wildlife Conference. [Invited Symposium Presentation]

87. Graves, B., A. D. Rodewald, and S. Hull. 2007. Grassland bird conservation on reclaimed surface mines: evaluating the influence of vegetation structure on distribution, nest placement and nesting success. Midwest Fish and Wildlife Conference.

88. Rodewald, A. D. and D. P. Shustack. 2007. Urban flight: understanding individual and population-level responses of Nearctic-Neotropical migratory birds to urbanization. Meeting of the American Ornithologists' Union.

89. Bakermans, M. H. and A. D. Rodewald. 2007. Cerulean Warblers in Venezuelan shade coffee plantations and primary forests. Meeting of the American Ornithologists' Union.

90. Lehnen, S. E. and A. D. Rodewald. 2007. The importance of patch area to shrubland birds Meeting of the American Ornithologists' Union.

91. Smith, J.A. and A. D. Rodewald. 2007. Impacts of human recreational disturbance on nest success: Do trail users influence nest predation? Meeting of the American Ornithologists' Union.

92. Vitz, A. C. and A. D. Rodewald. 2007. Does Habitat Use Influence Survival of Post-fledging Mature-forest Birds? Meeting of the American Ornithologists' Union.

93. Seger, K., A. D. Rodewald, and J. Soha. 2007. Effects of urban noise on avian song. XXI International Bio-Acoustic Council International Congress, Italy. (Kerri Seger is an undergraduate honors student with me).

94. Rodewald, A. D. and D. P. Shustack. 2007. Urban flight: understanding individual and population-level responses of Nearctic-Neotropical migratory birds to urbanization. Meeting of The Wildlife Society.

95. Graves, B. and A. D. Rodewald. 2007. Effect of woody encroachment and vegetative structure on density and nest success of grassland birds on reclaimed surface-mined lands in eastern Ohio. Meeting of The Wildlife Society.

96. Shustack, D. P. and A. D. Rodewald. 2007. Why are there lower densities of migrant songbirds in urban forests? A modeling approach. Meeting of The Wildlife Society .

97. Shustack, D. P. and A. D. Rodewald. 2007. The urban heat island and vegetation phenology. Natural Areas Association Conference.

98. Smith, J. A. and A. D. Rodewald. 2007. Impacts of human recreational disturbance on nest success: Do trail users influence nest predation? Midwest Ecology and Evolution Conference.

99. Lehnen, S. E. and A. D. Rodewald. 2007. Patterns of habitat edge usage by shrubland songbirds in southeastern Ohio. Ohio Fish and Wildlife Conference.

100. Rodewald, A. D., A. C. Vitz, M. H. Bakermans, and S. E. Lehnen. 2006. Balancing needs of early- and late-successional birds in forested landscapes. Annual Meeting of Society of American Foresters. Pittsburgh, Pennsylvania.

101. Graves, B., A. D. Rodewald, and S. Hull. 2006. Nest survival analysis of grassland birds on reclaimed surface-mines in eastern Ohio. Midwest Fish and Wildlife Conference. (Best Student Poster Award)

102. Rodewald, A. D. 2006. Towards a mechanistic understanding of urban-associated changes in bird communities. North American Ornithological Conference, Veracruz, Mexico. (Invited symposium paper)

103. Shustack, D.P. and A. D. Rodewald. 2006. Reproductive timing of resident and migrant songbirds across an urban to rural gradient in central Ohio, USA. North American Ornithological Conference, Veracruz, Mexico.

104. Vitz, A. C. and A. D. Rodewald. 2006. Habitat use and survivorship of post-fledging mature-forest birds. North American Ornithological Conference, Veracruz, Mexico. (Honorable Mention for Best Student Paper).

105. Bakermans, M. H. and A. D. Rodewald. 2006. Population ecology of Cerulean Warblers on breeding and wintering grounds. North American Ornithological Conference, Veracruz, Mexico.

106. Lehnen, S. E. and A. D. Rodewald. 2006. Possible avoidance of transitional edge habitat by shrubland birds in southeastern Ohio. North American Ornithological Conference, Veracruz, Mexico.

107. Barker, S., K. V. Rosenberg, D. A. Buehler, P. B. Hammel, K. Islam, J. Jones, A. D. Rodewald, P. B. Wood. 2006. Cerulean Warbler population status, breeding habitats, and demographics. North American Ornithological Conference, Veracruz, Mexico. (Invited symposium paper)

108. Hamel, P., D. Mehlman, P. Ramoni-Perazzi, G. Colorado, T. Cuadros, J. Jones, S. Herzog, M. Moreno, M. Bakermans, M. Lentino, D. Diaz, P., Salaman, K. Girvan, A. Rodewald, D. Cisneros-Heredia. 2006. What do we know about non-breeding habitats of Cerulean Warblers? North American Ornithological Conference, Veracruz, Mexico. (Invited symposium paper)

109. Colorado, G., T. Cuadros, P. Hamel, D. Mehlman, M. Bakermans, A. Rodewald, P. Ramoni-Perazzi, J. Jones, D. Calderon, M. Moreno, and C. Rengifo. 2006. Habitat use by Cerulean Warbler (*Dendroica cerulea*) in agroecosystems in the Northern Andes. North American Ornithological Conference, Veracruz, Mexico. (Invited symposium paper)

110. Shustack, D. P. and A. D. Rodewald. 2006. Attenuated nesting seasons in urban forests: an overlooked consequence of urbanization? Ohio Fish and Wildlife Management Conference.

111. Bakermans, M. H. and A. D. Rodewald. 2005. Nest predation in forested landscapes: edge or landscape effects? Annual Meeting of The Wildlife Society.

112. King, D. I., A. D. Rodewald, R. Chandler, A. C. Vitz. 2005. Edge and area effects on shrubland birds. Annual Meeting of The Wildlife Society. [Part of Symposium that I co-organized]

113. Leston, L. and A. D. Rodewald. 2005. Are urban forests ecological traps for understory birds? Annual Meeting of The Wildlife Society.

114. Shustack, D.P. and A. D. Rodewald. 2005. Attenuated nesting seasons in urban forests: an overlooked consequence of urbanization? Annual Meeting of The Wildlife Society.

115. Vitz, A. C. and A. D. Rodewald. 2005. Post-fledging ecology of mature-forest birds. Annual Meeting of The Wildlife Society.

116. Leston, L. and A. D. Rodewald. 2005. Habitat selection by Northern Cardinals in urban and rural riparian forests. Annual Meeting of Wilson Ornithological Society and Association of Field Ornithologists.

117. Rodewald, A. D. and A. C. Vitz. 2005. Edge and area sensitivity of shrubland birds. Ohio Fish and Wildlife Management Conference.

118. Leston, L. and A. D. Rodewald. 2005. Habitat selection by Northern Cardinals in urban and rural riparian forests. Ohio Fish and Wildlife Management Conference.

119. Vitz, A. C. and A. D. Rodewald. 2005. Post-breeding ecology of mature forest birds. Ohio Fish and Wildlife Management Conference.

120. Bakermans, M. H. and A. D Rodewald. 2005. Multiscale habitat selection of Acadian Flycatchers. Ohio Fish and Wildlife Management Conference.

121. Rodewald, A. D. and A. C. Vitz. 2004. Edge and area sensitivity of shrubland birds. Midwest Fish and Wildlife Conference.

122. Leston, L. and A. D. Rodewald. 2004. Habitat selection by Northern Cardinals in urban and rural riparian forests. Midwest Fish and Wildlife Conference.

123. Rodewald, A. D. and A. C. Vitz. 2004. Edge and area sensitivity of shrubland birds. 122st Stated Meeting of the American Ornithologists' Union.

124. Leston, L. and A. D. Rodewald. 2004. Habitat selection by Northern Cardinals in urban and rural riparian forests. Annual Meeting of Wilson Ornithological Society and Association of Field Ornithologists.

125. Rodewald, A. D. 2003. Multiscale influences of landscape matrix composition on bird communities within forested landscapes. Annual Meeting of The Wildlife Society.

126. Vitz, A. C. and A. D. Rodewald. 2003. Post-breeding ecology of mature forest birds. 121st Stated Meeting of the American Ornithologists' Union.

127. Atchison, K. A. and A. D. Rodewald. 2003. Influence of landscape matrix, microclimate, and habitat on wintering birds in riparian forests. 121st Stated Meeting of the American Ornithologists' Union.

128. Santiago, M. J., A. D. Rodewald, and P. G. Rodewald. 2003. Suitability of golf courses as breeding habitat for Red-headed Woodpecker. 121st Stated Meeting of the American Ornithologists' Union.

129. Vitz, A. C. and A. D. Rodewald. 2003. Post-breeding use of regenerating clearcuts by mature forest birds. Cooper Ornithological Society Meeting.

130. Atchison, K. A. and A. D. Rodewald. 2003. Influence of landscape matrix, microclimate, and habitat on wintering birds in riparian forests. Annual Meetings of Wilson Ornithological Society and American Field Ornithologists.

131. Bakermans, M H. and A. D. Rodewald. 2003. Underlying mechanisms of landscape sensitivity in Acadian Flycatchers. Annual Meetings of Wilson Ornithological Society and American Field Ornithologists.

132. Vitz, A. C. and A. D. Rodewald. 2003. Post-breeding use of regenerating clearcuts by mature forest birds. Annual Meetings of Wilson Ornithological Society and American Field Ornithologists.

133. Atchison, K. A. and A. D. Rodewald. 2003. Influence of landscape matrix, microclimate, and habitat on wintering birds in riparian forests. Ohio Fish and Wildlife Management Conference.

134. Atchison, K. A. and A. D. Rodewald. 2002. Influence of landscape matrix, microclimate, and habitat on wintering birds in riparian forests. North American Ornithological Conference.

135. Bakermans, M. H. and A. D. Rodewald. 2002. Acadian Flycatchers in Midwestern riparian forests - local and landscape-level patterns. North American Ornithological Conference.

136. Borgmann, K. L. and A. D. Rodewald. 2002. Landscape-mediated invasion by exotic shrubs: effects on breeding birds. North American Ornithological Conference.

137. Borgmann, K. L. and A. D. Rodewald. 2002. Influence of landscape context on the amount of exotic shrub cover in riparian forests: implications for breeding birds. Annual Meetings of Wilson Ornithological Society and American Field Ornithologists. [received Best Student Paper Award]

138. Bakermans, M. J. and A. D. Rodewald. 2002. Local and landscape effects on Acadian Flycatchers in riparian forests. Annual Meetings of Wilson Ornithological Society and American Field Ornithologists.

139. Rodewald, A.D. 2001. Multiscale effects on avian nesting success in forested landscapes. Annual Meeting of The Wildlife Society.

140. Rodewald, A. D. 2001. Floristics and avian community structure: implications for regional changes in forest composition. 119th Stated Meeting of the American Ornithologists' Union and the Society of Canadian Ornithologists.

141. Rodewald, A. D. 2001. Avian nesting success in forested landscapes: local vs. landscape effects. 57th Northeast Fish and Wildlife Conference.

142. Rodewald, A. D. 2001. Floristics and avian community structure: implications for regional changes in forest composition. Ohio Fish and Wildlife Conference.

143. Rodewald, A. D. and R. H. Yahner. 2000. Avian nesting success in forested landscapes: the influence of landscape composition, local habitat, and biotic interactions. 118th Stated Meeting of the American Ornithologists' Union.

144. Rodewald, A. D. and R. H. Yahner. 1999. Influence of landscape composition on forest birds. Annual Meeting of The Wildlife Society.

145. Rodewald, A. D. and R. H. Yahner. 1999. Effects of landscape composition on forest birds and associated mechanisms. 117th Stated Meeting of the American Ornithologists' Union.

146. Rodewald, A. D. and R. H. Yahner. 1999. Effects of a new forest-management practice and landscape composition on woodland salamander communities. Joint Meeting of the American Society of Ichthyologists and Herpetologists, American Elasmobranch Society, Herpetologists' League, and Society for the Study of Amphibians and Reptiles.

147. Rodewald, A. D. and R. H. Yahner. 1998. Influence of adjacent habitat disturbance on forest birds. Annual Meeting of The Wildlife Society.

148. Rodewald, A. D. and R. H. Yahner. 1998. Influence of adjacent habitat disturbance on forest birds. North American Ornithological Conference.

149. Dumin, A. [Rodewald] 1994. Effects of gravidity on habitat use and antipredator behavior in threespine stickleback Conference on Ecological and Evolutionary Ethology of Fishes.

150. Dumin, A. [Rodewald]. 1994. Effects of gravidity on habitat use and antipredator behavior in threespine stickleback. Animal Behavior Society Meetings.

TEACHING

PHILOSOPHY:

I have been teaching at the university level since I first entered graduate school in 1993. Both my philosophy and approach continue to evolve as I develop as an educator. Over time, I have shifted my view from a teaching-focused to a learning-focused perspective. I understand that as an educator I must facilitate student learning by (1) using a variety of teaching techniques in order to engage students with different learning styles, (2) working actively and collaboratively with students both within and outside of the classroom, (3) instilling enthusiasm and the desire to learn in students through my own example, (4) creating a sense of community within the classroom that encourages open dialogue and learning, (5) promoting critical thinking and analysis through problem-solving and experiential learning activities, (6) stimulating self-discovery and reflection related to contemporary ecological and environmental issues, and (7) mentoring students in their professional aspirations.

COURSES TAUGHT:

Undergraduate courses

Introduction to Conservation Biology. NTRES/EEB 2670. Biological, ecological, evolutionary, and social science principles that guide the conservation of biological diversity. Overview of threats to biodiversity, sustainable use, habitat management, ecological restoration, reserve design, landscape ecology, consumptive and non-consumptive use, adaptive management, and species recovery.

Conservation with Communities. NTRES 4940. Integration of life sciences, social sciences, medical sciences, and the humanities to explore the concept of "One Health", the idea that the health of the environment, animals and people are all inextricably linked. The course also serves as a preparatory course for a subset of students who will be selected for international field experiences in Indonesia and Africa to work with communities to conserve endangered rhinoceroses and great apes in partnership with Ujung Kulon National Park and the Jane Goodall Institute, respectively. A fall course will bring together the engaged learning students for a seminar course with mentors and peers. Team-taught course.

Principles of wildlife ecology and management. ENR 623. Biological, ecological, and sociological concepts that serve as the foundation of wildlife management.

Research in avian ecology. ENR H231. Introduction to the scientific process and research methods as commonly applied to avian ecology studies.

*Ecology and conservation of birds (*at OSU Stone Laboratory). ENR 230. Field-based course that introduces students to avian ecology and conservation. Heavy emphasis on field identification and individual research projects.

Introduction to the study of birds (at OSU Stone Laboratory). EEOB 126. Avian evolution, biology, ecology, and conservation; research techniques used in avian studies; and identification of birds.

Introduction to forestry, fisheries, and wildlife. ENR 319. Introduction to the ecological and sociopolitical principles guiding management of fish, wildlife, and forests. Team-taught course.

Ornithology (Penn State). Avian evolution, physiology, morphology, biology, ecology, and conservation.

<u>Graduate courses</u>

Controversial Conservation Topics Seminar. NTRES 6940. The seminar focuses a suite of controversial conservation topics and we discuss and debate the different sides of the science surrounding the controversies and explore feedbacks among science, policy, management, and public perceptions. The objective of the class is to encourage students to think critically about science underlying conservation and be aware of the complex manner in which conservation issues are communicated across scientists, decision makers, and the public. The four topics are: status of global fisheries, ecosystem reference baselines, monetization of nature, and conservation triage. Team-taught course.

Drafting a conservation blueprint: approaches for regional conservation planning. ENR 899.06. Seminar exploring the conservation planning process and how that process is influenced by complex ecological and sociopolitical issues (with Dr. Deni Porej, The Nature Conservancy).

Applied ecology and environmental policy in urbanizing communities. ENR 899 (cross-listed). Addresses ecological and sociopolitical underpinnings of urban environmental policy and planning through a combination of lectures, discussions, and group projects. (with Dr. Andrew Keeler, John Glenn School of Public Affairs, Dr. Maria Manta-Conroy, City and Regional Planning). Team-taught course with group projects.

Managing wildlife metapopulations. ENR 894. Seminar focusing on the application of metapopulation and landscape ecology theory to wildlife management (with Dr. Scott Hull, Ohio Div of Wildlife).

Readings in landscape ecology. ENR 894. Principles, methods, and applications of landscape ecology as related to wildlife conservation.

Advanced wildlife ecology. ENR 894. Concepts in population, community, and landscape ecology related to wildlife conservation and management.

Graduate research colloquium. ENR 897. Forum to present graduate research proposals.

Research in natural resources. ENR 800. Seminar to introduce new graduate students to scholarship and research practices.

Sustaining natural resources in a world of six billion (Penn State). Issues associated with natural resource management and agricultural sustainability with an ever-increasing human population (with Dr. Larry Nielsen and Dr. Nancy Ostiguy).

Laboratories

Principles of Wildlife Management, PSU
Wildlife Population Dynamics, PSU
General Biology, UA
General Ecology, UA

Global Online Course

- Lecture for *Environmental Education: Trans-disciplinary Approaches to Addressing Wicked Problems* (http://www.globalee.net/). 3300 enrolled. Spring 2016.

First-year Experience Seminars

- Birds & Beans: How your consumer choices about coffee affect bird conservation. 2010.

Non-university short courses or workshops for K-12 students

- Neotropical migratory birds, COSI Electronic Experts broadcast to schools across Ohio, 2004-2006.
- Techniques in wildlife research, WISE (Women in Science and Engineering) Camp at The Wilds.
- Population ecology, "*Expanding Your Horizons*" Conference for 7th-9th grade girls.
- Research approaches in wildlife ecology, Nittany Science Camp for Girls.

Courses for Professionals and Managers

- Coinstructor for *Curso Internacional de Campo: Ecología de Aves Migratorias Neotropicales* in San Vicente de Chucurí, Santander – Colombia from October 2008.
- Coinstructor, *Wildlife habitat management on golf courses*, Invited full-day workshop at Annual Conference of Golf Course Superintendents Association of America (GCSAA), New Orleans, 2009.
- Coinstructor, *Wildlife habitat management on golf courses*, Invited full-day workshop at Annual Conference of Golf Course Superintendents Association of America (GCSAA), San Diego, 2010.

ADVISING:

Completed (18 MS, 8 PhD)

1. Kathi L. Borgmann, M.S. in Natural Resources. Fall 2002. Invasion of riparian forests by exotic shrubs: effects of landscape matrix and implications for breeding birds.
2. Marja H. Bakermans, M.S. in Natural Resources. Winter 2003. Hierarchical habitat selection in the Acadian Flycatcher: implications for conservation of riparian forests.
3. Kelly A. Atchison, M.S. in Environmental Science. Summer 2003. Community structure and behavior of wintering birds in riparian forests: relationships with landscape matrix, microclimate, and local habitat.
4. Andrew Vitz, M.S. in Natural Resources. Fall 2003. Habitat use of regenerating clearcuts by mature-forest birds during the post-breeding period.
5. Melissa J. Santiago, M.S. in Natural Resources. Winter 2004. Golf courses as habitat for an oak-savanna specialist: the Red-headed Woodpecker.
6. Lionel Leston, M.S. in Natural Resources. Summer 2005. Are urban riparian forests ecological traps for understory birds? Habitat selection by Northern Cardinals (Cardinalis cardinalis) in urbanizing landscapes.
7. Nancy Sundell-Turner, M.S. in Natural Resources. Fall 2006. Strategies to optimize conservation planning in urbanizing landscapes.

8. Bret Graves, M.S. in Natural Resources. Summer 2007. Grassland bird conservation on reclaimed surface mines: evaluating the influence of vegetation structure on distribution, nest placement, and nesting success.
9. Jennifer Smith-Castro, M.S. in Natural Resources. Winter 2008. Impacts of recreational trails on breeding birds in forested urban parks.
10. Marja Bakermans, Ph.D. in Natural Resources. Spring 2008. Demography and habitat use of Cerulean Warblers on breeding and wintering grounds.
11. Sarah Lehnen, Ph.D. in Natural Resources. Spring 2008. An evaluation of survivorship and habitat use of early-successional birds during the breeding season: implications for conservation.
12. Andrew Vitz, Ph.D. in Natural Resources. Spring 2008. Survivorship, habitat use, and movements for two species of mature forest birds during the post-fledging period.
13. Daniel P. Shustack, Ph.D. in Natural Resources. Summer 2008. Reproductive timing of passerines in urbanizing landscapes.
14. Felicity Newell, M.S. in Environment & Natural Resources. Spring 2010. A bird's eye view of the forest: how does canopy openness affect canopy songbirds?
15. Ian Ausprey, M.S. in Environment & Natural Resources. Spring 2010. Post-fledging ecology of two songbird species across a rural-to-urban landscape gradient.
16. Gabriel Colorado, Ph.D. in Environment & Natural Resources. Fall 2010. Ecology and conservation of Neotropical-Nearctic migratory birds and mixed-species flocks in the Andes.
17. Jennifer Thieme, M.S. in Environment & Natural Resources. Summer 2011. Behavioral and reproductive consequences of predator activity to grassland birds.
18. Benjamin Padilla, M.S. in Environment & Natural Resources. Avian metapopulations in an urbanizing landscape. Spring 2012.
19. Desiree Narango, M.S. in Environment & Natural Resources. Causes and consequences of urban-associated song variation: a study of vocal behavior in the Northern Cardinal (*Cardinalis cardinalis*) Spring 2012.
20. Laura Kearns, Ph.D. in Environment & Natural Resources. Avian responses to predator communities in fragmented, urbanizing landscapes. Spring 2012.
21. Linnea Rowse, M.S. in Environment & Natural Resources. Pathways and Consequences of Contaminant Flux to Acadian Flycatchers (*Empidonax virescens*) in Urbanizing Landscapes of Ohio, USA. Summer 2013.
22. Molly McDermott, Ph.D. in Environment & Natural Resources, Ohio State University. The Contribution of Agroforestry Systems to Bird Conservation in the Andes. Spring 2014.
23. Jennifer Malpass, Ph.D. in Environment & Natural Resources, Ohio State University. Effects of Food and Vegetation on Breeding Birds and Nest Predators in the Suburban Matrix. Fall 2015.
24. Gemara Gifford, M.S. in Natural Resources, Cornell University. Agroecosystems for communities and conservation: linking bird conservation and sustainable livelihoods in the Highlands of Guatemala. Fall 2015.
25. Rose Swift, M.S. in Natural Resources, Cornell University. Nest site selection in Hudsonian Godwits: effects of habitat and predation risk. Fall 2015.
26. Steven Sevillano. M.S. in Natural Resources, Cornell University. Diversity, ecology, and conservation of bird communities of *Polylepis* woodlands in the High Andes of Peru. Spring 2016.

Current (7 PhD)

1. Ruth Bennett, Ph.D. in Natural Resources, Cornell University
2. Rose Swift, Ph.D. in Natural Resources, Cornell University
3. Stephen Sevillano, Ph.D. in Natural Resources, Cornell University
4. DJ McNeil, PhD. in Natural Resources, Cornell University
5. Bryant Dossman, PhD. in Natural Resources, Cornell University
6. Gerardo Soto, PhD. in Natural Resources, Cornell University
7. Anna Lello-Smith, Ph.D. in Natural Resources, Cornell University

- Honors thesis advisor to 6 completed undergraduate students.
- Advisor to undergraduate wildlife majors in School of Environment and Natural Resources at Ohio State (2000-2013) and in Environmental and Sustainability Sciences at Cornell (2013 to present).
- Advisor to Ohio State Chapter of Roots and Shoots, 2004-2006.
- Co-advisor to Student Chapter of The Wildlife Society, The Ohio State University, 2001-2004.

OUTREACH AND ENGAGEMENT

PHILOSOPHY:

Conservation has been practiced for decades, yet biodiversity continues to be lost at alarming rates. Our record of conservation accomplishment lags, in part because the best science is not always applied to the problems we face. We must close the gap between science and decision-making if we are to effectively address global challenges and get the best return on our conservation investments. As an ecologist and conservation biologist, I advocate for the use of science in planning, policy, and decision-making processes, and I seek ways to engage the various players in productive discourse to promote a shared understanding of issues, problems, and solutions. My approach is to work collaboratively with decision-makers, communities of practitioners, the private sector, and the public with the goals of bringing science into the decision-making process, developing approaches that are sensitive to both social and environmental needs, and achieving mutually beneficial outcomes.

REPRESENTATIVE OUTREACH ACTIVITIES:

(>160 outreach programs and/or presentations since 2000)

Selected film and radio:

- Radical collaborations. 2017. Cornell University. https://www.youtube.com/watch?v=CvwHtI_-2pI
- Conservation Science & Shade Coffee. 2017. Cornell Lab of Ornithology. https://www.youtube.com/watch?v=b9fZRPgl0tE
- Accelerating the speed of scientific discovery! 2016. Microsoft Education https://www.youtube.com/watch?v=OHilG8DjPCY&feature=youtu.be
- Shade-Grown Coffee Sustains Songbirds and People Alike. 2016. Cornell Lab of Ornithology. Two embedded short films at https://www.allaboutbirds.org/in-colombia-shade-grown-coffee-sustains-songbirds-and-people-alike/
    - Bird Research and Shade-grown Coffee
    - Economics of Sustainable Coffee
- Conserving migratory birds. Worldview. WBEZ Chicago radio. 2016. https://www.wbez.org/shows/worldview/survival-threats-faced-by-migratory-birds/a2b5b5bf-6a16-4867-bc0d-4f21f0069668
- Birds vs. Cats. How on Earth science show, KGNU radio Boulder/Denver. 2015. http://howonearthradio.org/?s=Rodewald
- Interviews with a wide variety of media outlets, including NPR, Science, USA TODAY, Science Daily, Scientific American, National Geographic, Smithsonian Magazine, Science Times, Houston Chronicle, Columbus Dispatch, Plain Dealer, InsideClimate News, Deutsche Welle, Press Herald, Knoxville News Sentinel, Scienceline

Invited talks for general audiences:

- Coffee, Communities, and Conservation. President's Circle event at New York City Center, January 2017 (Cornell's premier fundraising event)

- Aves,Carreras Profesionales,y Conservación Workshop, NY. 2016. Café y aves: cómo el café puede contribuir a la conservación.
- BirdSleuth workshop for teachers, Jardin, Colombia. 2016. Café y aves: cómo el café puede contribuir a la conservación.
- Salish Sea Bird Symposium, 2015. *eBird as a conservation tool.*
- Lorain County High School Day at Ashland University, 2014. *Birds and beans: how your cup of coffee can make a difference.*
- Copper County Audubon Club, 2013. *A bird of two worlds: the challenge of conserving the Cerulean Warbler.*
- The Biggest Week in American Birding Festival, 2013. Evening Keynote: *Singing the blues: the plight of the Cerulean Warbler.*
- Kentucky Ornithological Society Spring Meeting, 2013. Keynote: *Singing the blues: the plight of the Cerulean Warbler.*
- Cornell Lab of Ornithology – Monday night seminar series, 2013. *A bird of two worlds: the challenge of conserving the Cerulean Warbler.*
- Holden Arboretum, Spring Scientist Series, 2011. *Fragmentation and the fate of forest interior birds: keeping a big picture perspective in a small-patch world.* (~75 attendees)
- Seventh-Annual Conservation Symposium at The Cleveland Museum of Natural History, 2010. *A bird's eye view of the city: Bird conservation in an urbanizing world.* (~200 attendees)
- Midwest Birding Symposium, 2009. S*inging the blues: the challenge of conserving the Cerulean Warbler*. (~300 attendees)
- Ohio Wildlife Diversity Conference, 2009. *Singing the blues: the plight of the Cerulean Warbler.* (~800 attendees)
- Black River Audubon Society, 2009. *A bird of two worlds: the challenge of conserving the Cerulean Warbler.*(~40 attendees)
- Columbus Natural History Society, 2008. *A bird of two worlds: the challenge of conserving the Cerulean Warbler.* (~50 attendees)
- Delaware Bird Club, 2006. *Conserving early and late successional birds in Ohio*. (~30 attendees)
- Ohio Bird Banding Association, 2006. *Balancing the needs of early and late successional birds.* (~40 attendees)
- Ohio Horticultural Society, *Wildlife-friendly gardening and landscaping.* 2005. (~30 attendees)
- Ohio Wildlife Diversity Conference, 2004. *Protecting Ohio's riparian forest wildlife.* (~500 attendees)
- Simply Living Conference, 2002 and 2001. *Go Wild: attracting birds, bees, and butterflies to your backyard.* (~100 attendees in 2002, 75 in 2001)

<u>Invited talks for regional or statewide bird conservation initiatives and efforts:</u>

- Ohio Biodiversity Conservation Partnership meeting, 2012. *Linking science and management to conserve Ohio's forest birds.* (~50 attendees)
- Ohio Ornithological Society Conservation Conference, 2007. *A bird of two worlds: the challenge of conserving the Cerulean Warbler.* (~150 attendees)
- Ohio Avian Ecology and Conservation Conference, 2007. *Towards a mechanistic understanding of urban-associated changes in bird communities.* (~200 attendees)
- Ohio Audubon Assembly, 2005. *Conserving Ohio's riparian forests: lessons from the birds.* (~200 attendees)
- Northeast Ohio Forest Bird Conservation Workshop (through Ohio BCI), 2005. *Challenges and opportunities for forest bird conservation in Northeast Ohio.* (~150 attendees)
- Ohio Bird Conservation Initiative Workshop, 2004. *Conserving Ohio's forest birds.* (~100 attendees)

- Ohio Avian Ecology and Conservation Conference, 2003. *Shrubland birds of Ohio.* (~150 attendees)
- Ohio Avian Ecology and Conservation Conference, 2001. *Influence of landscape composition, microhabitat, and biotic interactions on avian nesting success.* (~250 attendees)

Invited talks for land managers and natural resource professionals:

- Making better conservation decisions in British Columbia. Vancouver, BC. 2015. *Prioritizing conservation in the coastal Douglas fir zone: making strategic investments.*(Arcese, Schuster, &Rodewald).
- Conservation Connections Forum organized by Habitat Acquisition Trust of BC. Vancouver Island, BC. 2015. *Strategic conservation in dynamic & incentive-based systems.*
- Workshop for Cross-boundary planning for resilience & restoration of endangered oak savannah and coastal Douglas-fir forest ecosystems. Friday Harbor, WA. 2015. *eBird as a conservation tool.*
- Ohio Fish and Wildlife Presentation Series, 2014. *Managing forest birds. (*A webinar with ~40 attendees)
- Annual Meeting of Ohio Society of American Foresters, 2011. *Integrating management for oak regeneration and forest bird conservation.* (~100 attendees)
- Five Rivers Metropark Trails Symposium, 2011. *Impacts of trails on wildlife.* (~100 attendees)
- Annual Conference of Golf Course Superintendents Association of America (GCSAA), *Wildlife habitat management on golf courses,* Invited full-day workshop, San Diego, 2010. (~50 participants)
- Annual Conference of Golf Course Superintendents Association of America (GCSAA), *Wildlife habitat management on golf courses,* Invited full-day workshop, New Orleans, 2009. (~75 participants)
- Ecological Landscaping Conference, 2007. *Population and behavioral responses of birds to urbanization.* (~300 attendees)
- Midwest Deer and Turkey Biologists Meeting, 2007. *Balancing the needs of early- and late-successional species in forested landscapes.* (~75 attendees)
- Annual Meeting of Ohio Society of American Foresters, 2007. *An opportunity in disguise: can conservation of Cerulean Warblers help us to restore Appalachian oak forests?* (~100 attendees)
- Annual Meeting of Ohio Society of American Foresters, 2006. *Silvicultural impacts on forest birds.* (~75 attendees)
- Statewide conference for natural resource professionals and land managers, 2003. *Natural resource*
- *management and wildlife habitat enhancement on public open spaces* (85 paid registrants; conference organizer and presenter).
- Ohio Parks and Recreation Association, Annual Conference, 2003. *Developing and implementing wildlife habitat enhancement plans.* (workshop organizer and presenter; ~75 attendees).
- Watershed Coalitions, 2002-2004. *Riparian forest wildlife*. Various locations in Ohio. (~30-50 attendees)
- Ohio Watershed Leaders Workshop, 2003. *Riparian forest wildlife.* (~35 attendees)
- Ohio Department of Natural Resources Seminar Series, 2003. *Forest management and Ohio's wildlife.* 2003. (~25 attendees)
- Ohio Department of Natural Resources – Division of Wildlife District Meetings, 2002-2003. *Managing for riparian forest birds.* (~30-60 attendees)
- Ohio Turfgrass Foundation Conference, 2002. *Creating wildlife habitats*. (~100 attendees)

Invited talks for private forest landowners:

- Eastern Ohio Forest Wildlife Conference, *Managing for forest songbirds.* 2001-2003. (~100 attendees)

- Ohio Woodland Stewards Program, *Incorporating wildlife needs into forest management plans* and *Wildlife habitat walk*. Various locations throughout Ohio, 2000-2004. (~25-50 attendees in each program)
- Ohio Woodland Stewards Program, 2003. *Exploring your forest.* (~100 attendees)
- Annual Meeting of the Ohio Woodland Owners' Association, *Forest fragmentation and Ohio's wildlife,* 2001. (~100 attendees)
- Woodland Owners Interest Groups (located throughout Ohio), *Incorporating wildlife needs into forest management plans and Managing forest wildlife,* 2001-2003. (~25-50 attendees per program)
- Capital Live, Alabama Forest Owners' Association, Inc. Live News Conference, *How do agricultural and silvicultural openings affect forest wildlife*? 2002.

Michael S. Rolband, P.E., P.W.S., P.W.D., LEED® AP
President

Michael S. Rolband, the founder and President of Wetland Studies and Solutions, Inc. (WSSI), is a recognized leader in the natural and water resources regulatory arena, including Chesapeake Bay Preservation Act issues, Wetland Delineation, Clean Water Act Permitting, Stormwater Regulation, and Wetland and Stream Restoration Design and Banking. At the forefront of the continuing evolution of Chesapeake Bay Preservation ordinances and stormwater requirements for over two decades, Mr. Rolband brings to his clients a reputation of expertise and a strong commitment to service and excellence.

Mr. Rolband has led the firm from its roots in 1991 as a one-person wetlands consulting firm into an integrated 120+ person multi-discipline natural and cultural resource consulting firm serving private developers and public works agencies in the Virginia and Metro D.C. area. He has grown WSSI through organic growth as well as three strategic acquisitions, and in 2014 sold WSSI to The Davey Tree Expert Company, an 8600-person employee owned company, and has continued to run WSSI as a wholly owned subsidiary. He is now leading the firm's geographic expansion - opening new offices in Millersville Maryland, and Richmond and Roanoke Virginia.

Mr. Rolband was responsible for WSSI's development of the first wetlands bank in Virginia in 1994 (fourth in U.S.), the first mitigation bank to provide stream credits in Virginia (2001), the first urban stream bank in Virginia (2006 approval; 45,000 linear feet restored in Reston, Virginia to date), WSSI's office facility receiving the first LEED Gold approval in Virginia (2006), and a full-scale LID laboratory.

In the area of wetlands and stream restoration, Mr. Rolband created a research program, the Wetland Research Initiative, that has funded $3.5 million to date on grants to several universities since 2007, and created a 501(c)(3) (Resource Protection Group, Inc.) to continue this program.

Mr. Rolband's interest in stormwater management and its interaction with natural waterbodies has led to legislation, the development of the "Energy Balance" Methodology (adopted in Virginia regulations), and a permeability testing protocol now contained in the June 11, 2015 Draft of VDOT's VTM-134 Bioretention Soil Media Test.

Under his direction, WSSI has provided natural and cultural resources studies and permitting on over 7,500 projects and nearly 275,000 acres of land in the region.

Beyond the operational requirements of managing the firm, Mr. Rolband's current focus is on new stormwater regulations, the Chesapeake Bay TMDL process, local environmental ordinance and comprehensive plan changes, and compensatory mitigation project design.

Mr. Rolband has testified before the U.S. Congress, and lectured to numerous organizations on stormwater management, mitigation, wetlands and stream regulatory policy, and Chesapeake Bay Act Regulations on many occasions. In addition, Mr. Rolband was instrumental in developing Virginia's new wetlands laws in the 2000 legislative session, and was a member of the technical advisory committee that developed the subsequent regulations. As a result of his leadership, Mr. Rolband has been appointed to the following positions:

Camp William B. Snyder Committee (Boy Scouts) (2009 – 2010)
Chesapeake Bay Stakeholder Advisory Group (2015 – present)
Chesapeake Bay Local Assistance Board (1996 – 2001)
- Northern Area Review Committee
- Regulatory Committee

Chesapeake Bay Local Assistance Program, RPA Guidance Ad-Hoc Committee (2005 – 2007); Ad-Hoc Workgroup (2003 – 2004); Regulation Review Committee (1994); Regulation Study Group (1991 – 1992); and Compliance Cost Study Outside Technical Reviewer (1991)

Citizens Advisory Committee to the Chesapeake Executive Council (CEC) (1991 – 1994)
- The CEC is composed of the Governors of Maryland, Pennsylvania, and Virginia, the Mayor of Washington, D.C., the Administrator of the U.S. Environmental Protection Agency, and the Chairman of the Chesapeake Bay Commission

Commonwealth's Citizens Wetlands Advisory Committee (1999)
Cornell University Civil and Environmental Engineering Advisory Council (2001 – 2011)
11th Congressional District Environmental Advisory Committee (2009 - to Present)

Fairfax County, Adequate Outfall Advising Committee (2004 – 2006); Committee on Methods to Protect Wetlands During Implementation of Regional Storm Water Management Ponds (1992 – 1993); Storm Water Utility System Advisory Group (1996, 1999, and 2004); Low Impact Development (LID) Stakeholders Committee (2005 – 2006)

Appointed Positions (Cont'd):

Governor's Natural Resources Leadership Summit (2003 and 2006)
Loudoun County Technical Advisory Committee for Phase II WIP (2012-2013)
Northern Virginia Regional Commission – LID Manual Steering Committee (2006 – 2007)
Potomac Watershed Roundtable (2007 – Present)
Stakeholder's Forum on Federal Wetlands Mitigation: First, 1999 – D.C.; Second, 2001 – Baltimore, MD; Fifth, 2006 – D.C.
U.S. Army Corps of Engineers – Low Impact Development (LID) Stakeholder Group (2004)
Virginia Chesapeake Bay TMDL Stakeholder Advisory Group, Co-Chair of Urban Committee (2010 – 2012)
Virginia Department of Conservation and Recreation – Stormwater Management Work Group (2008 – 2009); Regulatory Advisory Panel for the Commonwealth's Stormwater Management Program Permit Regulations (Parts I, II, and III) and Chair of Quantity Control Sub-Committee (2010 – 2011); Construction General Permit regulatory Advisory Panel (2012-2013)
Virginia Department of Environmental Quality: 404 Assumption Stakeholder Group (2012; 2006-2007), Technical Advisory Committee on Virginia Water Protection Permit regulation development (2000, 2004, 2005, 2014-2015), and the Water Panel (1995), a panel with the charge to define, assess, and make recommendations for improving the permit process.
Virginia Tech Bioretention Soil Media Task Force (2016)
Virginia Tech Dept. of Crop and Soil Environmental Sciences Advisory Board (2013-present)

Legislative Experience:

Mr. Rolband has led WSSI's involvement in numerous legislative issues related to wetlands, streams, stormwater management, and the Chesapeake Bay. As a stakeholder or initiator, he is responsible for helping craft over a dozen legislative actions in Virginia's General Assembly since 1994. The most notable include:

- Elimination of Local Government Ordinance Forms for DEQ Wetlands Permits (HB 593-1994, SB 763-1995)
- Virginia's Direct Regulation of Wetlands (HB 1170-2000)
- Allowing Natural Channel Stream Design (NCSD) (HB 2464-2005)
- Adequate Outfall Exemption for NCSD (HB 684-2006)
- Location of Mitigation Banks (HB 515-2010)

Certifications:

Professional Engineer: Delaware (#15374), District of Columbia (#9779), Florida (#58408), Georgia (#PE039913), Maryland (#19044), Massachusetts (#52393), Michigan (#6201063103), New York (#069722), North Carolina (#042800), Ohio (#79474), Pennsylvania (#PE084647), Tennessee (#113671), Texas (#122624), Vermont (#6313), Virginia (#22458), and West Virginia (#15348)
Professional Wetland Scientist #000133, Society of Wetland Scientists Professional Certification Program
U.S. Army Corps of Engineers Wetland Delineator Certificate #WDP 930810070A
Professional Wetland Delineator, Commonwealth of Virginia #3402000014
LEED® Accredited Professional
National Council of Examiners for Engineering and Surveying (NCEES) Record Holder #20855

Affiliations and Memberships:

American Society of Civil Engineers, Associate Member
Association of Watershed and Stormwater Professionals
Engineers and Surveyors Institute, Member
Home Builders Association of Virginia (HBAV), Member
National Association of Home Builders, Member

Affiliations and Memberships (Cont'd):
National Association of Mitigation Banking, Founding Member
Northern Virginia Building Industry Association (NVBIA), Member
Northern Virginia Commercial Real Estate Development Association (NAIOP), Life Director
Potomac Watershed Roundtable, Member
Society of Wetland Scientists, Member
Virginia Association of Wetland Professionals, Member

Awards:

American Academy of Environmental Engineering and Science, 2015 Excellence in Environmental Engineering & Science, Grand Prize - Small Projects (DC Water, Division N) (2015)
American Council of Engineering Companies 2014 Engineering Excellence Awards- Award of National Recognition - Huntley Meadows Wetland Restoration Project, Water Resources Category (2014)
American Council of Engineering Companies of Metropolitan Washington (ACEC/MW), Engineering Excellence Honor Award - Huntley Meadows Park Wetlands Restoration Project, Water Resources Category (2014)
Best of Reston's Small Business Leader Award for Protecting Reston's Natural Resources (2010)
Boy Scouts of America National Capital Area Council's Character Counts Award (2000) and Second Century Society (2012)
Charlottesville, Virginia Waldorf Foundation's Commonwealth Environmental Leadership Award (2006)
Commonwealth of Virginia's Governor's Environmental Excellence Award (2010)
Commonwealth of Virginia's Governor's Patrick Henry Award (2001)
Engineers and Surveyors Institute, Technical Associate of the Year (1996)
Fairfax County Department of Public Works and Environmental Services Champion Award (2014)
Fairfax County Department of Public Works and Environmental Services Champion Award for Public Service in the area of Innovation (2012)
Fairfax County Department of Public Works and Environmental Services Champion Award for Public Service in the area of Innovation (2006)
Fairfax County Environmental Excellence Award, Business Category (2006)
Fairfax County Land Conservation Award, Linear Project Category: Northern Virginia Stream Restoration (2008)
Fairfax County Park Foundation Eakin Philanthropy Award (2014)
Fairfax County Resolution on the Success of the Northern Virginia Stream Restoration Bank Project (2008)
Fairfax County Land Conservation Award, Best Protected Environmentally Sensitive Site (2013)
Fairfax County Tree Conservation Award, Huntley Meadows (2014)
Greater Washington Green Business Awards; Team Member on the Design of the Fort Belvoir Military Family Housing (2008)
HBAV's Associate of the Year (2000 and 2011)
NAIOP's Member of the Year (1993, 2001, and 2010)
Northern Virginia Building Industry Association Special Chapter Service Award for Outstanding Service in Fairfax County Chesapeake Bay Ordinance Initiatives (1993)
Northern Virginia Building Industry Association Associate of the Year (2010 and 2016)
Prince William County Partners for the Potomac Stewardship Award (2006)
Reston Association's Corporate Sponsor of the Year (2006)
State of Maryland's Governor's Salute to Excellence Award for Chesapeake Bay Watershed Improvement (1994)
U.S. EPA and Low Impact Development Center, Inc.'s 2007 LID Recognition Program – Outstanding Achievement in "Built Projects – Large Scale Implementation"
Virginia Chapter of Soil and Water Conservation Society's Ecological Excellence Award for Design (2010)
Virginia Tech's Natural Resources Program National Capital Region Award (2007)
Washington SmartCEO EcoCEO Implementer Medium Winner for Integrating Innovative Green Solutions into Business (2009)

Publications:

The "Energy Balance" Method of Stormwater Management. *Stormwater Magazine*. July/August 2012. Co-authored with Frank R. Graziano.

An Urban Stream Restoration Case Study: The Northern Virginia Stream Restoration Bank. *Land and Water Magazine.* March/April 2012. Co-authored with Frank R. Graziano and Kelly L. McCutcheon

Delineations Call for Adjustment in Northeast Wetland Plant Indicator List. *National Wetlands Newsletter*. March-April 2003. Co-authored with Laura A.B. Giese, Carrie L. Williams and Antionette L. Pepin

A Comparison of Wetland Areas in Northern Virginia: National Wetland Inventory Maps versus Field Delineated Wetlands Under the 1987 Manual. 1995. *Wetland Journal*. Vol.7. No.1

Wetland Mitigation – Emerging Opportunities for Forest Landowners. *Virginia Forests.* Fall 2005. Co-authored with Laura A.B. Giese

Wetlands Banking for Sound Mitigation? Yes, Virginia. 1999. *National Wetlands Newsletter*. Vol. 21. No. 3. Co-authored with Antoinette L. Pepin, Chris Athanas, and Ineke Dickman.

Wetlands Mitigation Banking, Ch 7. *Applied Wetlands Science and Technology*. 2nd Edition. 2001. Co-authored with Ann Redmond and Tom Kelsch

Speaking Engagements:

American Law Institute Continuing Legal Education Wetlands Law and Regulation Conference, Washington, D.C., Lecturer (2012)

American Law Institute-American Bar Association Wetlands Law and Regulation Conference, Washington, D.C., Lecturer (2000, 2001, 2002, 2004, 2006, 2007, 2008)

Division of Chesapeake Bay Local Assistance, LID Case Study (2006)

Engineers & Surveyors Institute; Environmental Permitting: VPDES, Chesapeake Bay and Wetlands (sessions in 1994-2001); Chesapeake Bay Preservation Ordinance (sessions in 1994 - 2001); LID and LEED (2006, 2007, 2008); Storm Water Regulation (2012); Resource Protection Areas and Floodplains in Northern Virginia (2016); Sustainable Stormwater Regulation and Implementation (2016)

Environmental Law Institute, The Business of Mitigation – Presented to The Nature Conservancy (2008)

Fairfax County Department of Public Works and Environmental Services Leadership Learning Conference (2007)

George Mason University, Various Classes (2005 and 2007 – 2009)

Home Builders Association of Virginia Annual Meeting, Environmental Land Use: Challenging Times; Prince Georges County/National Harbor, MD (2013)

Maryland Baystat Business/Development Cabinet, Urban Implications of the Chesapeake Bay TMDL (2010)

McGuire Woods, Guest Lecturer for Continuing Legal Education Seminar on New WOTUS Rule (2015)

NAIOP – Northern Virginia, New Federal Wetland Regulations (1997, 1999, 2002); LID Case Study (2005)

NAIOP – Maryland, Chesapeake Bay TMDL Update (2010)

NAIOP/U.S. Army Corps of Engineers, The Development Process and Water Resources, Ashland, Virginia (1996)

National Mitigation & Ecosystem Banking Conference, Guest Lecturer and/or Trip Leader (1998, 1999, 2002, 2009)

Northern Virginia Chapter of the American Planning Association, Low Impact Development (LID) Design, Arlington, Virginia (2006)

Northern Virginia and Prince William Soil and Water Conservation Districts, Low Impact Development and Leadership in Energy and Environmental Design Techniques (2010)

Potomac Watershed Roundtable – Tour of Northern Virginia Stream Restoration Bank (2009); Low Impact Development and Leadership in Energy and Environmental Design Techniques (2010)

Prince William County Green Workshop, Low-Impact Development Techniques (2009)

Society of Wetland Scientists Annual Meeting, Wetland Mitigation in Practice: Lessons Learned, Salt Lake City, Utah (2010)

Transportation Research Board Annual Meeting, Guest Lecturer in Wetlands Regulation and Compliance (2002)

U.S. Army Corps of Engineers, Consultant's Perspective on Section 404; Executive Training Session: (1997 – 2002, 2013); Regulatory II-B Training Class: Alexandria, Virginia; Baltimore, Maryland;

Huntsville, Alabama; Jacksonville, Florida; Virginia Beach, Virginia; St. Louis, Missouri; and Phoenix, Arizona (1996 - 2007); Civil and Geotechnical Engineering Aspects of Wetland Mitigation Design; Norfolk, Virginia (1994)

Virginia Association of Wetland Professionals, Wetland Mitigation in Practice: Lessons Learned (2002, 2010, and 2015)

Virginia Commission on Energy and Environment, Issues with the Bay Model and Draft WIP and a Cost-Effective Solution for the Bay (2010)

Virginia Continuing Legal Education, 7th Annual Advanced Real Estate Conference, "Battle over the Bay" Point/Counterpoint (2003)

Virginia Department of Environmental Quality, Guest Lecturer at Wetlands Mitigation Compliance Training on "Wetland Mitigation: Practical Issues and Solutions" (2002 and 2008)

Virginia Joint Commission on Administrative Rules, Imperviousness and Population Increases in the Chesapeake Bay Watershed (2010)

Walsh Colucci Lubeley & Walsh PC, Guest Lecturer for Continuing Legal Education Seminar on New WOTUS Rule (2015)

Numerous law and engineering firms and land developers in Northern Virginia, Wetlands, EQC, and Chesapeake Bay Ordinances (1991 – present)

Education:

Cornell University, Ithaca, New York

Master of Business Administration (Finance) 1982
Master of Engineering (Civil) - Geotechnical Major 1981
Bachelor of Science (Civil and Environmental Engineering) 1980

Continuing Education:

Mr. Rolband maintains a comprehensive continuing education coursework portfolio including the following:

River Restoration Design Implementation, (Level V), Dave Rosgen/Wildland Hydrology
River Restoration and Natural Channel Design, (Level IV), Dave Rosgen/Wildland Hydrology
River Assessment and Monitoring, (Level III), Dave Rosgen/Wildland Hydrology
River Morphology & Application, (Level II), Dave Rosgen/Wildland Hydrology
Applied Fluvial Geomorphology, (Level I), Dave Rosgen/Wildland Hydrology
Bioretention Seminar, In-House Training Session by William Hunt (NCSU), Allen Davis (UMD), and Robert Traver (Villanova)
Composites, In-House Training Session by Bill Sipple, EPA
Delineation of Disturbed and Problem Areas, Wetland Training Institute
Design of Stormwater Control Outlets, Engineers and Surveyors Institute
Grass Identification, USDA Graduate School
HEC-1, HEC-2 and HEC-RAS, Haestad Methods
Hydric Soils, In-House Training Session by Blake Parker (SCS Retired)
Hydric Soils, NOVA Community College
Identification of Grasses, Cook College, Rutgers University
Innovative BMPs, Engineers and Surveyors Institute
Low Impact Development Applications for Water Resources Management, ASCE
Nationwide Permits, Wetland Training Institute
Plant Identification, Wetland Training Institute
Practice of Wetland Construction, Southern Tier Consulting
Spring Flower Identification, USDA Graduate School
Urban Stormwater Management/Detention Pond Design, Haestad Methods
Winter Botany, Wetland Training Institute
Wetland Construction and Restoration, Wetland Training Institute
Wetland Delineation (1987 and 1989 Manual), Wetland Training Institute
Wetland Ecology, University of North Carolina
Wetland Evaluation Technique (WET 2.1), Wetland Training Institute
Wetland Plant Field ID, NOVA Community College
Winter Plant ID, NOVA Community College

CURRICULUM VITAE

BARRY PHILIP ROSEN

25 May 2016

EDUCATION

- B.S.-Trinity College, Hartford, CT, 1965
- M.S.-University of Connecticut, 1968
- Ph.D.- University of Connecticut, 1969

PROFESSIONAL HISTORY

- Distinguished University Professor, Department of Department of Cellular Biology and Pharmacology, 2009-present, Florida International University Herbert Wertheim College of Medicine.
- Associate Dean for Basic Research and Graduate Programs, 2009-2016, Florida International University Herbert Wertheim College of Medicine.
- Distinguished Professor and Chairman, 1987-2009, Professor Emeritus, 2009-present, Department of Biochemistry and Molecular Biology, Wayne State University, School of Medicine
- Honorary Professor, 1991, Academia Sinica Institute of Zoology, State Key Laboratory of Biomembranes and Membrane Processes, Beijing, China
- Professor of Biochemistry, 1982-1987, Associate Professor of Biochemistry, 1975-1982, Assistant Professor of Biochemistry, 1972-1975, Univ. Maryland, Sch. Med.
- Visiting Professor, Department of Microbiology, Okayama University, Okayama, Japan, 3/80-6/80, 5/81-6/81
- Visiting Professor, Department of Physiology ,Yale University Medical School, New Haven, Connecticut, 9/80-5/81
- Public Health Service NIH Fellow, Cornell University, Ithaca, NY (with Leon A. Heppel), 1969-1971

MEMBERSHIPS

- American Society of Biological Chemists
- American Academy of Microbiology
- American Society for Microbiology
- American Association for the Advancement of Science
- Karmanos Comprehensive Cancer Center
- Wayne State University Academy of Scholars

REVIEW BOARDS

- Journal of Bacteriology, 1978-1989
- Journal of Bioenergetics and Biomembranes, 1987-1992
- Microbiological Reviews, 1980-1982
- National Science Foundation, Metabolic Biology Panel, 1978-1981
- Member, Cell Transport and Metabolism Research Study Committee,
- National American Heart Association, 1988-1991

- Member, Microbial Physiology and Genetics Study Section, NIH, 1991-1995
- NIH Reviewers Reserve, 1995-2005
- Canadian Foundation for Innovation, 2000- 2005
- Journal of Biochemistry, 1995-2005
- Drug Resistance Updates, 1997-2002
- Biometals, 2000-205
- Journal of Biological Chemistry, 1995-2000, 2001-2006
- Cobra NIH External Advisory Committee, University of Kansas, 2003-present
- External program reviewer, Uniformed Services University of the Health Sciences (2006), Wright State University School of Medicine (2006), Ottawa Health Research Institute (2006), Temple University (2010).
- Ad hoc Member, Microscopic Imaging Study Section, NIH, 2005
- EPA Scientific Advisory Board Arsenic Review Panel, 2005-2006.
- Ad hoc Member, Macromolecular Structure and Function Study Section A, 2007.
- Ad hoc Member, NIEHS Outstanding New Environmental Scientist (ONES) Study Section, 2008.
- External Advisory Committee, NIEHS Advanced Research Cooperation in Environmental Health Research (ARCH), Florida International Univ., 2008-2009.
- International advisory board, Center for Metalloprotein Science, University of Hong Kong, 2009-present
- International advisory board, Institute of Urban Environment, Chinese Academy of Sciences, Xiamen, China, 2008-present
- Editorial Board of Metallobiology, Royal Society of Chemistry, London, 2012-2014
- External Reviewer, FDA proposed limit for inorganic arsenic in infant rice cereal, 2015

NATIONAL OFFICES

- Vice Chairman, Physiology and Metabolism Section,
- American Society for Microbiology, 1977-1978
- Chairman, Physiology and Metabolism Section,
- American Society for Microbiology, 1978-1979
- Alternate Counselor, Physiology and Metabolism Section,
- American Society for Microbiology, 1986-88
- Counselor, Physiology and Metabolism Section,
- American Society for Microbiology, 1988-90
- International Organizing Committee, FEBS Advanced Lecture Course on Multidrug Resistance, 1997-2000
- Vice Chair, Bacterial Cell Surface Gordon Conference, 2002
- International Organizing Committee, 3rd International Conference of Comparative Physiology and Biochemistry in Africa, 2004
- Chair, Bacterial Cell Surface Gordon Conference, 2004
- International Organizing Committee, 12th International Conference on Biological Inorganic Chemistry (ICBIC), 2005

- Chair, Education Committee, American Association of Medical and Graduate Departments of Biochemistry, 2006-08
- President, American Association of Medical and Graduate Departments of Biochemistry, 2009

AWARDS

- USPHS Postdoctoral Fellowship, 1969-1971
- Basil O'Connor Awardee, March of Dimes, 1974-1976
- Maryland Distinguished Young Scientist Award, 1979
- Josiah Macy, Jr. Faculty Scholar, 1980-1981
- Fellow, American Academy of Microbiology (ASM), 1980
- Gershenson Distinguished Faculty Fellow, Wayne State University, 1997
- Outstanding Graduate Mentor Award, Wayne State University, 1999
- Academy of Scholars, Wayne State University, 2000
- NIH MERIT Award, 2005
- Lawrence Weiner Award, Wayne State University Medical Alumni, 2007
- Wayne State University Distinguished Professorship, 2007
- Florida International University Distinguished Professorship, 2014
- Fellow, American Association for the Advancement of Science (AAAS), 2014

CURRENT AND PENDING RESEARCH SUPPORT

Current:

- NIH R37 GM55425-32, *Mechanisms of arsenic transport,* Barry P. Rosen, PI, 9/1/05-8/31/16, total costs: $4,989,868 (MERIT Award).
- NIH 1R01 ES023779-01, *The human arsenic methylation pathway*, Barry P. Rosen, PI, 12/1/14-11/30/19, total costs: $1,779,771.

Pending:

- [redacted]
- [redacted]

PUBLICATIONS

1. **Rosen, B.P.**, Basic amino acid transport in *Escherichia coli*. J. Biol. Chem. **246**,3653-3662(1971).
2. **Rosen, B.P.** and Vasington, F.D., Purification and characterization of a histidine binding protein from *Salmonella typhimurium*. J. Biol. Chem. **246**,5351-5360(1971).

3. **Rosen, B.P.** and Hackette, S.L., The effects of fatty acid substitution on the release of enzymes by osmotic shock. J. Bacteriol. **110**,1181-1189(1972).
4. Furlong, C.E., Morris, R.G., Kandrach, M. and **Rosen, B.P.**, A multichambered equilibrium dialysis apparatus. Anal. Biochem. **47**,514-526(1972).
5. **Rosen, B.P.**, Basic amino transport in *Escherichia coli*. II. Purification and properties of an arginine-specific binding protein. J. Biol. Chem. **248**,1211-1218(1973).
6. **Rosen, B.P.**, Basic amino acid transport in *Escherichia coli*. III. Properties of canavanine-resistant mutants. J. Bacteriol. **116,**627-635(1973).
7. **Rosen, B.P.**, ß-Galactoside transport and proton movements in an adenosine triphosphatase deficient mutant of *Escherichia coli*. Biochem. Biophys. Research. Commun. **53**,1289-1296(1973).
8. **Rosen, B.P.**, Restoration of active transport in a Mg^{2+}-adenosine triphosphatase deficient mutant of *Escherichia coli*. J. Bacteriol. **116**,1124-1129(1973).
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BOOKS AND CHAPTERS

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INVITED PRESENTATIONS (2009-2016)

1. ***Pathways of arsenic uptake and detoxification***. Hong Kong University, 2/8-13/09.
2. ***Aquaglyceroporins: ancient channels for metalloids***. Environmental Health Research Group and the Cancer Institute, Queens University, Kingston, ON, Canada, 4/2/09.
3. ***Biotransformation of arsenic by a Yellowstone thermoacidophilic eukaryotic alga***, American Society for Microbiology Annual Meeting, Philadelphia, PA, 5/17-21/09.
4. ***Aquaglyceroporins: ancient channels for metalloids***. 2nd Georgian Bay International Conference on Bioinorganic Chemistry (CanBIC-II), Parry Sound, Ontario, Canada, 5/26-29/09.
5. ***Biotransformation of arsenic by a Yellowstone thermoacidophilic eukaryotic alga***, 10th International Conference on the Biogeochemistry of Trace Elements, Chihuahua, Mexico, 7/22-25/09.
6. ***Evolution of metal(loid) binding sites in transcriptional regulators of resistance ATPases***. Japan Biochemical Society Symposium on ATPases, Morioka, Japan, 7/ 25-30/09. Plenary Lecturer.
7. ***Structure of the ArsD arsenic chaperone***. Session chair, International Congress of Bioinorganic Chemistry (ICBIC14), Nagoya, Japan, 7/ 25-30/09.
8. ***Evolution of metal(loid) binding sites in transcriptional repressors.*** Gordon Conference on Cell Biology of Metals, Salve Regina University, Newport, RI, 08/9-14/09.

9. ***Pathways of arsenic uptake and detoxification***. Institute of Urban Environment, Chinese Academy of Sciences, Xiamen, China, 10/28/09.
10. ***Pathways of arsenic uptake and detoxification***. Institute of Eco-Environmental Sciences, Chinese Academy of Sciences, Beijin, China, 10/30/09.
11. ***Structure and function of the ArsD As(III) metallochaperone***. FASEB Conference on Transport ATPases, Snowmass, CO, 6/6 – 6/11/10.
12. ***Structure and function of the ArsD As(III) metallochaperone***. FASEB Conference on Transport ATPases, Biometals 2010, Tuscon, AZ 7/25 – 7/30/10.
13. ***Pathways of arsenic uptake and detoxification***. Department of Biological Sciences, Florida International University, 9/27/10.
14. ***ArsD: an arsenic chaperone for the As(III)-translocating ArsAB ATPase***. Department of Medical Technology, Chung Shan Medical University, Taichung, Taiwan, 10/29/10.
15. ***ArsD: an arsenic chaperone for the As(III)-translocating ArsAB ATPase..*** Department of Biology, National Sun-Yat Sen University, Kaohsiung, Taiwan, 11/01/10.
16. ***Structure and function of the ArsD As(III) metallochaperone***. AsBIC V, Kaohsiung, Taiwan, 11/3 – 11/10/10.
17. ***ArsD: an arsenic chaperone for the As(III)-translocating ArsAB ATPase***. Taiwan Medical University, 11/05/10.
18. ***Biochemistry of arsenic metabolism***. Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing, 4/2/11.
19. ***Parallel pathways of arsenic detoxification***. Institute of Urban Environment, Chinese Academy of Sciences, Xiamen, 4/7/11.
20. ***The arsenic biogeocycle: microbial pathways of metalloid transport, metabolism and detoxification.*** 11th International Conference on the Biogeochemistry of Trace Elements, Florence, Italy, 7/3 -7/11. Plenary Lecturer.
21. ***Structure and function of the As(III) S-adenosylmethionione methyltransferase***. 3rd Georgian Bay International Conference on Bioinorganic Chemistry (CanBIC-II), Parry Sound, Ontario, Canada, 5/31-6/04/11.
22. ***Pathways of antimony uptake, efflux and detoxification***. Society for Industrial Microbiology Annual Meeting, New Orleans, 7/24/28/11.
23. ***The arsenic biogeocycle: microbial pathways of metalloid transport, metabolism and detoxification.*** Institüt für Mikrobiologie, Martin Luther University, Halle, Germany, 8/19/11.
24. ***Biochemistry of antimony detoxification***. 2nd International Workshop on Antimony in the Environment, Jena, Germany, 8/21-24/11, Keynote speaker.
25. ***The arsenic biogeocycle: pathways of metalloid transport, metabolism and detoxification***. 17th Arsenic Symposium of Japan. Tsukuba, Japan, 11/19-21/11. Plenary Lecturer.
26. ***The arsenic methylation pathway.*** 95th Canadian Chemistry Conference and Exhibition, Calgary, Canada, 5/26-30/12.
27. ***The arsenic methylation pathway.*** 8th International Biometals Symposium, Brussels, Belgium in 7/15-19/12.

28. ***The arsenic methylation pathway.*** 4th International Congress on Arsenic in the Environment, *Understanding the Geological-Medical Interface of Arsenic*, Cairns, Australia, 7/22-27/12. Keynote Speaker.
29. ***The arsenic methylation pathway.*** Institute of Urban Environment, Chinese Academy of Sciences, Xiamen, China, 08/07/12.
30. ***The arsenic biogeocycle: microbial pathways of metalloid transport, metabolism and detoxification.*** Taiwan Medical University, 08/013/12.
31. ***The arsenic biogeocycle: microbial pathways of metalloid transport, metabolism and detoxification.*** Chang Gung Medical University, 08/014/12.
32. ***The arsenic methylation pathway.*** 6th Asian Biological Inorganic Chemistry Conference (AsBIC-VI), Hong Kong, 11/5-8/12.
33. ***The arsenic methylation pathway.*** 9th International Symposium on Persistent Toxic Substances (9th ISPTS), Miami, Fl, 10/23-27/12.
34. ***The arsenic methylation pathway.*** Metals Symposium, Duquesne University, Pittsburgh, PA, 12/7/12.
35. ***The arsenic biogeocycle.*** 12th International Conference on the Biogeochemistry of Trace Elements (ICOBTE). Athens, GA, 6/16-20/13.
36. ***Biochemistry and structural biology of arsenic biotransformations.*** Department of Microbiology, University of Georgia, 6/17/13.
37. ***Biochemistry and structural biology of arsenic biotransformations.*** Department of Environmental Microbiology and Biotechnology, University of Copenhagen, Denmark, 7/19/13.
38. ***Biochemistry and structural biology of arsenic biotransformations.*** 16th International Congress of Bioinorganic Chemistry (ICBIC16), Grenoble, France, 7/22-26/13.
39. ***The arsenic biogeocycle.*** 10th International Symposium on Persistent Toxic Substances (ISPTS), University of Alberta, Edmonton, Alberta, Canada, 8/13-17/13. Keynote speaker.
40. ***The arsenic biogeocycle.*** 12th International Federação das Sociedades de Biologia Experimental, Caxambu, Brazil, 8/21-24/13.
41. ***The arsenic biogeocycle.*** Departamento de Fisiologia e Biofísica, Instituto de Ciências Biológicas, Universidade Federal de Minas Gerais, Belo Horizonte, MG, Brazil, 8/15/13.
42. ***The arsenic biogeocycle.*** 21st International Symposium on Environmental Biogeochemistry (ISEB21), Wuhan, China, 10/13-18/13. Keynote speaker.
43. ***The arsenic biogeocycle.*** Institute of Urban Environment, Chinese Academy of Sciences, Xiamen, China, 10/18/13.
44. ***The arsenic biogeocycle.*** Chung Shan Medical University, Taichung, Taiwan, 10/21/13.
45. ***The arsenic biogeocycle.*** Taiwan Medical University, Taipei, Taiwan, 10/22/13.
46. ***Molecular mechanisms of arsenic biotransformations***, Department of Biochemistry, University of Miami Miller School of Medicine, 2/21/14.
47. ***Molecular mechanisms of arsenic biotransformations***, Arsenic workshop, NIEHS, 3/4/14.
48. ***The arsenic biogeocycle***. 5th International Congress on Arsenic in the Environment, Buenos Aries, Argentina, 5/12/14.

49. ***Arsenic and antibiotics***. 4th International Meeting on Pharmacy and Pharmaceutical Sciences, Istanbul, Turkey, 9/18-21/14,
50. ***Molecular mechanisms of arsenic biotransformations***, Department of Biology, Oakland University, Rochester, MI 10/7/14.
51. ***My life with arsenic***. Barry Rosen, Guest of Honor, 70th Birthday symposium, Institute of Urban Environment, Chinese Academy of Sciences, Xiamen, China, 12/3/5/14.
52. ***Pathways of organoarsenic biosynthesis and detoxification.*** 13th International Conference on the Biogeochemistry of Trace Elements (ICOBTE). Fukoaka, Japan, 7/12-18/15.
53. ***Pathways of organoarsenic biosynthesis and detoxification.*** 1st Annual Meeting of the Argentine Society for Biochemistry and Molecular Biology. Mar del Plata, Argentina, 11/3-8/15.
54. ***Pathways of organoarsenic biosynthesis and detoxification.*** Department of Biochemistry, Dartmouth University, 5/7/16.
55. **The mechanism of human arsenic methylation**. 6th International Congress on Arsenic in the Environment, Stockholm, Sweden, 6/19-23/16. Plenary lecturer.

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  - Budget Committee

At Wayne State University:

- Chairman, Basic Science Chairmen Group, 1989-90
- Medical Student Promotions Review Committee, 1987-89, 93-94
- Review Committee, ACS Institutional Grants, 1989, 1990

- Department of Psychiatry Internal Review Committee, 1990
- Steering Committee, Program in Molecular Oncology, 1990-1991
- Review Committee, Molecular Oncology Seed Grants, 1990-1991
- Cancer Institute Program Advisory Committee, 1990-1991
- Dean's Committee, Veterans Affairs Medical Center, 1990-1994
- Liaison Committee on Medical Education Review Committee, 1991
- Internal Review Committee, Department of Surgery, 1992
- Internal Review Committee, Department of Internal Medicine, 1992
- Chairman, Internal Review Committee, Department of Biology, 1992
- Research Committee, Department of Internal Medicine, 1992-1994
- AIDS Research Advisory Committee, School of Medicine, 1992-1994
- Strategic Planning Committee, School of Medicine, 1994
- Department of Physiology, Review Advisory Panel, 1994
- Department of Neurology, Review Advisory Panel, 1996
- Department of Surgery, Review Advisory Panel, 1998
- Research Committee, Veterans Affairs Medical Center, 1997-1999
- WSU Distinguished Faculty Fellowship Committee, 1998
- Department of Pediatrics, Review Advisory Panel, 1998
- Library Committee, WSU Sch.Medicine Faculty Senate, 1999-present.
- Advisory Committee, WSU Institute for Drug Design, 2000-2003.
- Research Advisory Committee, WSU School of Medicine, 2000-present.
- Chairman, Basic Science Chairmen Group, 2002-2003.
- Wayne State Representative to China-United States Biochemistry Admissions (CUSBA) Program, Beijing, China, 2004.
- Advisory Board, Center for Molecular Medicine and Genetics, 2004- present.
- Board Member, University Physician Group, 2007
- Vice President, Wayne State University Academy of Scholars, 2007
- Chairman, Basic Science Chairs Group, 2007-08
- President, Wayne State University Academy of Scholars, 2008-09

At Florida International University:

- Search Committee, Department of Chemistry and Biochemistry, 2010
- Sabbatical Committee, 2010, 2011
- University Strategic Planning Committee, 2010
- University Research Advisory Council, 2010 –
- Faculty Search Committee, HWCOM 2010 -
- Biochemistry Graduate Program Advisory Committee, 2010 -
- Search Committee, Graduate School Dean, 2011
- Search Committee, Director, Environmental Health and Safety, 2011
- University Graduate School Advisory Committee, 2011 – 2016
- Chair, Search Committee, Chair of Human and Molecular Genetics, 2013
- Associate Dean for Basic Research and Graduate Programs, 2009-2016

ARMISTEAD (Ted) G. RUSSELL

PRESENT POSITION

Howard T. Tellepsen Chair and Regents' Professor
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Georgia Institute of Technology
Atlanta, Georgia 30332-0512
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PROFESSIONAL INTERESTS

Air Pollution Modeling, Health Effects of Air Pollutants, Aerosol Dynamics, Environmental Economics and Control Strategy Design, Atmospheric Chemistry, Computer Modeling, Numerical Methods

EDUCATION

Ph.D. Mechanical Engineering, (1985)
Environmental Quality Laboratory, California Institute of Technology

M.S. Mechanical Engineering (1980)
California Institute of Technology

B.S. Mechanical Engineering (1979) Summa Cum Laude
Washington State University

PROFESSIONAL EXPERIENCE

2015-	Co-Director, Integrated Infrastructure Solutions (NSF-funded Sustainability Research Network team)
2012-	Howard T. Tellepsen Chair of Civil and Environmental Engineering, Georgia Institute of Technology, Atlanta, Georgia.
2013-	Regents' Professor
2010-2016	Co-Director, Southeastern Center for Air Pollution Epidemiology
2005-	Director, GT Air Resources Engineering Center
1996-2012	Georgia Power Distinguished Professor of Environmental Engineering, Georgia Institute of Technology, Atlanta, Georgia.
2001-2004	Coordinator, Environmental Engineering, Georgia Inst. Technology
2004-2013	Associate Editor, Environmental Science and Technology
2006-2012	Member, USEPA Clean Air Science Advisory Committee
1994-1996	Professor, Department of Mechanical Engineering and Engineering and Public Policy, Carnegie Mellon University, Pittsburgh, Pennsylvania.
1990-1994	Associate Professor, Department of Mechanical Engineering and Engineering and Public Policy, Carnegie Mellon University, Pittsburgh, Pennsylvania.
1985-1990	Assistant Professor, Department of Mechanical Engineering, Carnegie Mellon University, Pittsburgh, Pennsylvania.
1985	Senior Research Scientist, California Institute of Technology, Pasadena, California.

HONORS AND AWARDS

Paper of the Year, Frontiers of Environmental Science and Technology (2016)
Environmental Excellence Award-Air Quality, Federal Highway Administration (2016)
Distinguished Alumni Award, Washington State University (2015)
Fellow, American Society of Mechanical Engineering (2014)
National Associate of the National Academies
Regents' Professor (2013)
Howard T. Tellepsen Chair (2012)
Fellow, American Association for the Advancement of Science
Ralph Teetor Outstanding Professor Educator Award (SAE)
Smithsonian Scientific Computation Award: Finalist (one of 5 nationally)
1990 Siggraph Award for a Scientific Visualization,
Niccograph '90 Scientific Visualization, 1st place
Finalist, INA Visualization, Monte Carlo
Computer Graphics Society of Japan, 1st place, Scientific Visualization
Warren Lecture, Univ. Minnesota (2011)
Class of 1934 Outstanding Interdisciplinary Activities Award (Georgia Tech, 2015)
Sustained Research Award (CEE, 2013)
Most influential individual to Intel Science Talent Search semifinalist (2013)
"Thank you" Teacher Appreciation (2011)
Guest Editor, Environmental Science and Technology, Issue on Particulate Matter and Health, July, 2009
Visiting Professor, King Mongkut's University of Technology (2008)
Distinguished Lecture, University of California-Riverside (2005)
Outstanding Reviewer, Atmospheric Environment
Sigma Xi Sustained Research Award (Georgia Tech, 2006)
Outstanding Graduate Advisor (Georgia Tech, 2012)
Outstanding Leadership Award (CEE)
Plenary Lecture, AAAR (2004)
Visiting Professor, University of Athens (2006)
Outstanding Reviewer, J. Geophysical Research
Interdisciplinary Research Award (CEE, Georgia Tech, 2014)
Georgia Power Professorship
Excellence in Review Award, Environmental Science and Technology
Visiting Professor, National Taiwan University
Visiting Professor Fellowship, Ecole Polytechnique Federale Lausanne (Switzerland)
Outstanding Young Scholar Fellowship (Japanese International Cooperative Research Fund)
Air Pollution Control Association National Paper Contest -- First Place
Various Fellowships and Scholarships at Caltech and WSU

PATENTS

Dacosta H F; Fan M; Russell A G. "Carbon dioxide removal from flue gas by passing flue gas including carbon dioxide through bed of particulate material consisting of metal silicates, alkaline earth and/or metal oxides, and reacting carbon dioxide with particulate material" US2010221163-A1

EDITORIAL ROLES

Guest Editor, Frontiers of Environmental Science and Engineering (2016)
Associate Editor, Environmental Science and Technology (2004-2013)
Editorial Board, Air Quality, Atmosphere and Health (2011-present)
Guest Editor, Focus issue on Particulate Matter and Health, Environmental Science and Technology (2009)

NATIONAL RESEARCH COUNCIL REPORTS

1. "Assessment of the Department of Veterans Affairs Airborne Hazards and Open Burn Pit Registry" (2017). Washington, DC: The National Academies Press.
2. "Review of the Draft Interagency Report on the Impacts of Climate Change on Human Health in the United States" (2015) Greenbaum D., et al., National Research Council, National Academy Press, Washington D.C.
3. "Sustainability and the US Environmental Protection Agency" (2011) Goldstein, B., et al., National Research Council, National Academy Press, Washington D.C.
4. "Estimating Mortality Risk Reduction and Economic Benefits from Controlling Ozone Air Pollution" (2008) Bailar, J.C. et al., National Research Council, National Academy Press, Washington D.C.
5. "Review of the U.S. Climate Change Science Program's Synthesis and Assessment Product 3.2, "Climate Projections Based on Emission Scenarios for Long-lived and Short-lived Radiatively Active Gases and Aerosols" (2007) Carroll, MA, et al. National Research Council, National Academy Press, Washington D.C.
6. "Energy Futures and Urban Air Pollution: Challenges for China and the United States" (2007) Watson J. et al., National Research Council, National Academy Press, Washington D.C.
7. "Managing Carbon Monoxide in Meteorological and Topographical Problem Areas" (2003) Russell, A.G., et al. National Research Council, National Academy Press, Washington D.C.
8. "The On-going Challenge of Managing Carbon Monoxide Pollution in Fairbanks, Alaska" (2003) Russell, A.G. et al., National Research Council, National Academy Press, Washington D.C.
9. "Mobile Source Emissions Modeling," (2000) Russell, A.G., et al., National Research Council, National Academy Press, Washington DC.
10. "Ozone Forming Potential of Reformulated Gasoline" Chameides W. et al., (1999) National Research Council, National Academy Press, Washington D.C.
11. "Science and Judgment in Risk Assessment," with K. Isselbacher et al. (1993), National Research Council, National Academy Press, Washington, DC.
12. "Rethinking the Ozone Problem in Urban and Regional Air Pollution," with J.H. Seinfeld et al. (1991), National Research Council, National Academy Press, Washington, DC.

INTERNATIONAL AGENCY FOR RESEARCH ON CANCER MONOGRAPHS

1. Russell, AG, "Combustion Emissions" in **Air Pollution and Cancer, IARC Scientific Publication No 161**, (K. Strait, A. Cohen and J. Samet, Eds.) WHO Press, World Health Organization, Switzerland
2. Outdoor Air Pollution (2016) **IARC MONOGRAPH No 109**, WHO Press, World Health Organization, Switzerland

BOOK CHAPTERS

3. Odman, M. T., Hu, Y., Russell, A. G. and Chang, M. E., "Forecasting Ozone and PM2.5 in Southeastern U.S.," in **Air Pollution Modeling and its Application** XVIII, pp. 220-229 (C. Borrego and E. Renner, Eds.), New York: Elsevier (2007)
4. Cohan, D. and Russell, A (2006) "Cost-optimized air pollution control using high-order sensitivity analysis." In **Air Pollution Modeling and Its Application** XVII, Eds. C. Borrego and A-L Norman, Springer
5. Cohan, D. Hu, Y. and Russell, A (2006) "Alternative Approaches to diagnosing ozone production regime." In **Air Pollution Modeling and Its Application** XVII, Eds. C. Borrego and A-L Norman, Springer
6. Bergin, M., West, J., Keating, T. and Russell, A.G.. (2005), "Regional Atmospheric Pollution and Transboundary Air Quality Management," **Annual Review of Environment and Resources**, Annual Reviews, pp 1-37
7. Bergin, M., Croes, B., Carter, W., Russell, A.G., and Seinfeld, J.H. (1998), "Ozone Control and VOC Reactivity," **E. Environmental Analysis and Remediation**, Wiley-Interscience, pp 3355-3383.
8. Russell, A.G. (1997), "Regional Air Quality Modeling," **Ann. Reviews of Energy and the Environment**, Annual Reviews, Inc., 537-588.
9. Russell, A.G. and Milford J.B. (1995), "Air Quality Modeling," **Encyclopedia Energy Technol. and Environment**, Wiley-Interscience, 207-225.
10. Milford J.B. and Russell, A.G. (1994), "Air Pollution Modeling," **Environmental Modeling**, Elsevier.
11. Odman, M.T. and Russell, A.G. (1992), "Multiscale Horizontal Transport for Urban and Regional Air Quality Modeling," **Air Pollution Modeling and Its Application, 17,** 211-220, Plenum, New York.
12. Russell, A.G. and Milford, J.B. (1992), "Atmospheric Modeling," **E. Chemical Technology, 3**, 725-751, John Wiley & Sons.
13. Russell, A.G. (1991), "Air Pollution, Causes and Control," **E. Applied Physics**, VCH Publishers, Inc., NY.
14. Russell, A.G. (1990), "Methanol Fuel Use for Photochemical Smog Control," **Methanol as an Alternative Fuel: An Assessment** (W. Kohl, Ed.). World Resources Institute.
15. Russell, A.G. (1989), "Air Pollution and The Design of Environmental Controls," **Computational Physics** (L.D. Yuan and D.H. Feng, Eds.), World Scientific, Singapore.
16. Russell, A.G. (1987), "Mathematical Modeling of the Effect of Emission Sources on Atmospheric Pollutant Concentrations," in **Air Pollution, The Automobile and Public Health**, Health Effects Institute Future Strategy Project, National Academy Press, Washington, DC -- Translated into Japanese, 1990.
17. Russell, A.G., McRae, G.J. and Cass, G.R. (1982), "Acid Deposition of Photochemical Oxidation Products -- A Study Using a Lagrangian Trajectory Model," in **Air Pollution Modeling and its Application, III**, Plenum Press, New York.

JOURNAL PUBLICATIONS

1. Friberg, M. D., X. Zhai, H. A. Holmes, H. H. Chang, M. J. Strickland, S. E. Sarnat, P. E. Tolbert, A. G. Russell and J. A. Mulholland (2016). "Method for Fusing Observational Data and Chemical Transport Model Simulations To Estimate Spatiotemporally Resolved Ambient Air Pollution." *Environmental Science & Technology* **50**(7): 3695-3705.
2. Fang, T., V. Verma, J. T. Bates, J. Abrams, M. Klein, M. J. Strickland, S. E. Sarnat, H. H. Chang, J. A. Mulholland, P. E. Tolbert, A. G. Russell and R. J. Weber (2016). "Oxidative potential of ambient water-soluble PM2.5 in the southeastern United States: contrasts in sources and health associations between ascorbic acid (AA) and dithiothreitol (DTT) assays." *Atmospheric Chemistry and Physics* **16**(6): 3865-3879.
3. Johnson, K. K., M. H. Bergin, A. G. Russell and G. S. W. Hagler (2016). "Using Low Cost Sensors to Measure Ambient Particulate Matter Concentrations and On-Road Emissions Factors." *Atmos. Meas. Tech. Discuss.*
4. Lal, R. M., A. S. Nagpure, L. N. Luo, S. N. Tripathi, A. Ramaswami, M. H. Bergin and A. G. Russell (2016). "Municipal solid waste and dung cake burning: discoloring the Taj Mahal and human health impacts in Agra." *Environmental Research Letters* **11**(10).
5. Longo, A. F., D. J. Vine, L. E. King, M. Oakes, R. J. Weber, L. G. Huey, A. G. Russell and E. D. Ingall (2016). "Composition and oxidation state of sulfur in atmospheric particulate matter." *Atmospheric Chemistry and Physics* **16**(21): 13389-13398.
6. Lv, B., Y. Hu, H. H. Chang, A. G. Russell and Y. Bai (2016). "Improving the Accuracy of Daily PM2.5 Distributions Derived from the Fusion of Ground-Level Measurements with Aerosol Optical Depth Observations, a Case Study in North China." *Environmental Science & Technology* **50**(9): 4752-4759.
7. Ramaswami, A., A. G. Russell, P. J. Culligan, K. R. Sharma and E. Kumar (2016). "Meta-principles for developing smart, sustainable, and healthy cities." *Science* **352**(6288): 940-943.
8. Redman, J. D., H. A. Holmes, S. Balachandran, M. L. Maier, X. X. Zhai, C. Ivey, K. Digby, J. A. Mulholland and A. G. Russell (2016). "Development and evaluation of a daily temporal interpolation model for fine particulate matter species concentrations and source apportionment." *Atmospheric Environment* **140**: 529-538.
9. Sailor, D., M. Shepherd, S. Sheridan, B. Stone, L. Kalkstein, A. Russell, J. Vargo and T. Andersen (2016). "Improving Heat-Related Health Outcomes in an Urban Environment with Science-Based Policy." *Sustainability* **8**(10).
10. Shi, G.-L., J. Xu, X. Peng, Y.-Z. Tian, W. Wang, B. Han, Y.-F. Zhang, Y.-C. Feng and A. G. Russell (2016). "Using a new WALSPMF model to quantify the source contributions to PM2.5 at a harbour site in China." *Atmospheric Environment* **126**: 66-75.
11. Turner, M. D., D. K. Henze, S. L. Capps, A. Hakami, S. L. Zhao, J. Resler, G. R. Carmichael, C. O. Stanier, J. Baek, A. Sandu, A. G. Russell, A. Nenes, R. W. Pinder, S. L. Napelenok, J. O. Bash, P. B. Percell and T. F. Chai (2016). "Reply to Comment on 'Premature deaths attributed to source-specific BC emissions in six urban US regions'." *Environmental Research Letters* **11**(9).

12. Vargo, J., B. Stone, D. Habeeb, P. Liu and A. Russell (2016). "The social and spatial distribution of temperature-related health impacts from urban heat island reduction policies." *Environmental Science & Policy* **66**: 366-374.
13. Vreeland, H., J. J. Schauer, A. G. Russell, J. D. Marshall, A. Fushimi, G. Jain, K. Sethuraman, V. Verma, S. N. Tripathi and M. H. Bergin (2016). "Chemical characterization and toxicity of particulate matter emissions from roadside trash combustion in urban India." *Atmospheric Environment* **147**: 22-30.
14. Weber, R. J., H. Guo, A. G. Russell and A. Nenes (2016). "High aerosol acidity despite declining atmospheric sulfate concentrations over the past 15 years." *Nature Geoscience* **9**(4): 282-+.
15. West, J. J., A. Cohen, F. Dentener, B. Brunekreef, T. Zhu, B. Armstrong, M. L. Bell, M. Brauer, G. Carmichael, D. L. Costa, D. W. Dockery, M. Kleeman, M. Krzyzanowski, N. Kuenzli, C. Liousse, S.-C. C. Lung, R. V. Martin, U. Poeschl, C. A. Pope, III, J. M. Roberts, A. G. Russell and C. Wiedinmyer (2016). ""What We Breathe Impacts Our Health: Improving Understanding of the Link between Air Pollution and Health"." *Environmental Science & Technology* **50**(10): 4895-4904.
16. Xiao, Q. Y., Y. Liu, J. A. Mulholland, A. G. Russell, L. A. Darrow, P. E. Tolbert and M. J. Strickland (2016). "Pediatric emergency department visits and ambient Air pollution in the US State of Georgia: a case-crossover study." *Environmental Health* **15**.
17. Zhai, X. X., A. G. Russell, P. Sampath, J. A. Mulholland, B. U. Kim, Y. Kim and D. D'Onofrio (2016). "Calibrating R-LINE model results with observational data to develop annual mobile source air pollutant fields at fine spatial resolution: Application in Atlanta." *Atmospheric Environment* **147**: 446-
18. Davis, A. Y., R. Ottmar, Y. Liu, S. Goodrick, G. Achtemeier, B. Gullett, J. Aurell, W. Stevens, R. Greenwald, Y. Hu, A. Russell, J. K. Hiers and M. T. Odman (2015). "Fire emission uncertainties and their effect on smoke dispersion predictions: a case study at Eglin Air Force Base, Florida, USA." *International Journal of Wildland Fire* 24(2): 276-285.
19. Thomas, V., P. Kerl, J. M. Cruz, A. Nenes, M. Realff, A. Russell, J. Sokol and W. Zhang (2015). "Reduce Ozone When and Where It Matters Most." *Power* 159(11): 68-68.
20. Bates, J. T., et al. (2015b), Reactive Oxygen Species Generation Linked to Sources of Atmospheric Particulate Matter and Cardiorespiratory Effects, *Environ. Sci. Technol.*, *49*(22), 13605-13612, doi:10.1021/acs.est.5b02967.
21. Galvis, B., M. Bergin, J. Boylan, Y. Huang, M. Bergin, and A. G. Russell (2015), Air quality impacts and health-benefit valuation of a low-emission technology for rail yard locomotives in Atlanta Georgia, *Sci. Total Environ.*, *533*, 156-164, doi:10.1016/j.scitotenv.2015.06.064.
22. Henneman, L. R. F., H. A. Holmes, J. A. Mulholland, and A. G. Russell (2015), Meteorological detrending of primary and secondary pollutant concentrations: Method application and evaluation using long-term (2000-2012) data in Atlanta, *Atmos. Environ.*, *119*, 201-210, doi:10.1016/j.atmosenv.2015.08.007.
23. Hu, Y., M. T. Odman, M. E. Chang, and A. G. Russell (2015), Operational forecasting of source impacts for dynamic air quality management, *Atmos. Environ.*, *116*, 320-322, doi:10.1016/j.atmosenv.2015.04.061.
24. Ivey, C. E., H. A. Holmes, Y. T. Hu, J. A. Mulholland, and A. G. Russell (2015),

Development of PM2.5 source impact spatial fields using a hybrid source apportionment air quality model, *Geoscientific Model Development*, *8*(7), 2153-2165, doi:10.5194/gmd-8-2153-2015.

25. Kerl, P. Y., W. Zhang, J. B. Moreno-Cruz, A. Nenes, M. J. Realff, A. G. Russell, J. Sokol, and V. M. Thomas (2015), New approach for optimal electricity planning and dispatching with hourly time-scale air quality and health considerations, *Proc. Natl. Acad. Sci. U. S. A.*, *112*(35), 10884-10889, doi:10.1073/pnas.1413143112.
26. Koo, B., N. Kumar, E. Knipping, U. Nopmongcol, T. Sakulyanontvittaya, M. T. Odman, A. G. Russell, and G. Yarwood (2015), Chemical transport model consistency in simulating regulatory outcomes and the relationship to model performance, *Atmos. Environ.*, *116*, 159-171, doi:10.1016/j.atmosenv.2015.06.036.
27. Nagpure, A. S., A. Ramaswami, and A. Russell (2015), Characterizing the Spatial and Temporal Patterns of Open Burning of Municipal Solid Waste (MSW) in Indian Cities, *Environ. Sci. Technol.*, *49*(21), 12904-12912, doi:10.1021/acs.est.5b03243.
28. Rudokas, J., P. J. Miller, M. A. Trail, and A. G. Russell (2015), Regional Air Quality Management Aspects of Climate Change: Impact of Climate Mitigation Options on Regional Air Emissions, *Environ. Sci. Technol.*, *49*(8), 5170-5177, doi:10.1021/es505159z.
29. Trail, M., A. P. Tsimpidi, P. Liu, K. Tsigaridis, Y. Hu, A. Nenes, B. Stone, and A. G. Russell (2015a), Reforestation and crop land conversion impacts on future regional air quality in the Southeastern US, *Agric. For. Meteorol.*, *209*, 78-86, doi:10.1016/j.agrformet.2015.05.001.
30. Turner, M. D., et al. (2015a), Premature deaths attributed to source-specific BC emissions in six urban US regions, *Environmental Research Letters*, *10*(11), doi:10.1088/1748-9326/10/11/114014.
31. Verma, V., Y. Wang, R. El-Afifi, T. Fang, J. Rowland, A. G. Russell, and R. J. Weber (2015b), Fractionating ambient humic-like substances (HULIS) for their reactive oxygen species activity - Assessing the importance of quinones and atmospheric aging, *Atmos. Environ.*, *120*, 351-359, doi:10.1016/j.atmosenv.2015.09.010.
32. Adams, K., D. S. Greenbaum, R. Shaikh, A. M. van Erp, and A. G. Russell (2015), Particuate matter components, sources, and health: Systematic approaches to testing effects, **J. Air Waste Manage. Assoc.,** *65*(5), 544-558, doi:10.1080/10962247.2014.1001884.
33. Balachandran, S., H. H. Chang, J. E. Pachon, H. A. Holmes, J. A. Mulholland, and A. G. Russell (2014), Bayesian-Based Ensemble Source Apportionment of PM2.5 (vol 47, pg 13511, 2013), **Environ. Sci. Technol.,** *48*(4), 2515-2515, doi:10.1021/es500384y.
34. Davis, A. Y., et al. (2015), Fire emission uncertainties and their effect on smoke dispersion predictions: a case study at Eglin Air Force Base, Florida, USA, **International Journal of Wildland Fire**, *24*(2), 276-285, doi:10.1071/wf13071.
35. Dutcher, B., M. Fan, and A. G. Russell (2015), Amine-Based CO2 Capture Technology Development from the Beginning of 2013-A Review, **Acs Applied Materials & Interface**s, *7*(4), 2137-2148, doi:10.1021/am507465f.

36. Gass, K., S. Balachandran, H. H. Chang, A. G. Russell, and M. J. Strickland (2015), Ensemble-Based Source Apportionment of Fine Particulate Matter and Emergency Department Visits for Pediatric Asthma, **Am. J. Epidemiol.**, *181*(7), 504-512, doi:10.1093/aje/kwu305.
37. Han, Y., M. Fan, and A. G. Russell (2015a), New insights into synergistic effects and active species toward Hg-0 emission control by Fe(VI) absorbent, **Fuel,** *140*, 309-316, doi:10.1016/j.fuel.2014.09.072.
38. Han, Y., X. Li, M. Fan, A. G. Russell, Y. Zhao, C. Cao, N. Zhang, and G. Jiang (2015b), Abatement of SO2-NOx binary gas mixtures using a ferruginous active absorbent: Part I. Synergistic effects and mechanism, ***Journal of Environmental Sciences-China***, *30*, 55-64, doi:10.1016/j.jes.2014.10.012.
39. Irani, M., M. Fan, H. Ismail, A. Tuwati, B. Dutcher, and A. G. Russell (2015), Modified nanosepiolite as an inexpensive support of tetraethylenepentamine for CO2 sorption, **Nano Energy**, *11*, 235-246, doi:10.1016/j.nanoen.2014.11.005.
40. Jiang, G., Q. Huang, S. D. Kenarsari, X. Hu, A. G. Russell, M. Fan, and X. Shen (2015), A new mesoporous amine-TiO2 based pre-combustion CO2 capture technology, **Applied Energy**, *147*, 214-223, doi:10.1016/j.apenergy.2015.01.081.
41. Kerl, P., W. Zhang, J. Moreno-Cruz, A. Nenes, M. Realff, A. Russell, J. Sokol, and V. M. Thomas (2015), A New Approach for Optimal Electricity Planning and Dispatching with Hourly Time-Scale Air Quality and Health Considerations, , **Proc.Nat.Acad.Sci**., *in press*..
42. Oakes, M. M., et al. (2014), Comparing Multipollutant Emissions-Based Mobile Source Indicators to Other Single Pollutant and Multipollutant Indicators in Different Urban Areas, **International Journal of Environmental Research and Public Health**, *11*(11), 11727-11752, doi:10.3390/ijerph111111727..
43. Trail, M. A., A. P. Tsimpidi, P. Liu, K. Tsigaridis, Y. Hu, J. R. Rudokas, P. J. Miller, A. Nenes, and A. G. Russell (2015), Impacts of Potential CO2-Reduction Policies on Air Quality in the United States, **Environ. Sci. Technol**., *49*(8), 5133-5141, doi:10.1021/acs.est.5b00473.
44. Turner, M. D., et al. (2015), Differences Between Magnitudes and Health Impacts of BC Emissions Across the United States Using 12 km Scale Seasonal Source Apportionment, **Environ. Sci. Technol.,** *49*(7), 4362-4371, doi:10.1021/es505968b.
45. Verma, V., T. Fang, L. Xu, R. E. Peltier, A. G. Russell, N. L. Ng, and R. J. Weber (2015), Organic Aerosols Associated with the Generation of Reactive Oxygen Species (ROS) by Water-Soluble PM2.5, **Environ. Sci. Technol.,** *49*(7), 4646-4656, doi:10.1021/es505577w.
46. Tuwatit, A., M. Fan, A. G. Russell, J. Wang, and H. F. M. Dacosta (2013), New CO2 Sorbent Synthesized with Nanoporous TiO(OH)(2) and K2CO3, **Energy Fuels,** *27*(12), 7628-7636, doi:10.1021/ef401368n.
47. De Santiago, A., A. F. Longo, E. D. Ingall, J. M. Diaz, L. E. King, B. Lai, R. J. Weber, A. G. Russell, and M. Oakes (2014), Characterization of Selenium in Ambient Aerosols and Primary Emission Sources, **Environmental Science & Technology** *48*(16), 8988-8994, doi:10.1021/es500379y.
48. Ramaswami, A., Russell, AG, Chertow, M., Hollander, R., Tripathi, S., Lei, S., Cui, S., Singh, A., (2014) International, Interdisciplinary Education on Sustainable

Infrastructure and Sustainable Cities: Key Concepts, **The Bridge,** Fall, National Academy of Engineering.

49. Zhang, Yanjun, Zheng, Mei, Cai, Jing, Yan, Caiqing, Hu, Yongtao, Russell, Armistead G, Wang, Xuesong, Wang, Shuxiao and Zhang, Yuanhang**.** Source Apportionment In China**, Chin Sci Bull** (Chin Ver), 2014, doi: 10.1360/N972014-00975.
50. Hu, Y., S. Balachandran, J. E. Pachon, J. Baek, C. Ivey, H. Holmes, M. T. Odman, J. A. Mulholland, and A. G. Russell (2014a), Fine particulate matter source apportionment using a hybrid chemical transport and receptor model approach, **Atmos. Chem. Phys**., *14*(11), 5415-5431, doi:10.5194/acp-14-5415-2014.
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HEALTH EFFECTS INSTITUTE REPORTS

1. Improving Estimates of Diesel and Other Emissions for Epidemiologic Studies (2003) Health Effects Institute, Boston, MA
2. Research Directions to Improve Estimates of Human Exposure and Risk from Diesel Exhaust, (2002) Health Effects Institute, Boston, MA

PUBLISHED EDITORIAL LETTERS

Russell, A.G. (2003) Fairbanks Daily News Miner, Letter to the editor on CO management in Alaska, May 1, 2003.

Russell, A.G. (2004) Fairbanks Daily News Miner, Letter to the editor on the Inspection and Maintenance program in Fairbanks, January 7, 2004.

MOVIES:

"Pollutant Dynamics in Mexico City," With L. McNair and C. Nuuja.

"Smog: Visualizing the Components," with Aliza Corson, Greg McRae, Michael McNeil and William Sherman (1990 Siggraph final video; 1st Place, Scientific Visualization, Niccograph '90; Finalist, INA Visualization, Monte Carlo).

"Visualizing Air Quality in Los Angeles," with Chris Nuuja, et al. (1st place, Computer Graphics Society of Japan).

"Methanol, A Path Towards Cleaner Air," with Dan Stodalsky, Damon Liparelli, Joel Welling, and Greg McRae.

"Improving Air Quality With Methanol -- Solving An Environmental Problem Using a CRAY XMP."

COMPUTER CODE RELEASES

DDM-3D in CMAQ for version 4.3, released to US EPA, U.C. Berkeley, Princeton, CMAS and NESCAUM.

Mass conservation algorithms in CMAQ for version 4.3, released to US EPA, CMAS and NESCAUM.

PROFESSIONAL SOCIETIES

American Society of Mechanical Engineers, American Association for Aerosol Research, American Chemical Society, American Association for the Advancement of Science, Sigma Xi, Air and Waste Management Association, International Society for Environmental Epidemiology, Int. Society for Exposure Science

NATIONAL AND INTERNATIONAL COMMITTEES, RESEARCH PROGRAM/AGENDA REVIEWS

National Atmospheric and Oceanic Administration Air Resources Laboratory Review (2016)

National Research Council, National Academy of Sciences Decadal Survey for Earth Science and Applications from Space: Weather and Air Quality Panel, (2016-present)

National Academy of Engineering Delegation to Russia on Atmospheric Black Carbon (2016)

National Research Council, Committee on the Review of the Draft Interagency Report on the Impacts of Climate Change on Human Health in the United States" (2015-2016)

Coordinating Research Council, Air Quality Modeling Research Planning (2016)

CASAC panel on NOx and SOx Ecosystem Effects, US EPA, (2015-present)

National Academy of Medicine (Institute of Medicine), Committee on the Review of the Department of Veterans Affairs Airborne Hazards and Open Burn Pit Registry (2014-2017).

Air and Waste Management Association, Publications Committee (2015-)

National Research Council Review Coordinator, "Sustainability Concepts in Decision Making: Tools and Approaches for U.S. EPA," (2014)

Member, Peking University College of Environmental Science and Engineering International Review Committee (2103-2014)

Member, Peking University College of Urban and Environmental Sciences International Review Committee (2103-2014)

Air and Waste Management Association, Arthur Stern Award Committee (2013, 2014, 2015, 2016)

International Agency for Research on Cancer, Air Pollution Panel (2012-2013)

Committee on Incorporating Sustainability in the US Environmental Protection Agency, National Research Council, (2010 – 2011)

Nitrogen Cycle-Climate Interactions Workshop to advise the National Climate Assessment, (2011).

Chair, Atmospheric Monitoring and Methods Subcommittee, US EPA, (2011-2012)

Chair, National Particle Toxicity (NPACT) Initiative Report Review Committee, Health Effects Institute (2011-2013)

Session Chair, HEI Annual Conference (2011, 2012, 2013)

Chair, EPA Council on Clean Air Compliance Analysis, Air Quality Modeling Subcommittee, US EPA, 2008-present.

Member, Clean Air Scientific Advisory Committee (CASAC), USEPA, Committee mandated in the Clean Air Act to review National Ambient Air Quality Standards, and review other air quality issues for US EPA. (2006-2012)

Chair, CASAC panel on NOx and SOx Ecosystem Effects, US EPA, (2007-2011)

Board on Environmental Studies and Toxicology, National Research Council, (2004-2009)

CMAQ Review Panel, US EPA, RTP, NC (2011)

Chair, Ambient Air Monitoring and Methods Subcommittee, US EPA (2007-2010)

Committee on Energy Futures and Air Pollution in Urban China and the United States National Academy of Engineering, Washington, DC, 2004 – 2007

Member, Review team of the EPA ORD Human Exposure and Atmospheric Sciences Division

Member, Council on Clean Air Compliance Analysis, USEPA, 2008-2014

Member, Health Effects Institute Review Committee, 2007-present.

Committee on Ozone Mortality and Risk Assessment, National Research Council, Washington, DC, 2006 – 2008

Committee to Review the Climate Change Science Program Synthesis and Evaluation Product 3.2, National Research Council, Washington, DC, 2007

Session Chair, MIT Symposium on Energy and the Environment (2006)

CMAQ Review Panel, US EPA, RTP, NC (2006)

Session Chair, NARSTO Workshop on Particulate Matter Modeling (2006)

US EPA CASAC Ozone Panel, 2005-2007

Chair, Workgroup on Air Monitoring Plan (in response to Hurricane Katrina), US EPA Science Advisory Board 2005

Health Effects Institute, Public Health and Air Pollution in Asia, Scientific Review Panel, 2006

Health Effects Institute, Air Toxics Workshop Co-Chair, April, 2004

American Association for Aerosol Research, PM Conference Executive Committee, 2004-2005 (Conference, Feb. 2005)

EPA Science Advisory Board/Clean Air Science Advisory Committee June, Ambient Air Monitoring Methods Subcommittee (2003-present)

EPA Science Advisory Board, May, Air Quality Modeling Subcommittee (2003-present)

Governor's Joint Study Committee on Alternative and Environmentally Sensitive Truck Fuels, State of Georgia, 2002

Atlanta Chamber of Commerce Committee on Transportation Control Measures for Air Quality, May, 2003.

Association of Environmental Engineering and Science Professors
Strategic Planning Committee, 2002

EPA Science Advisory Board June, 2003-2004
National Ambient Air Monitoring Strategy Committee

Health Effects Institute, Boston, MA, 2002-2003
Chair, Diesel Signature Working Group

EPA Peer Reviews: STAR Fellowships, SBIR Program.

Reactivity Scientific Advisory Committee
California Air Resources Board, Member (1996-…)

National Research Council, Washington, DC, 2001 - 2003
Chairman, Committee on Carbon Monoxide Episodes in Meteorological and Topographical Problem Areas
Subject: Carbon Monoxide Non-attainment problems

Health Effects Institute, 2000-2003
Diesel PM Review
Subject: Assessment of research directions for assessing health effects of diesel emissions

US EPA Board of Scientific Counselors, 1999,Subcommittee member,
Subject: Review of the Management of the Office of Research and Developments Particulate Matter Research Program

National Research Council, Washington, DC, 1998 - 2000
Chairman, Committee to Review EPA's MOBILE Emissions Program
Subject: Review of EPA's MOBILE Model

World Bank, Mexico City, 1999
Member, Expert Panel for Addressing Mexico City Air Pollution

Chair, Academic and Research Institution Perspectives on Models 3, Washington D.C., May, 2000.

National Research Council, Washington, DC, 1997 - 1999
Member, Committee on Ozone Forming Potential of Reformulated Gasoline
Subject: Reactivity of Reformulated Gasoline

Environmental Protection Agency, Research Triangle Park, NC, 1998,
MAPPER Review Committee, Chair.

NARSTO Modeling and Chemistry Assessment Committee, 1995-1999
Writing Chair for Application Assessment and Strategies

US EPA FACA Subcommittee on Ozone, Particulate Matter and Regional Haze,
Committee Member

Advisory Board to the White House,
Office of Science Technology and Policy,
Oxygenated Fuels Assessment Steering Committee,
Air Quality Benefits Team: Member

American Association for Aerosol Research,
Co-chair, Technical Program, Pittsburgh, PA 1995

Environmental Protection Agency, Research Triangle Park, NC, 1995,
Regional Modeling Review Committee Member, 1995-Present

Environmental Protection Agency, Research Triangle Park, NC, 1994,
SOS Peer Review Committee Member

NARSTO-NE, Executive Steering Committee,
Member, 1995-Present

Department of Defense, Environmental Quality Modeling Committee,
Co-Chair, 1994-Present

Environmental Protection Agency, Research Triangle Park, NC, 1987

Member, Peer Review Committee
Subject: Regional and Urban Oxidant Modeling Research

Health Effects Institute, Cambridge, MA, 1986 - 1987
Future Strategies Project
Subject: Future Research Directions in Air Quality Modeling

Environmental Protection Agency, Research Triangle Park, NC, 1989
Member, Peer Review Committee
Subject: Alternative Fuel Impacts

Environmental Protection Agency, Research Triangle Park, NC, 1990
Chair, Peer Review Committee
Subject: Air Oxidant Formation Program

National Research Council, Washington, DC, 1989 - 1991
Member, Committee on Tropospheric Ozone Control
Subject: Oxidant Dynamics and Control

National Research Council, Washington, DC, 1991 - 1993
Member, Committee on Risk Assessment of Hazardous Air Pollutants
Subject: Atmospheric Dynamics of Air Pollutants

Third International Conference on Air Pollution Modeling, Monterey, Mexico
Member, Organizing Committee

National Research Council, Washington, DC, 1992
Workshop on the "Review of DoE's Office of Conservation and Renewable Energy"

Environmental Protection Agency/Northeast States External Review Workgroup, ROMNET 2, 1992 - 1993

Mexico City Air Pollution Control Strategy Review, 1992 - 1994

OTHER PROFESSIONAL SERVICE

Manuscript Reviews for *Atmospheric Environment, Env. Science and Technology, Air and Waste, J. Geophys. Research, Aerosol Science and Technology, Environmental Engineering, Transportation Research Record, J. Applied Meteorology, Atmospheric Chemistry and Physics, Env. Health Perspectives. Science of the Total Environment, Rev. in Toxicology, Env. Health Perspectives, Air Quality, Atmosphere and Health, Epidemiology, Geophys. Model. Development*

Proposal Reviews for US EPA, NSF, DoE, DoD, NASA, HEI, Swiss NSF, Hong Kong, Singapore, India, Qatar NSF.

Air and Waste Management, Judge, Student Poster Competition (2015, 2016)

Air and Waste Management, review, Best Thesis Award (2015, 2016)

American Association for Aerosol Research, Judge, Student Poster Competition (multiple years)

INSTITUTE SERVICE

Chair, CEE Awards Committee (2015-present)
Member, 5-Year Review of Dean Gary May, College of Engineering (2016-2017)
Chair, 5-Year Review of Aerospace Engineering Chair (2014)
Faculty Advisor: Student Air and Waste Management Association (AWMA) Georgia Tech Student Chapter (2014-present)
Chair, Review of the Brook Byers Institute on Sustainable Systems (2012-2013)
Chair, EnvE Curriculum Committee (2012-2014)
Faculty Representative to the Intramural Sports Improvement Committee
Member, Reappointment, Promotion and Tenure Committee (Institute, 2013-2014)
Member, CEE Strategic Planning Committee (2012-2013)
Chair, ad hoc Committee on Group Structure (CEE, 2011-2012)
Chair, Georgia Power/Georgia Research Alliance Chair Search Committee (EAS, 2011-2012)
College of Engineering Strategic Planning Workshop (2011-2012)
Co-Director, Southeastern Center for Air Pollution and Epidemiology (2010-present)
Chair, EnvE Graduate Committee (CEE, 2007-2010)
EnvE Facilities Committee (CEE, 2010-present)
Strategic Advisory Committee (CEE, 2007-2010)
Co-Chair, Faculty Search Committee (CEE, 2005-2006)
Chair, Graduate Committee (EnvE, 2005-2008)
Graduate Committee (CEE, 2005-2010)
Chair, ad hoc Committee on Courtesy Appointments (CEE, 2005)
Periodic Peer Review Committee (CEE, 2005)
Reappointment, Promotion and Tenure Committee (CEE, 2003-2005)
Program Coordinator, Environmental Engineering (CEE, 2001-2004)
Executive Committee (CEE, 2001-2004)
Ford Environmental Science and Technology Building Management Committee (Institute, 2001-2004)
Blue Skies Committee (2003, College)
Environmental Engineering Strategic Planning Committee (CEE, 2003)
Director, Air Resources and Engineering Center (Institute, 2002-…)
Reappointment, Promotion and Tenure Committee (CEE, 1998-2002)
Chair, Reappointment, Promotion and Tenure Committee (CEE, 2000-2002)
Regents' Professor Nominating Committee (College, 2001)
Dean's Task Force on Undergraduate Education (College, 2000-2001)
Computer Committee (CEE, 2000-2001)
EAS Chair Search Committee (Institute, 1999-2000)
Dean's Task Force on Student Centered Education: Co-Chair (College, 1999-2000)

Lake Lanier OIP Retreat (Institute, 2000).
CEE ad hoc Committee on Graduate Student Recruitment (CEE, 1999)
CEE South Georgia Initiative ad hoc committee (CEE, 1999)
CEE ad hoc Committee on Graduate Student Recruitment (CEE, 1998)
Science and Technology Center Committee (GIT, 1998-1999)
CEE Computing Course ad hoc committee (CEE, 1998)
Faculty Research Awards Committee (GIT, 1997)
Strategic Planning Committee (CEE, 1997)

PROFESSIONAL TESTIMONIES AND POLICY BRIEFINGS:

Blue-Ribbon Panel on Oxygenated Fuels, Washington, DC , May, 1999;
Subject: Ozone-forming potential of oxygenated fuels

Senator John Chaffee, Washington, DC , March, 1999;
Subject: Reactivity-based Ozone Control Regulations.

California Air Resources Board, Sacramento, CA , July, 1995;
Subject: Reactivity-based Ozone Control Regulations.

Ozone Transport Commission, Washington, DC, August, 1994;
Subject: Ozone Control Strategies in the Northeast.

Senior EPA Staff, Washington, DC, May 21, 1992;
Subject: NAS Ozone Study.

Presidential Commission (Mexican) on Adopting Daylight Savings Time, Mexico City, March 27, 1992;
Subject: Air Quality Issues Associated with Daylight Savings Time.

Senior White House Staff, Washington, DC February 12, 1992;
Subject: NAS Ozone Report. Presentation at the request of NAS.

United States Alternative Fuels Council, San Diego, CA, June 15, 1990;
Subject: Alternative Fuels.

California Commission on Clean Fuels, Sacramento, CA, August 9, 1988;
Subject: Clean Fuel Strategies.

California Energy Commission Energy Development Report Hearing,
Los Angeles, CA, June 24, 1988; Subject: Alternative Fuels.

Vice Presidential Committee for Regulatory Relief, Washington, DC,
May 1987; Subject: Strategies to Improve Air Quality.

CONTINUTING EDUCATION AND OTHER EDUCATIONAL ACTIVITIES

Series of Invited Lectures for European Research Course on Atmospheres, given to graduate students taking a short course at the University of Grenoble (2002-2003)

Air Pollution Control (Video Course) (GIT)

Urban and Regional Aerosol Modeling. AAAR Continuing Education Tutorial, AAAR, Cleveland, June 23, 1998.

"Including Sustainability in Engineering Courses and Curricula" Workshops given at TERI ,University (Delhi), Indian Institute of Technology-Gandhinagar and Indian Institute of Technology-Mumbai, January 12-16, 2015.

"Defining and Measuring Environmental Sustainability, Health, and Livability" Semester course associated with the NSF Sustainability Research Network

GRANTS AND CONTRACTS AWARDED AT GEORGIA TECH

"Integrated Analysis of Land Use-Based Policies for Improving Air and Water Quality: A Focus on Agricultural Reactive Nitrogen and Wildland Fire Emissions as Climate, Land Use and Anthropogenic Emissions Change" EPA, $789,820, 2/2016-1/2019, (PI).

"HRES-X: Scientific and Geographic Extension of an Operational High Resolution, Prognostic Air Quality System Providing Smoke Impacts Forecasts for Health Protection, Ecosystem Management and Economic Development Using Earth Observations." NASA, $ 456,536 8/2016-8/2019, (PI).

"The effect of ammonia on organic aerosols in a changing climate" EPA, $789,261, 2/2016-1/2019, (Co-I), (PI: R. Weber).

"Enhancing Daily PM2.5 Source Apportionment Data Fusion Methodology" Centers for Disease Control $121,467, 1/2015-12/2015 (co-PI)

"SRN: Integrated Urban Infrastructure Solutions for Environmentally Sustainable, Health and Livable Cities" NSF, $12,000,000, 08/01/2015-07/31/19; (Role: Co-Director and Georgia Tech PI; GT Portion $1,290,523)

"Assessing Air Quality Fields Developed Using Alternative Methods for Exposure and Epidemiologic Studies, Phase I: Intercomparison of Air Quality Fields for Ozone, NO_2, CO, SO_2, $PM_{2.5}$, and $PM_{2.5}$ Species" EPRI, $193,302, 05/01/2015-4/30/16; (Role: PI)

"Impacts of Energy Sector Emissions on Air Quality" Phillips 66, $668,373, 01/01/2015-12/31/17; (Role: Co-PI)

"CMAQ Modeling" NW Clean Air Agency, $69,171, 01/01/2016-12/15/16; (Role: Co-PI)

"Assessment of Spatial Aerosol Characterization in Atlanta" Southern Company, $56,000, 2016 (PI)

"Acquisition of Instrumentation for Real-Time Molecular Level Measurement of Atmospheric Gas- and Particle-Phase Compounds" NSF, $482,297, 09/01/2014; (Role: Co-PI)

"Dissemination of Nanotechnologies for Energy Production and Environmental Protection" NSF, $1,987,048, (GIT Portion: $90,000) 07/2010-06/2015, (Role GIT PI)

"Characterizing Daily PM2.5 Source Impacts over the US 2005-2012" Centers for Disease Control $149,387, 1/2015-12/2015 (co-PI)

"Dorm Room Inhalation to Vehicle Emissions (*DRIVE*) study," Health Effects Instutute $695,321, 12/2013-11/2015 (Grant to Emory; GIT Portion: $288, 831) (role: GIT PI).

"HERCULES: Health and Exposome Research Center: Understanding Lifetime Exposures" National Institute of Health, $4,653,860, 4/01/2013-3/31/2017 (Grant to Emory) (role: GIT Investigator).

"Characterizing the emissions on fine particulate matter in the vicinity of a rail yard", EPD, Georgia Dept. of Natural Resources, $124,599, 20012-2013. (role: PI) (GIT co-PI, M. Bergin).

"Impacts of Emission Changes on Air Quality and Acute Health Effects in the Southeast, 1993-2012" Health Effects Institute, $685,596, 12/2012-11/2015 (role: PI), (GIT co-PI, J. Mulholland).

"PIRE: Developing Low-Carbon Cities in the USA, China & India through Inter-Disciplinary Integration Across Engineering, Environmental Sciences, Social Sciences & Public Health" NSF, $3,999,686 (Grant to U. Minn.; GIT portion: $787,185), 12/2012-12/2016, A. Russell (role: GIT PI), (GIT co-PI: M. Bergin,).

"Southeastern Center for Air Pollution and Epidemiology (SCAPE), Joint Emory-Georgia Tech US EPA Clean Air Center," EPA, $7,999,995 (GIT portion: $3,590,576), 12/2010-12/2015, A. Russell (role: GIT PI, and co-director), (GIT co-PIs, J. Mulholland, M. Bergin, R. Weber, A. Nenes, T. Odman).

"Impacts of Energy Sector Emissions on Air Quality" ConocoPhillips, $581,500, Jan. 1, 2012-Dec. 31, 2014 (co-PI with A. Nenes).

"Assessment of Spatial Aerosol Characterization in Atlanta" Southern Company, $54,000, 2011 (PI)

"Impact of Climate-Responsive Design on Heat-Related Morbidity and Mortality in Large U.S. Cities: 2010 – 2050," Centers for Disease Control, $847,141, 2010-2013, co-PI (with B. Stone)

"Improving Operational Regional Air Quality Forecasting Performance through Emissions Correction Using NASA Satellite Retrievals and Surface Measurements," NASA, $648,566, 2011-2016, A. Russell (PI), (co-PIs Y. Hu and T. Odman),

"Assessment of Spatial Aerosol Characterization in Atlanta" Southern Company, $54,000, 2010 (PI)

"Regional air quality management aspects of climate change: Examination of climate-responsive controls and forest management practices on regional air quality and associated uncertainties," EPA, $599,963, A. Russell (PI), (co-PIs, A. Nenes, Y. Wang), 6/2009-5/2012.

"Improving Particulate Matter Source Apportionment" US EPA, $899,956, Dec. 1, 2008-Nov. 30, 2012 (PI)

"Impact of Volatile Organic Carbon (VOC) emissions on Air Quality " ConocoPhillips, $498,917, Jan. 1, 2009-Dec. 31, 2011 (co-PI with A. Nenes).

"Assessment of Spatial Aerosol Characterization in Atlanta" Southern Company, $50,000, 2009 (PI)

"Particulate and Gas Sampling of Prescribed Fire" Ga EPD, $59,562, April-Sept. 2007 (PI)

"Development and Assessment of Environmental Indicators: Application to Mobile Source impacts on Emissions, Air Quality, Exposure and Health Outcomes" US EPA, $499,512, Oct. 1, 2007-Sept 30, 2011 (PI)

"Assessing Near-field and Downwind Impacts of Reactivity-based Substitutions", $54,162, American Chemical Council, 2008 (PI)

"Characterization of Emissions and Air Quality Modeling for Predicting the Impacts of Prescribed Burns at DoD Lands." Army Corps of Engineers, Strategic Environmental Research and Development Program (SERDP) $1,045,432, April 1, 2008 - December 31, 2010 (co-PI with T. Odman)

"A new physiochemical CO2 separation method." Siemens, $100K, 2007-2008. (Co-PI with M. Fan)

"Mitigating the impact of forest fires on air quality in the Southeast," USDA, $499,780, 2/1/2007-1/31/2010 (co-PI with Y. Wang).

"Development a new amine-based solid CO2 sorbent." Environmental System Incorporation, $1,000,000, 2008-2012 (Co-PI with M. Fan)

"Interaction of ecosystems, fires, air quality and climate change in the Southeast", EPA National Center for Environmental Research, $749,047, 2005-2008. (co-PI with Y. Wang)

"Characterizing the emissions on fine particulate matter in the vicinity of a railyard", EPA Georgia Dept. of Natural Resources, $200,000, 2009-2011. (PI)

"Proposal to Study Health Effects and Associated Population Trends and Outcomes Impacted by Climate Change in Tennessee: Estimation of Future Air Quality" ETSU, $41,162, 2006-2007 (PI)

"Spatial Aerosol Characterization in Atlanta" Southern Company, $100,000, 2008 (PI)

"Benefits and Costs of Cross-Border Electric Power Transmission: Mexicali/Imperial County" RFF (sub on funding from LAUSPAU), $30,060, 2007-2008 (GIT-PI)

"Interaction of ecosystems, fires, air quality and climate change in the Southeast" US EPA, $749,057, March 1, 2005-Feb. 28, 2008 (co-PI with Y. Wang)

"Integrated Source/Receptor-Based Methods For Source Apportionment and Area-of-Influence (AOI) Analysis" US EPA, $444,899, Feb. 1, 2005-Jan. 31, 2008 (PI)

"Analysis of Air Quality Modeling Issues for the State of Texas" Texas Council on Environmental Quality, $120,000 to NC State ($40,000 to GIT), Oct. 1, 2004-Sept. 30, 2005 (GIT-PI)

"Regional Development, Population Trend, and Technology Change Impacts on Future Air Pollution Emissions" US EPA, $649,999, Dec. 1, 2004-Nov. 30, 2008 (co-PI with M. Chang)

"Sensitivity and Uncertainty Assessment of Global Climate Change Impacts on Ozone and Particulate Matter: Examination of Direct and Indirect, Emission-Induced Effects" US EPA, $988,746, October 1, 2003-Sept. 30, 2007 (PI)

"Support for Environmental Science and Technology Editorial Activities" American Chemical Society, ~$60,000 annually, January 1, 2004-Dec. 30, 2008 (PI)

"Factors Controlling PM2.5 in the Southeast: Factor Analysis of SEARCH Data and 3D Simulations" Southern Company, $123,718, October 1, 2003-Sept. 30, 2005 (co-PI with Y. Wang)

"Emissions Inventory and Process Reconciliation Using Molecular Markers and Hybrid/Inverse Photochemical Modeling with Direct Sensitivity Analysis" US EPA, $449, 828, Dec 1, 2003-Nov. 30, 2008 (PI)

"Preparing for and supporting INTEX through Integrated Analysis of Satellite and Sub-

Orbital MEASUREMENTS with Global and Regional 3-D Models" NASA $450,000, Randall Martin (Harvard-Smithsonian), PI. (GIT Portion: $167,565, Russell, GIT-PI)

"Sensitivity Analysis and Source Apportionment for VISTAS," Southeastern States Air Resource Managers / Visibility Improvement - State and Tribal Association of the Southeast December 5, 2003 through December 31, 2008, $ 474,773. (T. Odman, PI, Russell Co-PI)

"Mexico-Imperial Valley Air Quality Modeling and Monitoring Program in Support of LASPAU's Border Ozone Reduction and Air Quality Improvement Program" LASPAU: Academic and Professional Programs for the Americas, $500,000, A. Mendoza-Dominguez (ITTESM) PI, (GIT Portion, $74,999) June 1, 2004-May 30, 2006 (GIT PI)

"Assessing the Impacts of Hartsfield Airport on Particulate Matter and Ozone," NASA Glenn Research Center, August 1, 2003 through October 31, 2004, $116,291 (PI)

"Multiple Pollutants and Cardiorespiratory Outcomes" NIEHS; Sept. 2002-Aug. 2006. $326,902, (Jim Mulholland, GIT-PI, Russell, Co-PI)

"Multiple Pollutants and Risk of Cardiac and Respiratory Emergency Department Visits in Atlanta" Jan. 1, US EPA. 2002-Dec. 31, 2004. (Jim Mulholland, GIT-PI, Russell, co-PI)

"Air quality modeling for the SAMI initiative," Southern Appalachian Mountain Initiative, $717,770, April, 1997-June, 2003, (P.I.)

"Characterization of the Spatial Patterns of Particulate Matter in the Atlanta Region" Georgia Power, $258,000. January, 1999-August, 2003, (P.I.)

"Fall Line Air Quality Study" State of Georgia, $2,800,000 April, 2000-Sept, 2004, (co-P.I. at GIT.)

"Adaptive Grid Modeling and Direct Sensitivity Analysis for Predicting the Air Quality Impacts of DOD Activities" to the Department of Defense, Strategic Environmental Research and Development Program (SERDP); one year; $100,000; June, 2002-Jue, 2003 (co-PI).

"Partnership for Environmental Research and Community Health" US EPA/U. West Florida, GIT Funding: $450,000 Dec., 2002-Dec, 2004, (co-P.I. at GIT.)

"Spatial Assessment of Ozone and Particulate Matter in the Gulf Coast Region, Response to Controls and Advanced Field Monitoring as Part of the GC-ARCH SuperSite Study." US EPA, $5,000,000. D. Allen (U. Texas) PI GIT Funding: $500,000 June, 2000-July, 2003, (P.I. at GIT.)

"Emissions Assessment in Georgia" Georgia Power, $200,000. January, 2001-August,

2003, (P.I.)

"Fine Particle Analysis in India" WorldBank, $30,000, July 2002-July 2003

"Characterization of Organic Aerosol Sources" Georgia Power, $320,000, January 2001-December, 2005 (co-PI).

"Reactivity Assessment in the Eastern US" American Chemical Council, $50,000, January 2002-Dec. 2003 (grant to GTF) (PI).

"Reactivity Assessment in the Eastern US" California Air Resources Board, $15,000, January 2002-Dec. 2002 (PI).

"Air quality modeling and sensitivity analysis of the Mexico-U.S. border area," National Science Foundation, $95,000, July 1, 1997-June 30, 2000, P.I.

"Southeastern Center for Integrated Study of Secondary Air Pollutants", U.S. EPA, $3,000,000, April 1, 1998-March 31, 2001. (co-P.I)

"Air quality modeling for the SAMI initiative Amendments-II," Southern Appalachian Mountain Initiative, $100,000, June, 2001-Dec., 2002, P.I.

"Aerosol Modeling of the Northeastern United States" U.S. EPA, $3,000,000 (subcontract from Caltech) GIT portion: $210,000, April 1, 1998-March 31, 2001. (P.I. at GIT)

"Source Characterization and Emissions Quantification Technology Development" U.S. EPA, $200,000 April, 1999-March, 2001, (co-P.I.)

"Characterization of the Spatial Patterns of Particulate Matter in the Atlanta Region" Georgia Power, $115,000. January, 1999-December, 1999, (P.I.)

"Reactivity Quantification and Uncertainty Assessment over Regional Domains" California Air Resources Board, $240,000 (GIT Portion: $80,000), April, 1999-March, 2001, (P.I. at GIT.)

"Particulate Matter in the Atlanta Region" Georgia Power, $65,000. August, 2001-December, 2002, (P.I.)

"Emissions Estimation and Uncertainty", Georgia Power, $200,000. January 2001-December, 2002. (P.I.)

"Air quality modeling for the SAMI initiative Amendments-I," Southern Appalachian Mountain Initiative, $100,000, June, 2000-Dec., 2001, P.I.

"Southern Oxidants Study: Phase III," Environmental Protection Agency, $270,000, Sept, 2000-July., 2002, P.I.

"Biogenic Emissions Uncertainty Analysis" Electric Power Research Institute, $15,000, June 2001-June 2002.

"Air quality modeling for the SAMI initiative," Southern Appalachian Mountain Initiative, $799,000, June, 1997-May., 2000, P.I.

Dr. Russell was also P.I. or co-P.I. on approximately $4 million in research projects at Carnegie Mellon University.

DIRECT RESEARCH ADVISEMENT

Post Doctoral (current association/position):

1. Huizhong Chen (Georgia Tech)
2. Haofei Yu (Asst. Prof. U. Central Florida)
3. Momei Qin (Georgia Tech)
4. Ehsan Goodarzi (Georgia Tech)
5. Cong Liu (Assoc. Prof. Nankai University, China)
6. David Lavoue (France)
7. Siv Balachandran (Asst. Prof. University of Cincinnati)
8. Heather Holmes (Asst. Prof., U. Nevada, Reno)
9. Alexandra Tsimpidi (Max Planck Institute, Mainz)
10. Vlassis Karydis (Max Planck, Mainz)
11. Hanlim Lee (Prof. Pusan National University, Korea)
12. Yangjun Wang (Assoc. Prof., Shanghai University)
13. Ethimios Tagaris (Res. Scientist, National Observatory, Greece)
14. K. Manomaiphiboon (Prof., Thailand)
15. Xuesong Wang (Assoc. Prof., Peking University)
16. Yueh-Jin Yang (Engineer, Cal. Air Res. Board)
17. Jim Boylan (Georgia Dept. of Natural Resources)
18. M. Khan (Res. Scientist, NASA)
19. Yongtao Hu (Senior Res. Scientist, GIT)
20. Alper Unal (Prof. Istanbul Technical University, Turkey)
21. Wei Liu (co-advise) (Consultant, CA)
22. Sangil Kim (co-advise) (Res. Prof., KIIST, Korea)

Students:

Ph.D:

1. Yilin Chen (exp. 2020)
2. Ran Huang (exp. 2019)
3. Raj Lal (exp. 2018)
4. Josephine Bates (exp. 2017, Presidential Fellow, ARCs Fellowship)
5. Jennifer Mouitnho (exp. 2017, Presidential Fellow; NSF Fellow, Best Poster, AAAR 2016)
6. Alex Yu (exp. 2018)
7. Lucas Henneman (exp., 2017, NSF Fellow, Presidential Fellow; Post-doc, Harvard)
8. Bryce Dutcher (2015, U. Wyoming, Post-doc, UWyo) (co-chair w. M. Fan)
9. Cessunica Ivey (2016, Sloan Fellow; EPA STAR Fellow; AWMA Scholarship; Post-doc, U. Nevada, Reno)
10. Marcus Trail (2014, Georgia Power Fellow, Amina Ghosh Prize) (Post Doc, Emory; Eng. Ga Dept. of Env. Prot.)
11. Peng Liu (2015) (Post-doc, US EPA)
12. Boris Galvas (2013, LAUSPAU Fellow) (Prof. Universidad de La Salle, Bogota, Columbia)
13. Aika Yano (2014, co-advise with T. Odman) (Underwriters Laboratories)
14. Fernando Garcia (2013, co-advise with T. Odman, AWMA outstanding student Scholarship) (Asst. Prof., North Carolina State University)
15. Wenxian Zhang (2013) (Sierra Research)

16. Soonchul Kwon (2011, co-advisor with Maohong Fan) (Assist. Prof., Pusan National University, Korea)
17. Shannon Capps (2012, co-advisor, NSF Fellow, Proctor and Gamble Fellow, Outstanding Student Paper Award, American Geophysical Union) (Post-doc, U. Colorado; Asst. Prof, Drexel, 2015)
18. Siv Balachandran (2013) (Amina Ghosh Fellowship, 2008) (Asst. Prof. University of Cincinnati)
19. Gretchen Goldman (co-advise, 2011) (Union of Concerned Scientists)
20. Jorge Pachon (2011; Amina Ghosh Fellowship, 2007) (Prof. Universidad de La Salle, Bogota, Columbia)
21. Farhan Akhtar (GIT EAS, co-advised, 2009) (Res. Sci, US Dept. of State)
22. K.J. Liao (GIT, 2008) (AWMA Outstanding Student Award/Scholarship) (Asst. Prof. Texas A&M, Kingsville)
23. Burcak Kaynak (GIT, 2009) (Asst. Prof. Istanbul Technical Inst.)
24. Sangil Lee (GIT, 2006) (Best Grad. Paper, ASEE) (Prof. Korean University of Science and Technology)
25. Bo Yan (GIT-EAS, 2009) (South Carolina Department of Health Environmental Control)
26. Jaemeen Baek (GIT, 2009) (Best Grad. Paper, ASEE) (U. Iowa)
27. Amit Marmur (GIT, 2006) (AWMA Outstanding Student Award/Scholarship, currently VP, Nesher Cement Enterprises)
28. Sergey Napelenok (GIT, 2006) (AMS Scholarship) (Res. Sci. US EPA)
29. Di Tian (GIT, 2006) (Currently at GA DNR)
30. Michelle Bergin (GIT, 2006) (EPA STAR Fellow)(Duke, Univ.)
31. Dan Cohan (GIT, 2004) (AWMA Outstanding Student Award/Scholarship, CMAS Award) (currently Assoc. Prof. at Rice University)
32. Sun-Kyoung (Helena) Park (GIT, 2005) (Professor, Hanyang Cyber University Korea, Best Teacher, 2013)
33. Jim Wilkinson (CMU 2004) (Golder and Assoc.)
34. Zohir Chowdhury (2004) (Best Paper, Better Air Quality, 2004) (Assoc. Prof., San Diego State University)
35. K. Manophiboon (GIT, 2004) (Prof., Thailand)
36. Maudood Kahn (GIT, 2003) (NASA)
37. Amir Hakami (GIT, 2003) (Assoc. Prof., Carleton Univ.)
38. Jim Boylan (GIT, 2002) (Best Thesis) (Georgia Dept. of Natural Resources)
39. Jerome Kubler (EPFL, 2002) (Project Manager, Swatch group)
40. Vijay Sathya (EPFL, 2002) Principal, Diginoc
41. Alberto Mendoza (GIT, 2001) (Professor, Dept. Chair, ITESM)
42. Andre Butler (GIT, 2000) (Professor and Chair, Mercer University: Teacher of the Year, 2002)
43. Karen Chess (CMU, 1998) (Bennett Prize) (Vice President, Strategic Development, Fuel Tech, Naperville, IL)
44. Naresh Kumar (CMU, 1995)(Program Manager, EPRI)
45. Laurie McNair Triplett (CMU, 1995) (AWMA Student Paper: First prize)(Los Alamos National Lab)
46. John Boyle (CMU, 1993) (Bennett Prize; AWMA Student Paper: First place) (Senior Director, Fuel Tech)
47. Talat Odman (CMU, 1993) (AWMA Student Paper: Second place)(Principal

Engineer, Georgia Tech)

M.S.

1. Abi Lawal (exp. 2016)
2. Xinbei Guan (exp. 2016)
3. Vasudha Bhogeni (exp. 2016)
4. Jennifer Moutinho (exp. 2015)
5. Poornima Sampath (exp. 2016)
6. Josephine Bates (exp. 2016)
7. Raj Lal (exp. 2016)
8. Ran Huang (exp. 2016)
9. Karoline Johnson (co-advisor with M. Bergin) (2015) (currently: Duke)
10. Yukti Arora (2015)
11. Victor Miller (2014)
12. Lina Luo (2015)
13. Rawan Al-Afifi (2014) (Trinity)
14. Kyle Digby (2013)(ARA)
15. Jeremiah Redman (2013) (Georgia Power Fellow) (Trinity consulting)
16. Cesunica Ivey (2012 (GIT, Sloan Fellow)
17. Marissa Meier (2012) (Georgia Power Fellow) (currently at ENVIRON)
18. Laura Parry (2010) (Georgia Power Fellow) (Jacobs Engineering)
19. Marcus Trail (2010) (Georgia Power Fellow, Amina Ghosh Fellowship, 2009) (Emory University)
20. Roshini Shankaran (2009) (Trinity)
21. Julie Simon (2008) (Georgia Power)
22. Santosh Chandru (2008) (Trinity)
23. Emily Lantrip (2009; Medical School)
24. Kelly Smolinski (2006) (MACTEC/AMEC)
25. Soonchul Kwon (2006) (Prof. Pusan University)
26. Hyong-Kook Kim (2007) (U. Southern Florida)
27. Stephanie Kwan (co-advised, 2007) (Climate Change Officer, Sindicatum Carbon Capital)
28. Evan Cobb (GIT, 2006) (CH2MHill)
29. Kuo-Len Liao (GIT, 2006) (Prof., Texas A&M, Kingsville)
30. Ryan Gesser (GIT, 2006) (Georgia Pacific)
31. Rosa Chi (GIT, 2004) (Georgia Power)
32. Mohammad Arhami (Professor, Iran)
33. Sergey Napelenok (GIT, 2004) (EPA)
34. Kangwook Kim (GIT, 2003) (NC State)
35. Azin Sahabi
36. Hanlim Lee (GIT, 2002) (Prof. Pusan University)
37. Gautham Ramachandran (GIT, 2003)
38. Melissa Antoine (GIT, 2002) (Georgia Pacific)
39. Herman Holm (GIT, 2002) (Sage Environmental)
40. Michael Andrew (GIT, 2000)
41. Brigitte Bouvier (CMU) (Westinghouse)
42. Michelle Bergin (CMU) (Duke University)
43. Joel Harris (CMU) (Raytheon)

Undergraduate (dates shown are period of project work):

1. Xinbei Guan (2014-2016)
2. Nick Young (2015-2016)
3. Caroline Walden (2014-2016)
4. Alex Hyman (2014)
5. Tanmay Sanhi (2013)
6. Natalie Nora (2013)
7. Ena Lopez (2012)
8. Amy Christensen (2011-2014)
9. Chelsea Dyess (2010-2012)
10. Rachel Greiner (2011-2013)
11. Bryan Jones (2011-2012)
12. Cesunica Ivey (2010-2011)
13. Samuel Ward (2008-2009)
14. James Baynum (2009-2011)
15. Laura Perry (2007-2008)
16. Marcus Trail (2007-2008)
17. Nick Culpepper-Hickey (2007-2008)
18. Sara Nichols (2006-2007)
19. Shannon Cohan (2006-2007)
20. Michael Chamber (2006)
21. David Massey (2005)
22. Griffin Wasdin (2005)
23. Evan Cobb (2004-2005)
24. Marco Trigueros (2006)
25. Annie Gillespie (2004-2005)
26. Eric Walthall (GIT, 2006)
27. Clayton Milligan (GIT, 2004)
28. Anthony Prevost (GIT, 2002)
29. Sara Henry (GIT, 2001)
30. Aleacia Jenkins (GIT, 2000)
31. Mellissa Antoine (GIT, 1999)
32. Herman Holm (GIT, 1999)
33. Steven Porter (GIT, 1999)
34. Weseley Parkmond (GIT, 1999)
35. Jimmy Thomas (GIT, 1999)

High School

1. Bo Fan (currently, Columbia)

Research Scientists and Engineers

2. Talat Odman (Georgia Tech)
3. Yongtao Hu (Georgia Tech)
4. Maohong Fan (Prof. U. Wyoming, 2008)

Visiting Professors, Scholars and Students

1. Wenjun Meng (Peking University)
2. Zhijian Zhao (Tsinghua University)
3. Prof. Shi Guoliang (Nankai University)
4. Dennis Wong (Southern China University)
5. Baolei Lyu (Tsinghua University)
6. Momei Qin (Peking University)
7. Prof. Mei Zheng (Peking University)
8. Tanmay Sanhi, (IIT-Delhi)
9. Prof. Sachchida Tripathi (IIT-Kanpur)
10. Prof. Mansur Amanov (Uzbekistan)
11. Prof. Yinghui Han (North China Electric Power Univ., Hebei, China)
12. Prof. Guodong Jiang (Nanjing University)
13. Anne-Fleur Kouredan (Institue Polytechnique, Grenoble, France)
14. Kuojen Liao (Prof. Texas A&M)
15. Guofen Chen (Peking University: Currently, US EPA)
16. Cecilia Airola (Ecoles de Mines, France)
17. Yuan Cheng (Tsinghua University)
18. Shen Cui (Peking University)
19. Freddy Vargas (Columbia National University)
20. Yangjun Wang (Prof., Shanghai University)
21. Chong Bum Lee (Prof. Kangwon National University)
22. Asude Hanedar (Istanbul Technical University)
23. Camilla Baroncelli (U. Florence)
24. Dongho Kim (Res. Sci., Korea)
25. Phulumani Ngema (Humphrey Fellow, South Africa)
26. Zohir Chowdhury (Prof., San Diego State University)
27. Florian Habermacher (EPFL, Switzerland)
28. Xiseoung Wang (Post-Doc., PKU, China)
29. Ana Vanoye (ITESM, Mexico)
30. Laurent Bocahut (Ecole Polytechnique, France)
31. Vijay Sathya (EPFL, Switzerland)
32. Xiaoping Wang (Princeton)
33. Jerome Kubler (EPFL, Switzerland)
34. Laurent Cosandey (EPFL, Switzerland)
35. Kadir Alp (Prof., Turkey)
36. Jean-Michel Giovanoni (Res. Sci., EPFL, Switzerland, retired)

Allana Rae Sager

[redacted]

Industry Experience

Dexter ATC Field Services, *Beaumont, TX* *August 2016-Present*
Environmental Engineer at Total Petrochemicals & Refining USA, Inc.

Water

- Manage and re-develop the Total Port Arthur Refinery water program
- Coordinate with operations and NELAP contract lab to ensure TPDES compliance
- Develop and expand onboarding training procedures for operations, includes all new Environmental sampling and regulatory compliance requests
- Coordinate training sessions for operations to build regulatory understanding of rules driving operational activities at refinery units
- Submit and manage monthly DMR reports through NetDMR system
- Evaluate and modify procedure for monitoring all tank Fire Walls within PAR facility
- Manage quarterly biomonitoring sampling and reporting
- Coordinate sampling with operations and report findings on annual report in NetDMR
- Provide data, review and comment on TPDES permit renewal application
- Provide data, review and comment on TPDES permit amendment applications for the addition of new process units
- Coordinate co-sampling for TCEQ-TPDES compliance investigations
- Communicate and develop reports for permit violations to the Total Environmental Manager and TCEQ
- Track monthly potable and process water usage
- Compile annual water usage for corporate and state reporting through TCEQ and the Texas Water Development Board
- Carry out semi-annual QQQ reporting and evaluate facility for improvements

Air

- Manage and carry out HON reporting at the Total PAR facility
- Coordinate and manage data gathering with local BWON consultant for annual TAB report
- Evaluate and strengthen PAR BWON program and increase reporting transparency
- Coordinate with the Total LDAR and Consent Decree coordinator to develop and guide BWON improvements to ensure continued compliance with Consent Decree requirements
- Track monthly EBU benzene samples for in-house reporting and 12-month rolling benzene concentration
- Support Title V team in gathering data for Annual Emissions Inventory (AEI) report
- Manage monthly El Paso and PM testing of cooling towers
- Report any exceedances in NSR permitted MAERT limits and coordinate corrective actions
- Report PM and VOC exceedances for Title V compliance and STEERs reporting
- Monitor and manage records to ensure special conditions are met in site specific NSR permit

Solid Waste

- Coordinate with Total Solids Waste specialist to improve disposal of BWON waste
- Coordinate with Total Solids Waste specialist for semi-annual groundwater monitoring for TAB reporting
- Developing RCRA knowledge base

Encana Oil & Gas (USA) Inc., Midland, TX *April 2015-May 2016*
A&M Representative for Permian Basin Joint Industrial Project

- Aid senior corrosion specialist in chemical analysis of hydraulic fracturing waters
- Assist in monitoring microbial activity in hydraulic fracturing source water and storage pits
- Coordinate communication of results from Encana field study
- Coordinate communication of results from TAMU filtration treatment study of hydraulic fracturing water
- Publish joint study results displaying the efficiency of low energy filtration in reducing microbial activity in hydraulic fracturing water

Work Experience

Texas A&M Engineering Experiment Station (TEES), College Station, TX *January 2015-May 2016*
Graduate Research Assistant for the Global Petroleum Research Institute

- Provide technical support to industry regarding industrial water processing
- Coordinate oil & gas water treatment efficiency study at pilot plant facility
- Collect and process water quality samples from client field locations
- Presented innovative water sampling kit to the Power Across Texas State Organization
- Published Oil &Gas water management project findings at SPE URTEC Conference
- Presented publication to industrial panel representing active players in the Permian Basin
- Develop basic membrane selection and operation techniques from best management practices

Leadership

Department of Health & Kinesiology, Texas A&M University *January 2013-May 2016*
PADI Dive Master

- Taught introductory diving skills to new, semi-new and advanced divers for PADI certification
- Taught advanced diving skills for skill and professional development for PADI Advanced certification
- Taught rescue and first aid response skills for PADI Rescue Diver certification
- Observed and emphasized the importance of safety to all skill levels and would provide examples of un-safe diving practices for more efficient learning
- Enhanced personal leadership and teaching skills through constructive feedback from senior diving instructors
- Developed ability to work independently through self-discipline and attention to deadlines built into the Dive Master training program
- Aided in creating a supportive team setting with all dive masters in the Dive Master Training Program working to support the PADI courses taught at Texas A&M University

Education

Texas A&M University, College Station, TX *May 2016*
Master of Science in Civil Engineering
Area of Study: Environmental Engineering
Certificate of Business
100% of education financed through loans, and part time employment
Engineer in Training (EIT)

Texas A&M University, College Station, TX *August 2013*
Bachelor of Science in Biology and Biochemistry
100% of education financed through loans, grants, and scholarships

Related Work Certifications

TWIC Certification
Willing to work towards RCRA
Willing to work towards DOT

Technical Skills

Prioritizing Assigned Tasks
NSR Permit Analysis
BWON Program Management
TPDES Permit Analysis
Best Management Practices for Compliance Systems
Implementing Water Reuse Filtration Separations (MF, NF, RO)
Working With Diverse Teams
Troubleshooting Permit Exceedances in Relation to Unit Upsets
Project Management
Clear Communication; Verbal, Written
LIMS Software; Pi Process Book
Excel (Advanced)
Reporting Permit Violations (Written and Verbal Responses) to TCEQ

Activities

Member of the Engineers Without Borders Program 2016-Present
Member of the American Society of Civil Engineers 2015-Present
Member of the American Chemical Society 2015-Present
Member of the American Water Works Association 2015-Present

MICHELLE M. SCHERER
Donald E. Bently Professor of Engineering
Chair, Department of Civil and Environmental Engineering
University of Iowa, Iowa City, IA 52242-1527
Phone: (319) 335-5654 Fax: (319) 335-5660
Email: michelle-scherer@uiowa.edu

EDUCATION

University of Virginia	Systems Engineering	B.S., 1989
University of Connecticut	Civil and Environmental Engineering	M.S., 1994
Oregon Graduate Institute of Science & Technology	Environmental Science & Engineering	Ph.D., 1998

ACADEMIC EXPERIENCE

- Chair, Civil and Environmental Engineering (December 2010 – Present)
- Director of Graduate Studies, Civil and Environmental Engineering (Sept 2007 – Dec 2010)
- Coordinator, Environmental Engineering and Science Graduate Prog. (Sept 2007 – Sept 2010)
- Professor (July 2010 – Present) University of Iowa, Iowa City, IA.
- Associate Professor (July 2004 – June 2010) University of Iowa, Iowa City, IA.
- Assistant Professor (August 1998 – June 2004) University of Iowa, Iowa City, IA.

PUBLICATIONS

(last 5 years only shown, 56 articles total, h-index of 28 in Web of Science; > 3,000 citations)

1. Frierdich, A.J., Spicuzza, M.J, Scherer, M.M. Oxygen Isotope Evidence for Mn (II)-Catalyzed Recrystallization of Manganite (γ-MnOOH). *Environ Sci Technol* **2016**, *50*, 6374-6380. DOI. 10.1021/acs.est.6b01463.
2. Latta, D.E., Boyanov, M.I., O'Loughlin, E.J., Kemner, K.M., Scherer, M.M. Reaction of uranium(VI) with green rusts: Effect of interlayer anion. *Current Inorganic Chemistry*. **2015**, 5, 156-168.
3. Frierdich, A.J., Helgeson, M., Liu C., Wang, C., Rosso K.M., Scherer M.M. Iron atom exchange between hematite and aqueous Fe(II). *Environ Sci Technol* **2015**, *14*, 8479-8486. DOI. 10.1021/acs.est.5b012.
4. O'Loughlin, E.J., Gorski, C.A, Scherer, M.M. Effects of phosphate on secondary mineral formation during the bioreduction of akaganeite (β-FeOOH): Green rust versus framboidal magnetite. *Curr. Inorganic Chem*, **2015**, *5*, 214-224.
5. Frierdich, A. J.; Beard, B. L.; Rosso, K.M.; Scherer, M. M.; Spicuzza, M.J.; Valley, J.W., Johnson, C. M., Low temperature, non-stoichiometric oxygen-isotope exchange coupled to Fe(II)-goethite interactions. *Geochim. Cosmochim. Acta* **2015,** *160*, 38-54.
6. Anke Neumann, A., Lingling Wu, Weiqiang Li, Brian Beard, Clark M. Johnson, Kevin M. Rosso, Andrew Frierdich, and Michelle M. Scherer. Atom Exchange between Aqueous Fe(II) and Structural Fe in Clay Minerals. *Environ Sci Technol* **2015**, 49(5), p. 2786-2795. DOI. 10.1021/es504984q
7. Viktor Tishchenko, Christof Meile, Michelle Scherer, Tim Pasakarnis, Aaron Thompson, Fe^{2+}-catalyzed iron atom exchange and re-crystallization in a tropical soil. *Geochim Cosmochim Acta*

2015, 191-202. DOI: 10.1016/j.gca.2014.09.018

8. Timothy Pasakarnis, Michael McCormick, Gene Parkin, Aaron Thompson, Michelle Scherer, Fe(II)aq - Fe(III)oxide electron transfer and mixing: Effect of organic carbon. *Environmental Chemistry*. **2014.** *12(1)*, 52-63. DOI. 10.1071/EN14035
9. Robert M. Handler, Andrew Frierdich, Clark M. Johnson, Kevin M. Rosso, Brian L. Beard, Chongmin Wang, Drew E. Latta, Anke Neumann, Timothy Pasakarnis, W.A.P.J. Premaratne, Michelle M. Scherer, Fe(II)-catalyzed recrystallization of goethite revisited. *Environ Sci Technol* **2014**, 48, 11302−11311. DOI: 10.1021/es503084u.
10. Frierdich, A. J.; Beard, B. L.; Reddy, T. R.; Scherer, M. M.; Johnson, C. M., Iron isotopic fractionation between aqueous Fe(II) and goethite revisited: New insights based on a multi-direction approach to equilibrium and isotopic exchange rate modification. *Geochim. Cosmochim. Acta* **2014,** *139*, 383-398.
11. Frierdich, A. J.; Beard, B. L.; Scherer, M. M.; Johnson, C. M., Determination of the Fe(II)aq-magnetite equilibrium iron isotope fractionation factor using the three-isotope method and a multi-direction approach to equilibrium *Earth Planet. Sc. Lett.* **2014**, (391), 77-86.
12. Timothy S. Pasakarnis, Maxim I. Boyanov, Kenneth M. Kemner, Bhoopesh Mishra, Edward J. O'Loughlin, Gene Parkin, and Michelle M. Scherer. Influence of Chloride and Fe(II) Content on the Reduction of Hg(II) by Magnetite *Environ. Sci. Technol.*, **2013**, *47* (13), pp 6987–6994. DOI: 10.1021/es304761. *Tribute Issue for Rene Scharzenbach.*
13. Anke Neumann, Tyler L. Olson, and Michelle M. Scherer. Spectroscopic Evidence for Fe(II)–Fe(III) Electron Transfer at Clay Mineral Edge and Basal Sites. *Environ. Sci. Technol.*, **2013**, *47* (13), pp 6969–6977. DOI: 10.1021/es304744v. *Tribute Issue for Rene Scharzenbach.*
14. Vitaly Alexandrov, Anke Neumann, Michelle M. Scherer, and Kevin M. Rosso. Electron Exchange and Conduction in Nontronite from First-Principles *J. Phys. Chem. C*, **2013**, *117* (5), pp 2032–2040 DOI: 10.1021/jp3110776.
15. Edward J. O'Loughlin, Maxim I. Boyanov, Theodore M. Flynn, Christopher A. Gorski, Scott M. Hofmann, Michael L. McCormick, Michelle M. Scherer, and Kenneth M. Kemner. Effects of Bound Phosphate on the Bioreduction of Lepidocrocite (γ-FeOOH) and Maghemite (γ-Fe2O3) and Formation of Secondary Minerals. *Environ. Sci. Technol.*, **2013**, *47* pp 9157–9166 DOI**:** 10.1021/es400627j.
16. Gorski, C., D. E. Latta, and M. M. Scherer (**2012**), Influence of Fe^{2+} catalyzed Fe oxide recrystallization on metal cycling: A brief review, *Biochemical Society Transactions*, *40*(6), 1191-1197.
17. Latta, D. E., J. E. Bachman, and M. M. Scherer (**2012**), Fe Electron Transfer and Atom Exchange in Goethite: Influence of Al-Substitution and Anion Sorption, *Environmental Science & Technology*, *46*(19), 10614-10623.
18. Rubasinghege, G., P. K. Kyei, M. M. Scherer, and V. H. Grassian (**2012**), Proton-promoted dissolution of alpha-FeOOH nanorods and microrods: Size dependence, anion effects (carbonate and phosphate), aggregation and surface adsorption, *Journal of Colloid and Interface Science*, *385*, 15-23.
19. Frierdich, A. J., M. M. Scherer, J. E. Bachman, M. H. Engelhard, B. W. Rapponotti, and J. G. Catalano (**2012**), Inhibition of Trace Element Release During Fe(II)-Activated Recrystallization of Al-, Cr-, and Sn-Substituted Goethite and Hematite, *Environmental Science & Technology*, *46*(18), 10031-10039.
20. Gorski, C. A., R. M. Handler, B. L. Beard, T. Pasakarnis, C. M. Johnson, and M. M. Scherer (**2012**), Fe Atom Exchange between Aqueous Fe^{2+} and Magnetite, *Environmental Science & Technology*, *46*(20), 12399-12407.
21. Latta, D. E., M. I. Boyanov, K. M. Kemner, E. J. O'Loughlin, and M. M. Scherer (**2012**), Abiotic

reduction of uranium by Fe(II) in soil, *Applied Geochemistry*, *27*(8), 1512-1524.

22. Chen, H., A. Laskin, J. Baltrusaitis, C. A. Gorski, M. M. Scherer, and V. H. Grassian (**2012**), Coal Fly Ash as a Source of Iron in Atmospheric Dust, *Environmental Science & Technology*, *46*(4), 2112-2120.
23. Latta, D. E., C. A. Gorski, M. I. Boyanov, E. J. O'Loughlin, K. M. Kemner, and M. M. Scherer (**2012**), Influence of Magnetite Stoichiometry on U-VI Reduction, *Environmental Science & Technology*, *46*(2), 778-786.
24. Schaefer, M. V.; Gorski, C. A.; Scherer, M. M. Spectroscopic evidence for interfacial Fe(II)-Fe(III) electron transfer in a clay mineral. *Environ. Sci. & Technol.* **2011**, *45*, (2), 540-545, DOI: 10.1021/es102560m.
25. Larese-Casanova, P.; Cwiertny, D.M.; Scherer M.M. Nanogoethite formation from oxidation of Fe(II) sorbed on aluminum oxide: implications for contaminant fate. *Environ. Sci. & Technol.* **2010.** *44*, (10), 3765-3771, DOI: 10.1021/es903171y.
26. Fu, H.; Cwiertny, D. M.; Carmichael, G. R.; Scherer, M. M.; Grassian, V. H. Photoreductive dissolution of Fe-containing mineral dust particles in acidic media. *J. Geophys. Res., [Atmos.]*. **2010**, *D11304*, DOI: 10.1029/2009JD012702.
27. Rubasinghege, G.; Lentz, R.W.; Scherer, M. M.; Grassian, V.H. Simulated atmospheric processing of iron oxyhydroxide minerals at low pH: Roles of particle size and acid anion in iron dissolution. *Proc. Natl. Acad. Sci. U.S.A.* **2010**. *107*, (15), 6628-6633, DOI: 10.1073/pnas.0910809107.
28. Beard, B. L.; Handler, R.; Scherer, M .M.; Wu, L.; Czaja, A. D.; Heimann, A; Johnson, C. M. Iron isotope fractionation between aqueous ferrous iron and goethite. *Earth Planet. Sci. Lett.* **2010**, *295*, (1-2), 241-250, DOI: 10.1016/j.epsl.2010.04.006.
29. Gorski, C. A.; Nurmi, J. T.; Tratnyek, P. G.; Hofstetter, T. B.; Scherer, M. M. Redox behavior of magnetite: Implications for contaminant reduction. *Environ. Sci. Technol.* **2010**, *44*, (1), 55-60, DOI: 10.1021/es9016848.
30. Rosso, K. M.; Yanina, S. V.; Gorski, C. A.; Larese-Casanova, P.; Scherer, M. M. Connecting observations of hematite (α-Fe_2O_3) growth catalyzed by Fe(II). *Environ. Sci. Technol.* **2010**, *44*, (1), 61-67, DOI: 10.1021/es901882a.
31. Rubasinghege, G.; Lentz, R.; Park, H.; Scherer, M. M.; Grassian, V. H. Nanorod dissolution quenched in the aggregated state. *Langmuir.* **2010**, 26(3):1524-1527, DOI: 10.1021/la903950e.
32. O'Loughlin, E.; Gorski, C.; Scherer, M. M.; Boyanov, M.; Kemner, K. Effects of oxyanions, natural organic matter, and bacterial cell numbers on the bioreduction of lepidocrocite (γ-FeOOH) and the formation of secondary mineralization products. *Environ. Sci. & Technol.* **2010,** *44*, (12), 4570-4576, DOI: 10.1021/es100294w.
33. Gorski, C. A. and Scherer, M. M. Determination of nanoparticulate magnetite stoichiometry by Mössbauer spectroscopy, acidic dissolution, and powder X-ray diffraction: A critical review. *Am. Mineral*. **2010**, *95*, 1017-1026, DOI: 10.2138/am.2010.3435.

AWARDS AND HONORS

- The May Brodbeck Distinguished Achievement Award for Faculty (2016)
- Selected by CEE undergraduate class to be recognized for excellence in teaching and dedication to student success (2015)
- Invited to give Keynote lecture at ACS National Meeting "Women Leaders in Environmental Chemistry" (2014)
- Malcolm Pirnie/AEESP Frontier in Research Award (2010)
- Robert and Virginia Wheeler Faculty Fellowship in Engineering (2010)
- AEESP Distinguished Service Award (2009)

- University of Iowa College of Engineering Faculty Excellence Award for Research (2008)
- University of Iowa Faculty Scholar Award (2006-2009)
- University of Iowa Obermann Scholar (2006)
- *Environmental Science & Technology* Reviewer Award (2004)
- Co-PI on SERDP Cleanup Project of the Year (2002)
- National Science Foundation CAREER Awardee (2000)

PROFESSIONAL SERVICE

- Member of EPA's Environmental Engineering Scientific Advisory Board (Jan 2014 – Present)
- Associate Editor, *Environmental Science & Technology* (2008 – 2012).
- Chair, Association of Environmental Engineering and Science Professors (AEESP) Bi-Annual National Conference 2009
- Founder of Telluride Workshop on Fe Biogeochemistry (Chair 2006 and 2014)

DAMIAN SHEA

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Raleigh, NC 27606
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EDUCATION

1985 Ph.D. Environmental Chemistry, University of Maryland, College Park, MD
1981 B.A. Chemistry, SUNY Plattsburgh, Plattsburgh, NY

PROFESSIONAL POSITIONS

2017- Founder and President of Statera Environmental, Inc. – Startup technology company
2011- Founder of Statera, LLC – Environmental Technology and Consulting
2014- Professor, Department of Biological Sciences, NC State University
2011-14 Professor and Founding University Director Southeast Climate Science Center, NC State University
2011-14 Leader, Global Environmental Change and Human Well-being Initiative, NCSU
2006-11 Professor and Founding Department Head, Department of Biology, NC State University
2001-06 Department Head, Department of Environmental and Molecular Toxicology, NCSU
1993- Assistant, Associate, Full Professor of Chemistry and Toxicology, NCSU
1991-93 Senior Research Scientist and Laboratory Manager, Battelle Memorial Institute, Duxbury, MA
1989-91 Principal Research Scientist, Battelle Ocean Sciences, Duxbury, MA
1987- Consultant on environmental toxicology/chemistry for various clients
1987-89 Assistant Professor, Department of Chemistry, University of Massachusetts, Dartmouth, MA
1987 AAAS/EPA Environmental Science and Engineering Fellow, U.S. EPA
1985-87 National Research Council Postdoctoral Fellow, National Bureau of Standards (now NIST)
1982-85 Research Assistant, Department of Chemistry, University of Maryland

SELECTED HONORS AND PROFESSIONAL MEMBERSHIPS

1978- Member, American Chemical Society
1988- Member, Society of Environmental Toxicology and Chemistry (SETAC)
1992- Study Section and *ad hoc* Grant Proposal Reviewer for EPA, NSF, NIH and other agencies
1998-11 Co-PI EPA Cooperative Training in Environmental Health Sciences Research
2000-01 Chair, EPA Peer Review Panel for EPA Water Quality Criteria for the Protection of Human Health
2002-04 Member, US AID Task Force to Develop Environmental Assessment Program for Armenia
2007-10 Member, Peer Review Team for cANIMIDA MMS Alaska Environmental Studies Program
2007-14 Program Director, Howard Hughes Medical Institute Undergraduate Science Education Program
2011-14 Founding University Director, Department of the Interior Southeast Climate Science Center

RELEVANT RESEARCH PROJECT EXPERIENCE (selected from over 50 projects)

1989-01 Several studies on the fate and effects of the *Exxon Valdez* Oil Spill
1991-93 Program Manager for the Boston Harbor Outfall Monitoring Program
1994-96 Historical loading and fate of contaminants to Boston Harbor and Massachusetts Bay
1995-98 Bioaccumulation of contaminants in right whales and pilot whales
1995-00 Sources, fate, and effects of pesticides and other chemicals at 25 National Wildlife Refuges in the Lower Mississippi River Alluvial Valley
2005- Mechanisms controlling bioavailability of PAH in aquatic systems
2008- Passive sampling devices for measuring polar and non-polar organic chemicals in water
2009- Organic chemical exposure and ecological effects in surface waters in China
2010-13 Incorporating Chemical and Biological Availability into the Risk Assessment of Oil Contaminated Soils (with Chevron Energy Technology Company)

QUALIFICATIONS

I am a Professor of Environmental Toxicology and Chemistry at North Carolina State University (NCSU). I received my Ph.D. in Environmental Chemistry from the University of Maryland in 1985 and was awarded a National Research Council Post-Doctoral Fellowship at the National Institute of Standards and Technology (1985-1987). In 1987, I was awarded an American Association for the Advancement of Science Environmental Science and Engineering Fellowship to work at the EPA, where I helped to develop the basis for sediment quality guidelines and revisions to national water quality criteria for toxic chemicals. This early work has helped form the basis for the EPA benchmark methodology now used to assess adverse effects chemicals to aquatic life (including sediment-dwelling organisms).

While working as an environmental consultant at Battelle (1989-1993), I led several projects investigating the fate and effects of the Exxon Valdez oil spill and served as lead scientist and program manager for numerous chemical contamination issues in coastal environments. In 1993, I joined the faculty at NCSU and developed a research and teaching program on the sources, fate, and effects of chemicals with a focus on the aquatic environment. From 2001 to 2006, I served as Head of the Department of Environmental and Molecular Toxicology and from 2006 to 2011 as Head of the Department of Biology. I also served as the Founding University Director of the U.S. Department of the Interior Southeast Climate Science Center and the Program Director for the Howard Hughes Medical Institute Undergraduate Science Education Program, both at NCSU.

I have a broad background and over 30 years of experience in environmental/analytical chemistry and applied toxicology with primary research interests in the detection, sources, behavior, and effects of chemicals in the aquatic environment. By combining my experience in chemistry, toxicology, and risk assessment, my ultimate goal is to improve our ability to assess chemical exposure and thereby improve human and ecological risk assessments. I have published over 85 peer-reviewed publications, over 100 technical reports, several book chapters, and over 200 abstracts of scientific presentations – almost all related to the detection, fate, effects, and risks associated with chemicals in the environment including metals, pesticides, PCBs, PAHs, and many unregulated emerging chemicals of concern. Over the past 20 years, I have been a leader in the development and application of passive sampling techniques for measuring chronic and bioavailable exposure to chemicals in water, sediment, and soil and incorporating those data in risks assessments.

I have developed and implemented procedures to collect and analyze environmental samples for trace levels of chemicals, supervised the sample collection, laboratory analysis, and/or data interpretation of over 100,000 water, sediment, and biota samples, and developed models of the fate and bioaccumulation of contaminants in the environment. I also have operated and been responsible for an EPA-certified Good Laboratory Practices (GLP) laboratory that utilizes the most stringent QA procedures for chemical testing.

I have served on numerous expert panels, including being selected by the U.S. Bureau of Ocean Energy Management to be the environmental chemistry and toxicology expert for offshore oil exploration in the Arctic and by the EPA to chair the bioaccumulation subcommittee reviewing EPA's revisions to National Water Quality Criteria.

My professional experience has been primarily in academia, but has included employment with the federal government in the 1980s (US EPA and NIST) and working with the private sector throughout my career. I was an environmental consultant (Battelle 1989-93) with clients including the US EPA and numerous industrial clients in the oil & gas and chemical industries. I have continued to consult for industrial clients on environmental issues that they face and in 2011 started an environmental technology and consulting company (Statera, LLC) helping our industrial clients balance the use of natural resources while protecting our environment. We also develop environmental sampling technologies and have a patent-pending sampling device that has spawned a startup company in 2017 (Statera Environmental, Inc.).

Throughout my career, I have strived to inform public policy with sound science so that our regulations and decisions regarding environmental issues are scientifically defensible and do not unnecessarily limit the production, transport, and use of chemicals and natural resources. Through my research, teaching, consulting, and technology development I have dedicated my career to better understand and manage environmental risks for the benefit of both the regulatory and the regulated community.

EXPERT WITNESS TESTIMONY

I have testified twice before as an expert witness, in both deposition and during trials in US Federal Court.

K.C. 1986 Limited Partnership v. Reade Manufacturing et al.
Case No. 02-0853-CV-W-NKL, United States District Court, Kansas City, MO
I developed opinions, prepared reports, and testified in deposition and trial regarding the sources and source-allocation, environmental fate, remediation alternatives and remediation cost allocation, and potential risks to human health associated with an arsenic-contaminated US EPA Superfund Site. I was the sole expert witness retained by Habco, Inc. and worked on the case from 1997-2005.

U.S. v. BP Exploration & Production, Inc. et al.
Case No. MDL No. 2179, United States District Court for the Eastern District of Louisiana
I developed opinions, prepared reports, and testified in deposition and the Clean Water Act trial regarding the environmental impact of oil- and dispersant-related chemicals in offshore waters and sediments of the Gulf of Mexico following the Deepwater Horizon incident. I was retained by BP Exploration & Production, Inc. to serve as the primary expert witness on potential environmental harm associated with the oil spill and worked on the case from May 2014 until July 2015.

PEER-REVIEWD PUBLICATIONS

2017

1. McEachran AD, Shea D, Nichols EG (2017). Pharmaceuticals in a temperate forest-water reuse system. *Science of the Total Environment,* 581, 705-714. DOI:10.1016/j.scitotenv.2016.12.185
2. Archambault JM, Prochazka ST, Cope WG, Shea D, Lazaro PR (2017). Polycyclic aromatic hydrocarbons in surface waters, sediments, and unionid mussels: relation to road crossings and implications for chronic mussel exposure. *Hydrobiologia,* DOI: 10.1007/s10750-017-3101-y
3. Archambault JM, Bergeron CM, Cope WG, Lazaro PR, Leonard JA, and Shea D (2017). Assessing toxicity of contaminants in riverine suspended sediments to freshwater mussels. *Environmental Toxicology and Chemistry,* 36(2), 395-407. DOI:10.1002/etc.3540.

2016

4. Hardison DR, Holland WC, McCall JR, Bourdelais AJ, Baden DG, Darius HT, Chinain M, Tester PA., Shea D, Quintana HAF, Morris JA, Litaker RW (2016). Fluorescent receptor binding assay for detecting ciguatoxins in fish. *PLoS One, 11*(4), e0153348.
5. Adrion AC, Nakamura J, Shea D, and Aitken MD (2016). Screening nonionic surfactants for enhanced biodegradation of polycyclic aromatic hydrocarbons remaining in soil after conventional biological treatment. *Environmental Science & Technology, 50*(7), 3838-3845.
6. Adrion AC, Singleton DR, Nakamura J, Shea D, and Aitken MD (2016). Improving polycyclic aromatic hydrocarbon biodegradation in contaminated soil through low-level surfactant addition after conventional bioremediation. *Environmental Engineering Science*, *33*(9), 659-670.
7. Gardner GE, J Bonner, J Landin, M Ferzli, D Shea (2016). Nonmajors' Shifts in Attitudes & Perceptions of Biology & Biologists Following an Active-Learning Course. *The American Biology Teacher*, *78*(1), 43-48.
8. McEachran AD, Shea D, Bodnar W, Nichols EG (2016). Pharmaceutical occurrence in groundwater and surface waters in forests land-applied with municipal wastewater. *Environmental Toxicology and Chemistry*, *35*(4), 898-905.

2010-2015

9. Adebambo OA, Ray PD, Shea D, Fry RC (2015). Toxicological responses of environmental mixtures: Environmental metal mixtures display synergistic induction of metal-responsive and oxidative stress genes in placental cells. *Toxicology and Applied Pharmacology*, *289*(3), 534-541.
10. Abdo N, Wetmore BA, Chappell GA, Shea D, Wright FA, Rusyn I (2015). In vitro screening for population variability in toxicity of pesticide-containing mixtures. *Environment International*, *85*, 147-55.
11. Gardner GE, Karl C, Ferzli M, Shea D, Haase D, Day JB (2015). The Bennett's Millpond Environmental Learning Project: Place-based education with student-teacher research teams. *ASTE Series in Science Education,* 255-274.
12. Gardner GE, Ferzli M, Jeffrey PS, Shea D (2015). Undergraduate Research as an Innovative Learning Experience: Student Perspectives on Professional Impacts. *Innovations in College Science Teaching*, 2015:35-48.
13. Gardner GE, Forrester JH, Jeffrey PS, Ferzli M, Shea D (2015). Authentic Science Research Opportunities: How Do Undergraduate Students Begin Integration into a Science Community of Practice? *Journal of College Science Teaching*, *44*(4), 61-65.
14. Hu, Jing, Alden C. Adrion, Jun Nakamura, Damian Shea, and Michael D. Aitken (2014) Bioavailability of (Geno) toxic Contaminants in Polycyclic Aromatic Hydrocarbon–Contaminated Soil Before and After Biological Treatment. *Environmental Engineering Science, 31*(4), 176-182.
15. Hardison DR, Sunda WG, Tester PA, Shea D, Litaker RW (2014). Increased cellular brevetoxins in the red tide dinoflagellate Karenia brevis under CO2 limitation of growth rate: Evolutionary implications and potential effects on bloom toxicity. *Limnology and Oceanography*, *59*(2) 560-577.
16. Hardison DR, Sunda WG, Shea D, Tester PA, Litaker WR (2013). When hungry, *Karenia brevis* goes toxic. *Phycologia 52*(4), 41.
17. Hardison DR, Sunda WG, Shea D, Litaker RW (2013). Increased toxicity of Karenia brevis during phosphate limited growth: Ecological and evolutionary implications. *PloS One 8*(3), e58545.
18. Gjeltema J, Stoskopf M, Shea D, De Voe R (2012). Assessment of Polycyclic Aromatic Hydrocarbon Contamination of Breeding Pools Utilized by the Puerto Rican Crested Toad, Peltophryne lemur. *International Scholarly Research Notices* 2012.
19. Hardison DR, Sunda WG, Litaker RW, Shea D, Tester PA (2012). Nitrogen limitation increases brevetoxins in karenia brevis (dinophyceae): implications for bloom toxicity. *Journal of Phycology 48*(4), 844-858.
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21. Shea D, Thorsen W (2012). Ecological Risk Assessment. *Toxicology and Human Environments* 112, 323-346.
22. Hawkins MB, Ferzli M, Overman E, Shea D (2012). A Studio Lab for the Undergraduate Biology Curriculum: Using a Comparative Endocrinology Model to Recruit Future Scientists. *Integrative and Comparative Biology 52*, E260.
23. Mosher S, Cope WG, Weber FX, Kwak TJ, Shea D (2012). Assessing accumulation and sublethal effects of lead in a unionid mussel. *Walkerana 12*(2) 60-68.
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27. Shea D (2010). Environmental Risk Assessment in A Textbook of Modern Toxicology (2004) A Textbook of Modern Toxicology, 4th Edition, Hodgson E, Ed., John Wiley & Sons, Inc. Hoboken, NJ USA, pp 571-590.

2005-2009

28. Henson-Ramsey H, Levine J, Kennedy-Stoskopf S, Taylor SK, Shea D, Stoskopf MK (2009). Development of a dynamic pharmacokinetic model to estimate bioconcentration of xenobiotics in earthworms. *Environmental Modeling & Assessment 14*(3), 411-418.
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30. Mendoza WG, Mead RN, Brand LE, Shea D (2008). Determination of brevetoxin in recent marine sediments. *Chemosphere 73*(8), 1373-1377.
31. Henson-Ramsey H, Kennedy-Stoskopf S, Levine JF, Taylor SK, Shea D, Stoskopf MK (2008). Acute toxicity and tissue distributions of malathion in *Ambystoma tigrinum*. *Archives of Environmental Contamination and Toxicology 55*(3), 481-487.
32. Chaves A, Shea D, Danehower D (2008). Analysis of chlorothalonil and degradation products in soil and water by GC/MS and LC/MS. *Chemosphere 71*(4), 629-638.
33. Henson-Ramsey H, Shea D, Levine JF, Kennedy-Stoskopf S, Taylor SK, Stoskopf MK (2008). Assessment of the effect of varying soil organic matter content on the bioavailability of malathion to the common nightcrawler, *Lumbricus terrestris L. Bulletin of Environmental Contamination and Toxicology 80*(3), 220-224.
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35. Chaves A, Shea D, Cope WG (2007). Environmental fate of chlorothalonil in a Costa Rican banana plantation. *Chemosphere 69*(7), 1166-1174.
36. Bringolf RB, Cope WG, Barnhart MC, Mosher S, Lazaro PR, Shea D (2007). Acute and chronic toxicity of pesticide formulations (atrazine, chlorpyrifos, and permethrin) to glochidia and juveniles of *Lampsilis siliquoidea*. *Environmental Toxicology and Chemistry 26*(10), 2101-2107.
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57. Miller JL, Shea D, Khaledi MG (2000). Separation of acidic solutes by nonaqueous capillary electrophoresis in acetonitrile-based media: Combined effects of deprotonation and heteroconjugation. *Journal of Chromatography A 888*(1), 251-266.

58. Weisbrod AD, Shea D, Leblanc GA, Moore MJ, Stegeman JJ (2000). Organochlorine bioaccumulation and risk for whales in a Northwest Atlantic food web. *Marine Environmental Research 50*(1), 440-441.

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60. Weisbrod AV, Shea D, Moore MJ, Stegeman JJ (2000). Bioaccumulation patterns of polychlorinated biphenyls and chlorinated pesticides in northwest Atlantic pilot whales. *Environmental Toxicology and Chemistry 19*(3), 667-677.

61. Weisbrod AV, Shea D, Moore MJ, Stegeman JJ (2000). Organochlorine exposure and bioaccumulation in the endangered N*orthwest Atlantic right whale (Eubalaena glacialis) population.* Environmental Toxicology and Chemistry 19(3), 654-666.

62. Tester PA, Turner JT, Shea D (2000). Vectorial transport of toxins from the dinoflagellate *Gymnodinium breve* through copepods to fish. *Journal of Plankton Research 22*(1), 47-62.

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63. Shea D, Penmetsa KV, Leidy RB (1999). Enantiomeric and isomeric separation of pesticides by cyclodextrin-modified micellar electrokinetic chromatography. *AOAC International 82*, 1550-1561.
64. Miller JL, Khaledi MG, Shea D (1998). Separation of hydrophobic solutes by nonaqueous capillary electrophoresis through dipolar and charge-transfer interactions with pyrylium salts. *Journal of Microcolumn Separations 10*(8), 681-685.
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66. Penmetsa KV, Leidy RB, Shea D (1997). Enantiomeric and isomeric separation of herbicides using cyclodextrin-modified capillary zone electrophoresis. *Journal of Chromatography A 790*(1), 225-234.
67. Baldwin WS, Graham SE, Shea D, LeBlanc GA (1997). Metabolic androgenization of female Daphnia magna by the xenoestrogen 4-nonylphenol. *Environmental Toxicology and Chemistry 16*(9), 1905-1911.
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73. Penmetsa KV, RB Leidy, Shea D (1997). Separation of fungicides by micellar electrokinetic capillary chromatography. *Electrophoresis 18*(2), 235-240.
74. Shea D (1997). Analysis of brevetoxins by micellar electrokinetic capillary chromatography and laser-induced fluorescence detection. *Electrophoresis 18*(2), 277-283.
75. Moore MJ, Shea D, Hillman RE, Stegeman JJ (1996). Trends in hepatic tumours and hydropic vacuolation, fin erosion, organic chemicals and stable isotope ratios in winter flounder from Massachusetts, USA. *Marine Pollution Bulletin 32*(6), 458-470.
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79. MacCrehan WA, Shea D (1995). Temporal relationship of thiols to inorganic sulfur compounds in anoxic Chesapeake Bay sediment porewater. In ACS Symposium Series, vol. 612, pp. 294-310. Washington, DC: American Chemical Society.

1987-1992

80. Hunt CD, McDowell SE, Shea D, Hillman RE, Trulli W, Berger T, Redford D, Pabst D (1992). Transport of sewage sludge from the 106-Mile Site-results from an October survey. *Chemistry and Ecology 7*(1-4), 195-231.
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82. MacCrehan WA, Shea D (1998). Separation of hydrophilic thiols using reversed-phase chromatography with trihaloacetate buffers. *Journal of Chromatography A 457*, 111-125.
83. Shea D (1988). Developing national sediment quality criteria. *Environmental Science & Technology 22*(11), 1256-1261.
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85. Shea D, MacCrehan WA (1988). Role of biogenic thiols in the solubility of sulfide minerals. *Science of the Total Environment 73*(1), 135-141.
86. Shea D, MacCrehan WA (1988). Determination of hydrophilic thiols in sediment porewater using ion-pair liquid chromatography coupled to electrochemical detection. *Analytical Chemistry 60*(14), 1449-1454.
87. Shea D, Helz GR (1987). Kinetics of inhibited crystal growth: precipitation of CuS from solutions containing chelated copper (II). *Journal of Colloid and Interface Science 116*(2), 373-383.

LAURIE MUSE SHELBY, CIH, CSP

Education

M.S., Biomedical Engineering, emphasis Public Health, Medical College of Virginia, Richmond, VA
B.S., Chemistry, Radford University, Radford, VA

Professional Registrations/Certifications

Certified Industrial Hygienist in Comprehensive Practice, American Board of Industrial Hygiene (Certification No. 4132)
Certified Safety Professional, Board of Certified Safety Professionals (Certification No. 9834)

Experience

Environmental, Health & Safety (EHS) Vice President – Alcoa Corporation, New York, NY, August 2016 – Present

- Set the vision and transform the EHS organization for Alcoa Corporation across 10 countries encompassing 17,000 employees and 10,000 contractors.
- Implement fatal and serious incident reduction process through improved data collection and analysis, creation of learning teams, critical risk management, and risk based auditing.
- Participate on Corporate Environmental Compliance Committee which oversees compliance efforts globally.
- Implement new EHS auditing process.
- Lead a team of 15 EHS professionals.
- Partner with CEO, COO, and Business Unit Presidents to create a business plan that integrates EHS into the way we produce aluminum.
- Streamline and right size EHS standards, policies, and training.

EHS & Sustainability Vice President – Global Primary Products, Alcoa, Pittsburgh, PA, July 2014 – August 2016

- Set EHS&S strategy and governance for global metals and alumina operations across 10 countries for 16,000 employees (17 smelters, 10 refineries, 15 casthouses, 6 mines, 1 powder plant, and 1 hazardous waste facility).
- Collaborated with Business Unit Presidents and operational leadership to ensure compliance with global regulations, Alcoa standards, and industry best practices.
- Implemented leading practices to improve EHS including human performance and critical control assessments: Achieved year-over-year injury reductions and non- compliance reductions globally.
- Advanced sustainability efforts across Global Primary Products operations and delivered improvements: Reduced greenhouse gas emissions by 25.9%, landfill waste by 23%, and fresh water usage by 21%; improved energy efficiency, bio diversity, and identified beneficial reuse opportunities for largest waste streams.
- Active participant in industry trade associations and government affairs.
- Focused on building and developing EHS talent globally, including internships for pipeline growth.

Laurie M. Shelby, CIH, CSP

EHS Director – Primary Products, Alcoa, Pittsburgh, PA, May 2008 – July 2014

- Drove EHS improvements in a Business Unit with nine locations throughout the United States (3,500 employees).
- Part of the winning team for the 2012 and the 2013 Alcoa EHS Impact Awards.
- Effectively rolled out Human Performance training and tools across all locations (3-year plan implemented ahead of schedule and below budget).
- Implemented a culture change model using Human Performance and leading indicator measurement process for leadership.
- Analyzed and developed improvement programs to deliver results and reduce cost – reduced injuries, environmental non-compliances, and workers compensation.
- Achieved a 44% reduction in recordable injuries and 77% reduction in severity.
- Continuous focus on fatality prevention and risk reduction.
- Led Business Unit efforts for sustainability and climate change.
- Led Alcoa Global Fatigue Risk Management team.
- Developed strategies for compliance with new environmental regulations (S02, PM2.5, Ozone, and Residual Risk).

Manager, EHS & Operational Excellence (Lean Manufacturing) Audit, Alcoa, Pittsburgh, PA, July 2001 – May 2008

- Managed approximately 150 EHS and Operational Excellence audits per year for plants in Asia, Australia, South and North America, and Europe.
- Evaluated risks associated with leading and lagging indicators to plan the EHS and Operational Excellence audit schedule.
- Conducted 15-20 EHS audits and four Operational Excellence audits annually.
- Managed a staff of eight EHS and Operational Excellence team leaders.
- Led the new acquisition audit change process – Rapid Integration process
- Maintained Alcoa's EHS self-assessments.
- Assisted the Corporate EHS lead team in developing corporate strategy direction for EHS worldwide.

EHS Audit Team Leader, Alcoa, Richmond, VA, 2000 - 2001

- Led 25 Health and Safety audits at various Alcoa locations worldwide, including selection of team members, identification of risks, and communication of results to plants and business unit leadership, developing of reports, and approval of action plans and compensating controls.
- Developed critical four safety guidance documents.
- Conducted self-assessment training worldwide.

Manager, Global Occupational Health and Safety Programs & Regulatory Compliance, Reynolds Metals Company, Richmond, VA, 1994 - 2000 (Acquired by Alcoa in 2000)

- Conducted Industrial Hygiene field surveys for chemical, biological, and physical hazards throughout Reynolds Metals facilities.
- Implemented health and safety training and incident investigation programs.

- Implemented process for development of an electronic Safety Data Sheets (SDSs) storage and retrieval system and update SDSs to meet ANSI/ISO standards.
- Developed and maintained Reynolds HS corporate web site.
- Performed HS training for all levels of management and operational personnel.

Senior Industrial Hygienist and Environmental Project Leader, Radian Corporation, Herndon, VA, 1989-1994

- Developed new business for Radian EHS Consulting.
- Implemented customer satisfaction surveys and follow-up on EHS services.
- Managed a wide variety of Industrial Hygiene, Safety and Environmental projects including cleanup of hazardous waste sites, TSCA New Chemical Review for the EPA – Washington office, and compliance auditing for ITT and Kodak.
- Group leader for 10 specialists in the Herndon, VA office.
- Managed and conducted numerous indoor air quality investigations for private clients and the Pentagon.

Industrial Hygienist, Virginia Electric and Power Company, Richmond, VA, 1983-1989

- Conducted field industrial hygiene monitoring in fossil fuel and nuclear power plants across Dominion Power operations.
- Completed a two-year assignment as the plant Health & Safety coordinator at Mt. Storm West Virginia Fossil Fuel facility (2,000 employees). During this period, developed and implemented a Health and Safety improvement strategy that reduced injuries by 50%.
- Served as the team leader for the joint labor/management EHS committee. The committee successfully implemented an arc flash protection process including the use of flame resistant clothing.
- Managed the arsenic exposure assessment project across southeastern electric power plants in association with the Electric Power Research Institute (EPRI).

Professional Societies

Executive Member, ORC
Member and Z10 Management system subcommittee leader, American Society of Safety Engineers
Past President, Potomac Section, American Industrial Hygiene Association
Past Treasurer, Central Virginia Section, American Industrial Hygiene Association
National Member, American Industrial Hygiene Association

Community Activities

Volunteer at Food Bank and Lambs Basket
Former Girl Scout Leader
Softball Coach and Cheerleading Coach, 2009-2014 seasons

LARRY BUCSHON, M.D.
8TH DISTRICT, INDIANA

WASHINGTON, DC OFFICE:
1005 LONGWORTH HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-4636

DISTRICT OFFICES:
420 MAIN STREET
SUITE 1402
EVANSVILLE, IN 47708
(812) 465-6484

901 WABASH AVENUE, SUITE 140
TERRE HAUTE, IN 47807
(812) 232-0523

Congress of the United States
House of Representatives
Washington, DC 20515-1408

COMMITTEE ON
ENERGY AND COMMERCE

http://bucshon.house.gov

July 26, 2017

Mr. Thomas Carpenter
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue NW
Washington, D.C. 20004

Re: Nomination of a Chartered Science Advisory Board Candidate

Dear Mr. Carpenter:

I am writing this letter to ask that you consider Ms. Laurie Shelby for an appointment to the U.S. Environmental Protection Agency's ("EPA") Chartered Science Advisory Board ("SAB"). Ms. Shelby is an experienced and respected thought-leader on environmental, health, safety and sustainability issues related to the manufacturing industry. I believe she would be an excellent addition to EPA's Chartered SAB.

Through her extensive professional experience, Ms. Shelby maintains the skills and expertise necessary to assist EPA's Chartered SAB in providing scientific and technical guidance to the Administrator. Ms. Shelby is currently the Environment Health Safety (EHS) Vice President at Alcoa where she has developed and implemented successful efforts to mitigate environmental, health and safety risks across the company's operations that include approximately 17,000 employees and 10,000 contractors. Ms. Shelby previously served as Alcoa's EHS & Sustainability Vice President where she focused on water usage, waste management, energy efficiency, ecosystems services and air quality. Her efforts resulted in significant reductions in Alcoa's environmental footprint. Prior to joining Alcoa, Ms. Shelby worked as an industrial hygienist and focused on waste management and chemical safety, among other issues.

In Indiana's Eighth Congressional District alone, Ms. Shelby oversees an Alcoa facility where many of the topics the SAB addresses are also dealt with. For instance, the Alcoa Warrick facility includes an aluminum can sheet rolling mill, a curtailed smelter that is now being reopened, and a coal mine and adjacent coal plant. This plant, which has 1,250 workers and soon will have over 1,500, illustrates the practical, industry perspective Ms. Shelby can bring to the SAB around achieving environmental and human health goals under smart regulations.

Ms. Shelby is also active in leadership roles in a number of professional societies, including as an Executive Member for Organization Resources Counselors, Inc. (ORC), a Subcommittee Leader on the American Society of Safety Engineers, and former President of the American Industrial Hygiene Association-Potomac Section.

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Ms. Shelby has devoted her career to addressing complex environmental and public health issues. Ms. Shelby is willing to commit time to the SAB's important mission and work with the other members in providing EPA with scientific-based guidance on environmental issues facing the agency. For these reasons, I strongly believe that Ms. Shelby would be a valuable member of EPA's Chartered SAB.

Thank you for your time and consideration of this matter.

Sincerely,

Larry Bucshon, M.D.
Member of Congress

NATIONAL ASSOCIATION OF
Manufacturers

Jay Timmons
President and CEO

July 28, 2017

The Honorable Scott Pruitt
Administrator
Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Mailcode 1101A
Washington, DC 20460

Dear Administrator Pruitt:

On behalf of the National Association of Manufacturers (NAM), the largest manufacturing association in the United States representing small and large manufacturers in every industrial sector and all 50 states, I am writing to express my support for the nomination of Laurie Shelby of Alcoa Corporation to the Chartered Science Advisory Board (SAB) at the United States Environmental Protection Agency (EPA).

Manufacturers appreciate the importance of the EPA's mission to protect human health and the environment and specifically value the role of the SAB, which provides strategic advice to the EPA Administrator on a variety of programs. I also know, representing manufacturers, that it is possible—and necessary—to pursue environmental growth and economic stewardship simultaneously. Bringing robust and informed industry perspective to the SAB can help achieve this goal, and I believe that Ms. Shelby is well positioned to succeed as a member.

Ms. Shelby currently leads Alcoa Corporation's worldwide Environmental, Health and Safety function. She is a Certified Industrial Hygienist with over 30 years of experience in the environmental, health, and safety field. Under her leadership at Alcoa, the company has achieved much success in their human performance program and streamlining EHS standards and training to improve the work environment. Laurie has extensive experience providing strategic input to industry projects, including in her role as Alcoa's committee lead for the International Aluminum Institute's Energy & Environment Committee.

We need more industry and manufacturing experience and perspective on the SAB to ensure balance in how environmental regulations are developed. I believe Laurie Shelby has the qualifications and experience to provide this balance. Please feel free to contact me should you have any additional questions and thank you for your consideration.

With all best wishes I remain,

Sincerely,

Jay Timmons

Stephen Newell
Partner
2100 M Street, Suite 170-357
Washington, DC 20037
+1 202 510-0513
steve.newell@orchse.com

Dear Administrator Pruitt:

I am writing to express my strong support for the nomination of Laurie Shelby of Alcoa Corporation to the Chartered Science Advisory Board at the United States Environmental Protection Agency (EPA).

As a Founding Partner and Co-owner of ORCHSHE Strategies, a global consulting firm focused on environmental, health and safety (EH&S) issues, I work extensively with corporate vice presidents and directors with lead responsibility for EH&S in their respective organizations. I also communicate regularly and collaborate with key federal staff, including the heads of federal Agencies such as OSHA NIOSH, CSB and the NTSB. So I am constantly exposed to some of the best minds and most capable people in our profession. Laurie Shelby ranks very high on that list.

By way of background, ORC HSE Strategies is a service organization that, for the past 45 years has provided a suite of integrated environmental, health and safety (EH&S) services to over 100 large global corporations across 20 industry sectors. Members receive up-to-the-minute information on key legislative, regulatory and technical developments; dialogue with key government regulators; benchmark with a community of EH&S leaders; receive advice from on-staff experts; and have early access to innovative, leading-edge EH&S professional advances. We are known for our thought leadership and for being an honest broker that effectively represents business interests in EH&S.

I have worked with Laurie on issues such as fatality and serious injury prevention, human and organizational performance, influencing senior business leader decision-making, and performance metrics. And in every instance Laurie has added a unique blend of subject matter expertise and practical real world experience. I am confident that she would bring the same kind of professionalism and enthusiasm to the Chartered Science Advisory Board.

Laurie is currently Vice President of Environment, Health and Safety (EHS) at Alcoa Corporation, overseeing Alcoa Corporation's global EHS program. She has extensive experience driving improvements in corporate environmental, health and safety programs around the world. Laurie has worked in the EHS field for over thirty years and is a certified Industrial Hygienist by the American Board of Industrial Hygiene. Under her direction and leadership, Alcoa has implemented a culture change model that has achieved substantial reductions in injuries and fatalities, and her team continues to finesse data-driven solutions to improve workplace safety. Laurie has an impressive track record in developing health and safety improvement programs, risk assessments, and industrial hygiene surveys for several other companies, including Reynolds, Radian Corporation and Virginia Electric and Power Company.

Laurie is deeply committed to excellence in science and public policy, and is highly respected in the EHS professional community for her depth of knowledge and personal integrity. She has proven leadership skills in dealing with complex environmental and safety issues, and would bring a unique perspective to the Science Advisory Board. I highly recommend her.

Please feel free to contact me should you have any additional questions.

Sincerely,

Stephen Newell, JD
Partner & Founding Member
ORCHSE Strategies

M. Paul Sherman, P.E.
North Carolina Farm Bureau Federation
PO Box 27766
Raleigh, NC 27611
(919) 719-7292 office
paul.sherman@ncfb.org

EDUCATION

- **Bachelor of Science** (Biological Engineering), 1998, North Carolina State University, Raleigh, NC

PROFESSIONAL EXPERIENCE

- **North Carolina Farm Bureau Federation,** Associate State Legislative Director, Air & Energy Programs Director (June 2006-Present), Raleigh, NC
  - Represents NCFB's 500,000+ member families on engineering, air quality, energy, renewable energy, global climate change, transportation, and other regulatory issues before the North Carolina General Assembly. Advocates for North Carolina's farmer and rural citizen interests through policy development and participation on stakeholder groups, boards, and commissions.

- **North Carolina Department of Environment and Natural Resources – Division of Water Quality,** Environmental Engineer I, II, III, Environmental Supervisor III (May 2001-June 2006), Raleigh, NC
  - Supervisor for the unit responsible for permitting and compliance of all animal waste management facilities in the state. Duties include developing program guidance and policy, permit development, assessing civil penalties, participation in stakeholder groups, public awareness presentations, permittee training, and administrative duties. Provide technical and regulatory assistance for the permitting of innovative animal waste treatment systems. Participation on the Advisory Panel for the NC Attorney General's Agreement with Smithfield Foods/Premium Standard Farms/Frontline Farmers process for evaluating Environmentally Superior Technologies. Provide technical and regulatory assistance for the permitting of innovative animal waste treatment systems. Perform site evaluation/inspection of current and proposed innovative animal waste treatment facilities.

- **S&ME, Inc.,** Field Operations Manager (March 1999-May 2001), Raleigh, NC
  - Manage and train field technicians, write engineering reports and job proposals, review laboratory data, compile monthly billing statements, procure supplies for laboratory and field technicians. Evaluate pre-construction site soil conditions for roadways and commercial buildings, evaluate soil repairs for unsatisfactory conditions, investigate asphalt and subsurface conditions in failing roadway and parking lots, evaluate auger-cast pile and caisson installation for building foundations, evaluate allowable soil bearing pressure for building foundations, and attend and

report on-site project meetings for a construction services, materials testing, and engineering firm.

- **Hog Slat, Inc.**, Design Engineer (June 1998-March 1999), Newton Grove, NC
  - Designed products for an agricultural equipment manufacturer, produced and tested prototypes of the newly designed equipment. Six-month training period included working on an operational swine breeding facility, swine farm construction management, and swine equipment installation.

PROFESSIONAL REGISTRATION

- Professional Engineer North Carolina #028437

CURRICULUM VITAE

ROBERT SKOGLUND, Ph.D., DABT, CIH

[redacted] • robert.skoglund@covestro.com

EDUCATION

Doctor of Philosophy (1997)

University of Minnesota
School of Public Health
Division of Environmental and Occupational Health
Minneapolis, MN

Major: Environmental health (environmental chemistry and toxicology)
Minor: Civil engineering (environmental engineering)

Masters of Science (1990)

University of Minnesota
School of Public Health
Division of Environmental and Occupational Health
Minneapolis, MN

Major: Environmental health (toxicology)
Minor: Related fields in environmental health (epidemiology, statistics, industrial hygiene, and environmental chemistry)

Bachelor of Arts, *magna cum laude*

Bethel University
Arden Hills, MN

Major: Chemistry (1985)
Biology (1983)
Minor: Math

Masters of Business Administration (In Process)

Marylhurst University
Marylhurst, OR

Major: Sustainable Business

Other institutions attended:

Hamline University - Saint Paul, MN (1984 - 1985)
Boston University - Boston, MA (1981 - 1982)

PROFESSIONAL EXPERIENCE

Present Position

Covestro LLC (2015 - Present)
1 Covestro Circle
Pittsburgh, PA 15205

Director, Product Safety and Regulatory Affairs

PROFESSIONAL EXPERIENCE (continued)

Previous Positions

3M Company (1998 - 2017)
Corporate Medical Department, Product EHS
3M Center, Building 220-6E-03
Saint Paul, MN 55144-1000

Senior Laboratory Manager (2007 – 2015)
Laboratory Manager (2005 - 2007)
Technical Manager (2002 - 2005)
Senior Toxicology Specialist (2002)
Advanced Toxicology Specialist (2001 - 2002)
Toxicology Specialist (1998 - 2001)

PROSAR - International Poison Center (1997 - 1998)
Atrium Building, Suite 335
1295 Bandana Boulevard
Saint Paul, MN 55108

Director, Toxicology and Industrial Hygiene Services (1997 - 1998)
Senior Toxicologist (1997 - 1998)

Oregon Health Sciences University (1994 - 1998)
Oregon Poison Center
3181 Southwest Sam Jackson Park Road
Portland, OR 97201

Consulting Toxicologist (1994 - 1998)

HealthPartners, Inc. (1986 - 1997)
Regions Hospital (formerly Saint Paul - Ramsey Medical Center)
Poison Information Department
8100 34th Avenue South
Minneapolis, MN 55425-1309

Manager, Toxicology and Industrial Hygiene Group (1992 - 1997)
Senior Toxicologist (1992 - 1997)
Staff Toxicologist (1988 - 1992)
Toxicology Intern (1986 - 1988)

† University of Minnesota (1985 - 1992)
School of Public Health
Division of Environmental & Occupational Health
Box 807 UMHC
420 Delaware Street Southeast
Minneapolis, MN 55455

Research Assistant, Environmental Chemistry Laboratory (1987 - 1992)
Research Assistant, Toxicology Laboratory (1985 - 1987)

† = Work Related To Graduate Studies

PROFESSIONAL EXPERIENCE (continued)

ECOLAB (1984 - 1985)
Corporate Engineering Center
Quality Control Laboratory
940 Lone Oak Road
Eagan, MN 55118

Senior Laboratory Technician (1984 - 1985)

PROFESSIONAL CERTIFICATIONS

General Toxicology (DABT)
1998 - present (re-certified in 2003, 2008, and 2013)
American Board of Toxicology

Comprehensive Practice of Industrial Hygienist (CIH)
1997 - present (re-certified in 2002, 2007 2012, and 2017)
American Board of Industrial Hygiene

Comprehensive Practice of Occupational Safety (CSP)
1999 - 2004
Board of Certified Safety Professionals

PROFESSIONAL AND SCIENTIFIC MEMBERSHIPS

American Board of Industrial Hygiene

American Board of Toxicology

Delta Omega - Honorary Society of Public Health

Society for Chemical Hazard Communication

Society of Toxicology

ELECTED PROFESSIONAL POSITIONS

Society of Toxicology

Nominating Committee (2010 - 2012)

Society for Chemical Hazard Communication

Board of Directors (1996 - present)
Past-President (2004 - 2006)
President (2002 - 2004)
Vice President (2000 - 2002)
Secretary/Treasurer (1998 - 2000)

ELECTED PROFESSIONAL POSITIONS (continued)

Northland Chapter of the Society of Toxicology

Executive Council (1998 - 2004)
Past President (2003 - 2004)
President (2002 - 2003)
President-Elect (2001 - 2002)
Secretary/Treasurer (1998 - 2001)
Regional Chapter Organizing Committee (1997 - 1998)

APPOINTED PROFESSIONAL POSITIONS (Active)

Environmental Protection Agency (EPA)

Office of Research and Development, Science Advisory Board, Chemical Assessment Advisory Committee (2012 - present)

National Institute of Environmental Health Sciences (NIEHS)

Midwest Consortium for Hazardous Waste Worker Training, Advisory Board (2010 - present)

University of Cincinnati

Occupational Alliance for Risk Science - Workplace Environmental Exposure Levels (WEELs) Committee (2016 - present)

PROFESSIONAL SERVICE (Active)

Technical Committees

American Chemistry Council
Consumer Specialty Products Association

Advisory Boards/Committees

Consumer Specialty Products Association

Professional Certification/Registry

AIHA Registry: HazCom Registry Exam - Body of knowledge exam

ACADEMIC APPOINTMENTS

Indiana University

Richard M. Fairbanks School of Public Health
Department of Environmental Health Sciences

Adjunct Faculty Member (2017 - present)

University of Minnesota

School of Public Health
Division of Environmental Health Sciences

Adjunct Associate Professor (2009 - present)

† = Work Related To Graduate Studies

ACADEMIC APPPOINTMENTS (continued)

College of Veterinary Medicine
Department of Veterinary Diagnostic Medicine (Toxicology Graduate Program)

Adjunct Professor (2004 - 2008)
Adjunct Associate Professor (1999 - 2004)

College of Pharmacy
Department of Pharmacy Practice (Toxicology Graduate Program)

Adjunct Assistant Professor (1993 - 1999)

Instructor appointments at other academic institutions:

Oregon Health Sciences University (1994 - 1999)
Portland State University (1997 - 1998)
University of Wisconsin - Eau Claire (1994 - 1997)

GRADUATE SCHOOL APPOINTMENTS

University of Minnesota

School of Public Health
Division of Environmental Health Sciences

Associate Member (1998 - present)

Toxicology Graduate Program

Associate Member (1997 - 2012)
Limited Teaching Status (1994 - 1997)

Thesis Committees:

Doctor of Philosophy (Ph.D.) - 4
Masters of Science (M.S.) - 3
Masters of Public Health (MPH) - 2
Directed Studies in Pharmacy Practice (Pharm.D. program) - 6

SPONSORED STUDENT OPPORTUNITES

3M Internships - 3

3M Work-Study Program (Tech Aide) - 22

Covestro Internships - 2

TEACHING EXPERIENCE, Graduate and Undergraduate Courses

University of Minnesota

Advanced Toxicology I (Txcl 8012)
Advanced Toxicology II (Txcl 8013)
An Introduction to Regulatory Medicine (CVM 6545)
† *Analysis of Toxicants (PubH 8185)*

† = Work Related To Graduate Studies

TEACHING EXPERIENCE, Graduate and Undergraduate Courses (continued)

Chemical and Environmental Toxicology (Txcl 5216)
† *Environmental Chemistry (PubH 5186)*
Garbage, Government and the Globe II (ID 5526)
Garbage: Historical, Management, Human Health and Regulatory Issues (UC 4525)
Hazardous Materials Management (PubH 5255)
Human Diseases Caused by Environmental Agents (PubH 8264)
Interdisciplinary Evaluation of Occupational Health and Safety Field Problems (PubH 6150)
Occupational and Industrial Toxicology (PubH 5267)
Principles of Toxicology (Txcl 5214)
Regulatory Toxicology (PubH 5161)
Risk Assessment: Application to Risk-Based Decision Making (PubH 6112)

University of Wisconsin-Eau Claire

Health Regulations, Codes, and Standards (EPH 480/680)

Portland State University

Principles of Toxicology (Seminar)

University of Indiana, Fairbanks School of Public Health

Fundamentals of Product Stewardship (PBHL-A680)
Regulatory Affairs for Product Stewardship (PBHL-A670)

University of Findlay

Seminar in Environmental, Safety, and Occupational Health (ESOH 499)

TEACHING EXPERIENCE, Professional Development and Continuing Education Courses

Advanced Topics in EHS: Alternative Assessments (4-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

Advanced Topics in EHS: Alternative in Animal Testing (4-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

Advanced Topics in EHS: Clinical Toxicology - First Aid and Note to Physicians (4-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

Advanced Topics in EHS: Endocrine Disrupters (4-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

Advanced Topics in EHS: Genotoxicity, Mutagenicity, and Carcinogenicity (4-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

Advanced Topics in EHS: Health Hazard Data for Hazard Communication (4-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

Advanced Topics in EHS: Immunotoxicology - Sensitization (4-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

Advanced Topics in EHS: Life Cycle Assessment (4-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

Advanced Topics in EHS: Neurotoxicology (4-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

Advanced Topics in EHS: Occupational Exposure Limits (4-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

† = Work Related To Graduate Studies

TEACHING EXPERIENCE, Professional Development and Continuing Education Courses (continued)

Advanced Topics in EHS: Reproductive and Developmental Toxicology (4-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

Advanced Topics in EHS: Respiratory Toxicology (4-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

Advanced Topics in EHS: Risk Management and Communication (4-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

Advanced Topics in EHS: Role of Human Data in Hazard Communication (4-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

Advanced Topics in EHS: Toxicology of the Liver and Kidney (4-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

Advanced Topics in EHS: Toxicology of Nanomaterials (4-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

Advanced Topics in EHS: Toxicology Testing for Hazard Communication (4-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

California Proposition 65 Labeling Workshop (4-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

Comprehensive Industrial Hygiene Review (40-hours). Sponsored by the Midwest Center for Occupational Safety and Health.

Ecotoxicology for Hazard Communication (8-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

Emerging Issues in Toxicology for Health and Safety Professionals (8-hours). Sponsored by the Wisconsin Section of the American Industrial Hygiene Association (AIHA).

Environmental Medicine (8-hours). Sponsored by the Midwest Center for Occupational Safety and Health.

Fundamental of Sustainable Chemistry and Engineering (4-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

Hazard Communication Auditing (4-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

Hazard Communication for Asia, the Pacific Rim and Latin America (8-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

Hazard Communication Registry Exam Preparation (16-hours). Sponsored by the American Industrial Hygiene Association (AIHA) and Society for Chemical Hazard Communication (SCHC).

Hazard Determination and Risk Assessment (8-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

Industrial Hygiene and Safety for Hazard Communication (8-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

International Hazard Communication (16-hours). Sponsored by ABS Consulting - Government Institutes.

Labeling for Consumer Products (4-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

Leadership and Teamwork for Hazard Communication (4-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

TEACHING EXPERIENCE, Professional Development and Continuing Education Courses (continued)

Overview of US Environment, Health, & Safety Regulations (8-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

REACH - A Risk Management Strategy (8-hours). Sponsored by the American Industrial Hygiene Association (AIHA).

REACH - Chemical Safety Assessment Workshop (8-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

REACH - Extended Safety Data Sheet (4-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

REACH - Understanding and Preparing for Chemical Registrations in Europe (8-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

Science for the Hazard Communicator (8-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

Toxicology for the First Responder (4-hours). Sponsored by the Federal Emergency Management Agency (FEMA).

Toxicology for Hazard Communication (8-hours). Sponsored by the Society for Chemical Hazard Communication (SCHC).

Toxicology for Health and Safety Professionals (8 hours). Sponsored by the Rocky Mountain Section of the American Industrial Hygiene Association (AIHA).

Toxicology for the Non-Toxicologist (8 hours). Sponsored by the Oregon Governor's Occupational Safety and Health (GOSH) Conference.

WEBINARS

Hazard Communication Registry Exam Preparation (10 hours). Sponsored by the American Industrial Hygiene Association Registry and the Society for Chemical Hazard Communication

REACH Extended Safety Data Sheets (90 minutes). Sponsored by the Society for Chemical Hazard Communication.

REACH - A Risk Management Strategy (150 minutes). Sponsored by the American Industrial Hygiene Association.

The Confluence of HazCom and Product Stewardship (90 minutes) – Communication Across the Value Chain. Sponsored by the Product Stewardship Society and the Society for Chemical Hazard Communication.

HONORS AND AWARDS

3M Company

- Circle of Technical Excellence and Innovation Award
  - Technical Champion (2004)
  - Individual Achievement (2002)
- Educator of the Year (2013)
- EHS Achievement Award
  - Sponsored Team (2014)
  - Sponsored Team (2010)

HONORS AND AWARDS (continued)

American Industrial Hygiene Association
Outstanding Project Team Award, SDS Registry Team (2011)

† International Association for Great Lakes Research (IAGLR)
Best Student Paper Award (1989)
Best Student Paper Award (1988)

† National Sea Grant
Best Abstract in Environmental Studies Award (1988)

PROSAR - International Poison Center
Distinguished Service Award (1998)

Society for Chemical Hazard Communication (SCHC)
Distinguished Service Award (2002)

Recognition for Participation in 125 Professional Development Courses (2013)

† Society for Environmental Toxicology and Chemistry (SETAC)
Student Travel Award (1991)

Technological Education Institution of Athens
Distinguished Speaker Award (1997)

† University of Minnesota
Graduate School Fellowship (1987)
Graduate School Fellowship (1986)
Graduate School Fellowship (1985)

INVITED EXTERNAL PRESENTATIONS (Five year history)

Lautenberg Chemical Safety Act: Year One in Review, Opportunities for the Future. American Chemistry Counsel – Responsible Care Meeting, Miami, FL, Apirl 2017.

Product Stewardship as an Innovation Driver. Product Stewardship 2016, Baltimore, MD, May 2016.

Stopping the Regulatory Madness or Protecting the People: A Professional Look at Impolite Debates. Product Stewardship 2016, Baltimore, MD, May 2016.

SDS Authoring and Reviewing, and IH Insomnia: What's Keeping You Up At Night? AIHce Meeting, Baltimore, MD, May 2016.

Hazard & Risk Based Assessments and Sustainable Business – Today and Moving Forward. Product Stewardship 2015, Salt Lake City, UT, June 2015.

SDS Authoring and Reviewing, and IH Insomnia: What's Keeping You Up At Night? SP-13. AIHce Meeting, Salt Lake City, UT, June 2015.

SDS Authoring and Reviewing, and IH Insomnia: What's Keeping You Up At Night? SP-12. AIHce Meeting, San Antonio TX, June 2014.

Impacts of Supplier Risk Management Measures. In: REACH – Impacts on the Practice of Industrial Hygiene *(RT 221)*. Roundtable, AIHce Meeting, Montreal, Quebec, Canada, May 2013.

REACH Exposure Scenarios. Exposure Risk Management: Bridging Gaps *(SS 003)*. Science Symposium, AIHce Meeting, Montreal, Quebec, Canada, May 2013.

INVITED EXTERNAL PRESENTATIONS (continued)

Meeting the Challenge of Global Product and Chemical Regulatory Requirements. Presentation and Panel Discussion, NAEM EHS Management Forum, Naples FL, October 2012

Attributes of Sustainable Chemistries and Processes. In: Trends in Green Chemistry: From Policy Reform to Innovation *(RT 228)*. Roundtable, AIHce Meeting, Indianapolis IN, June 2012.

Reconciling Registered and Intended Risk Management Strategies. In: Downstream User Obligations Under REACH *(RT 219)*. Roundtable, AIHce Meeting, Indianapolis IN, June 2012.

Downstream User Obligations Under. In: *Socio-Legal and Regulatory Aspects of IH Practice (PO 106)*. Podium Session, AIHce Meeting, Indianapolis IN, June 2012.

Scientific, Regulatory, and Public Perspectives on the Credibility and Use of Alternative Toxicology Test Methods in a Legislative Framework. Co-Chair of Roundtable Session. Society of Toxicology Meeting. San Francisco, March 2012.

RESEARCH AND PROFESSIONAL INTERESTS AND EXPERTISE

Alternatives in animal testing

Biomarkers for pre-clinical disease states from environmental and occupational toxicants

Exposure assessments for environmental and occupational toxicants

Hazard communication and product stewardship

Hazard determination and risk assessment of consumer and industrial products

Occupational and applied toxicology

Global regulatory toxicology

Sustainability

Toxicology of environmental and occupational toxicants

Transport and fate of toxicants in the environment

GRANTS

R.S. Skoglund for the Northland Chapter of SOT Executive Committee. 2003. *Funding for K-12 Educational Activity and National Speaker for Regional Meeting*. Society of Toxicology (SOT) National Office. $2,000

R.S. Skoglund and R.R. Roy. 1996. *Fellowship in Applied Toxicology*. St. Paul-Ramsey Medical Center and Ramsey Foundation. $2,500.

R.S. Skoglund and K.A. Ryan. 1994. *Development of a prototype for MSDSs on CD-ROM.* Procter & Gamble. $5,000.

R.S. Skoglund and R.R. Roy. 1993. *A Toxicological and Epidemiological Review of Propane, Iso-butane, and n-Butane.* S.C. Johnson Wax, Inc. $11,425.

THESES

† R. Skoglund. 1997. *Modeling bioaccumulation of PCBs in phytoplankton.* Ph.D. Thesis, University of Minnesota, School of Public Health, Division of Environmental and Occupational Health, Minneapolis, MN.

† = Work Related To Graduate Studies

THESES (continued)

† R. Skoglund. 1990. *Toxicity of cadmium to pulmonary alveolar macrophages In Vitro: Identification of the toxic species of cadmium*. M.S. Thesis, University of Minnesota, School of Public Health, Division of Environmental and Occupational Health, Minneapolis, MN.

† R. Skoglund. 1990. *Biological potency of polychlorinated biphenyls*. M.S. Thesis, University of Minnesota, School of Public Health, Division of Environmental and Occupational Health, Minneapolis, MN.

PUBLICATIONS IN REFEREED JOURNALS

† R. Skoglund and D.L. Swackhamer. 1999. Evidence for the Use of Organic Carbon as the Sorbing Matrix in the Modeling of PCB Accumulation in Phytoplankton. *Environ. Toxicol. Chem.,* 33(8): 1516-1519.

† R. Skoglund, K. Stange, and D.L. Swackhamer. 1996. A kinetic model for predicting the accumulation of PCBs in phytoplankton. *Environ. Sci. Technol.,* 30(7): 2113-2120.

† D.L. Swackhamer. and R. Skoglund. 1993. Bioaccumulation of PCBs by algae: Kinetics versus equilibrium. *Environ. Toxicol. Chem.,* 12(5): 831-838.

PUBLICATIONS IN BOOKS

R. Roy, R. Skoglund, and P. Logan. 2014. Risk Management Measures (RMM). In: *Encyclopedia of Toxicology, 3rd Edition*. P. Wexler (ed), Elsevier Inc., Academic Press, Waltham, MA.

R. Roy, and R. Skoglund. 2014. Derived No-Effect Level (DNEL). In: *Encyclopedia of Toxicology, 3rd Edition*. P. Wexler (ed), Elsevier Inc., Academic Press, Waltham, MA.

R. Roy, and R. Skoglund. 2014. Derived Minimal Effect Level (DMEL). In: *Encyclopedia of Toxicology, 3rd Edition*. P. Wexler (ed), Elsevier Inc., Academic Press, Waltham, MA.

R. Roy and R. Skoglund. 2013. Industrial Toxicology. In: *Hazardous Materials Management; Desk Reference, 3rd Edition*. D.J Snyder and A.H. Arnofsky (ed), Alliance of Hazardous Materials Professionals, Bethesda, MD.

R. Roy and R. Skoglund. 2005. Industrial Toxicology. In: *Hazardous Materials Management; Desk Reference, 2nd Edition*. D.B. Cox (ed), Academy of Certified Hazardous Materials Managers, Rockville, MD.

R. Roy and R. Skoglund. 1999. Industrial Toxicology. In: *Hazardous Materials Management; Desk Reference*. D.B. Cox (ed), McGraw-Hill, Inc., New York, NY.

D. Chandler, R. Roy, and R. Skoglund. 1998. Hazardous Materials Spills. In: *Emergency Medicine: The Core Curriculum*. R. Aghababian (ed), Lippincott-Raven, New York, NY.

D. Chandler, R. Roy, and R. Skoglund. 1998. Toxicologic Information Resources. In: *Emergency Medicine: The Core Curriculum*. R. Aghababian (ed), Lippincott-Raven, New York, NY.

D. Chandler, R. Roy, and R. Skoglund. 1998. Personal Protective Equipment. In: *Emergency Medicine: The Core Curriculum*. R. Aghababian (ed), Lippincott-Raven, New York, NY.

R. Skoglund and R. Roy. 1996. Minnesota (Occupational Health and Safety Rules). In: *Workplace Safety and Health*. Clark Boardman Callaghan, Deerfield, IL.

Roy, R. and R. Skoglund. 1996. Reproductive Health Hazards. In: *Workplace Safety and Health*. Clark Boardman Callaghan, Deerfield, IL.

PUBLICATIONS IN BOOKS (continued)

† R. Skoglund and D. Swackhamer. 1994. Processes Affecting The Uptake And Fate Of Hydrophobic Organic Contaminants By Phytoplankton. In: *Environmental Chemistry Of Lakes And Reservoirs*. L.A. Baker (ed.), Advances in Chemistry Series 237, ACS, Washington, DC.

† D. Swackhamer and R. Skoglund. 1991. The Role Of Phytoplankton In The Partitioning Of Hydrophobic Organic Contaminants In Water. In: *Organic Substances And Sediments In Water,* Vol II, R. Baker (ed.), Lewis Publishers, CRC Press Inc., Boca Roton, FL.

PUBLICATIONS IN NON-REFEREED JOURNALS

R. Skoglund, R. Roy,.J. Walton, and P. Logan. 2011. The Boundaries of REACH - Operational Conditions and Risk Management Measures Define the Obligations of Downstream Users. *Synergist.,* 22(6): 30-32.

R. Skoglund and D. Deeds. 2009. How Can Industrial Hygienists Manage the Far-Reaching Consequences of GHS and REACH? *Synergist.,* 20(8): 31-33.

PEER REVIEWED ABSTRACTS

S. Paradis, T. Blodgett, R. Skoglund, A. Thompson, J. Walton, P. Logan, and R. Roy. 2014. Comparison of an In-house Qualitative Dermal Assessment Tool with Existing Dermal Models. Presented at the *2014 American Industrial Hygiene Conference and Exposition,* San Antonio TX, June 2014 [poster].

S. Paradis, T. Blodgett, R. Skoglund, J. Walton, P. Logan, and R. Roy. 2014. Developing a Framework for the Quantitative Risk Characterization of Dermal Sensitizers in the Workplace. Presented at the *Spring 2014 Meeting of the Society for Chemical Hazard Communication,* Charleston SC, March 2014 [poster].

R. Roy, C. Jacobson, and R. Skoglund. 2013. New Source of Data to Strengthen Chemical Health Hazard Assessments. Presented at the *Spring 2013 Meeting of the Society for Chemical Hazard Communication,* Austin TX, April 2013 [poster].

R. Roy, C. Jacobson, and R. Skoglund. 2012. Coexistence of REACH DMELs and Member State OELs on eSDSs. Presented at the *Spring 2012 Meeting of the Society for Chemical Hazard Communication,* Nashville TN, April 2012 [poster].

R. Roy, L. Milchak, N. Pechacek, J. Walton, and R. Skoglund. 2011. The Use of DMELs in REACH Risk Characterization. Presented at the *2011 Annual Meeting of the Society of Toxicology*; Washington DC, March 2011 and the *Spring 2011 Meeting of the Society for Chemical Hazard Communication,* Seattle, WA, April 2011 [poster].

A. Johnson, C Jacobson, A Stieffenhofer, and R Skoglund. 2010. Meeting GHS and REACH Safety Data Sheet Toxicology Requirements. Presented at the *2010 Annual Meeting of the Society of Toxicology*; Salt Lake City, March 2010 and the *Spring 2010 Meeting of the Society for Chemical Hazard Communication,* New Orleans, April 2010 [poster].

R. Roy, N. Pechacek, L. Milchak, and R. Skoglund. 2010. Impact Of Data Availability On The Calculation Of Reach Dnels For Worker And Consumer Populations. Presented at the *2010 Annual Meeting of the Society of Toxicology*; Salt Lake City, March 2010 and the *Spring 2010 Meeting of the Society for Chemical Hazard Communication,* New Orleans, April 2010 [poster].

N. Pechacek, T. Brunshidle, D. Stein, and R. Skoglund. 2010. Use of Human Repeat Insult Patch Testing to Support Market Claims of “Hypo-Allergenicity”. Presented at the *2010 Annual Meeting of the Society of Toxicology*; Salt Lake City, March 2010

† = Work Related To Graduate Studies

PEER REVIEWED ABSTRACTS (continued)

J. Walton, C. Alfonso, L. Milchak, N. Pehacek, R. Roy and R. Skoglund. 2009. Extending Traditional Dermal Chemical Contact Observation Data to Meet the Dermal Exposure Assessment Requirements of REACH. Presented at the *2009 American Industrial Hygiene Conference and Exposition*, Toronto, ON, Canada, June, 2009 [Poster].

C. Alfonso, J. Walton, L. Milchak, N. Pechacek, R. Roy, and R. Skoglund. 2009. Comparison of a Tier 1 and a Tier 2 Model to Estimate Exposures for Inclusion in a REACH Chemical Safety Report (CSR). Presented at the *2009 American Industrial Hygiene Conference and Exposition*, Toronto, ON, Canada, June, 2009 [Poster].

D. Dreher, J. Gerber, S. Gerber, E. Leishman, N. Pechacek, A. Thompson, and R. Skoglund. 2009. Consumer Label Business Process Redesign. Presented at the *Spring 2009 Meeting of the Society for Chemical Hazard Communication,* Houston, TX, April 2009 [poster].

N. Pechacek, L. Milchak, R. Roy and R. Skoglund. 2009. Use of ConsExpo in Consumer Product Risk Assessments for California Proposition 65 Compliance. Presented at the *2009 Annual Meeting of the Society of Toxicology*; Baltimore, MD, March 2009 and the *Spring 2009 Meeting of the Society for Chemical Hazard Communication,* Houston, TX, April 2009 [poster]

L. Milchak, P. Lieder, P. Heppner and R. Skoglund. 2009. Development of a Structure Activity Relationship Process to Characterize Acute Toxicity for GHS Classification. Presented at the *2009 Annual Meeting of the Society of Toxicology*; Baltimore, MD, March 2009 and the *Spring 2009 Meeting of the Society for Chemical Hazard Communication,* Houston, TX, April 2009 [poster]

S. Northrop, D. Dreher, J. Gerber, E. Leishman, R. Skoglund, and A.C. Thompson. 2008. Hazard Communication Authoring Business Process Redesign. Presented at the *Spring 2008 Meeting of the Society for Chemical Hazard Communication,* Atlanta, GA, April 2008 [poster].

R.R. Roy, N. Pechacek, L. Milchak, and R. Skoglund. 2008. The Use of Health-Based Occupational Exposure Limits as REACH Derived No Effect Levels. Presented at the *2008 Annual Meeting of the Society of Toxicology*; Seattle, WA, March 2008 [poster]. Also presented at the *Spring 2008 Meeting of the Society for Chemical Hazard Communication,* Atlanta, GA, April 2008 [poster] and the *Spring 2008 Meeting of the Northland Chapter of the Society of Toxicology,* Duluth, MN, April 2008 [poster].

C.J. Jacobson, R.R. Roy, C. Kedrowski, A.C. Thompson and R. Skoglund. 2007. Business Process for the Acquisition of Health Hazard Data for GHS and REACH. Presented at the *Spring Meeting 2007 of the Society for Chemical Hazard Communication*, San Antonio, TX, April 2007 [poster].

H. Goeden, P. Shubat, L. Solem, and R. Skoglund. 2004. Building Credibility in K-12 Education. Presented at the *2004 Annual Meeting of the Society of Toxicology*; Baltimore, MD [poster].

R. Skoglund, and the SCHC Professional Development Committee. 2001. Professional development and continuing education opportunities for HazCom professionals: 1993 - 2000 and beyond. Presented at the *Spring 2001 Meeting of the Society for Chemical Hazard Communication*; Savannah, GA [poster].

R. Skoglund, J.L. Butenhoff and R.R. Roy. 2000. Alternatives in animal testing. Presented at the *Spring 2000 Meeting of the Society for Chemical Hazard Communication*; Seattle, WA [poster].

R. Skoglund, H. Carpenter and R.R. Roy. 2000. The role of endocrine disrupters in a "scientifically defensible" hazard determination. Presented at the *Spring 2000 Meeting of the Society for Chemical Hazard Communication*; Seattle, WA [poster].

PEER REVIEWED ABSTRACTS (continued)

R.R. Roy, R. Skoglund, and J.L. Butenhoff. 1999. A comparison of hazard-based and Risk-based approaches to labeling. Presented at the *Spring 1999 Meeting of the Society for Chemical Hazard Communication*; San Antonio, TX [poster].

R. Skoglund, R.R. Roy, and J.L. Butenhoff. 1999. A Comparison of the OSHA hazard classification system and OECD harmonized system. Presented at the *Spring 1999 Meeting of the Society for Chemical Hazard Communication*; San Antonio, TX [poster].

R. Skoglund, and R.R. Roy. 1999. Governance of a certifying organization for chemical hazard communicators. Presented at the *Spring 1999 Meeting of the Society for Chemical Hazard Communication*; San Antonio, TX [poster].

R. Skoglund, J.L. Richardson, and P.B. Walsh. 1998. The anatomy of a HazCom document audit. Presented at the *Spring 1998 Meeting of the Society for Chemical Hazard Communication*; Jacksonville, FL [poster].

R. Skoglund and R.J. Seguy. 1998. One company's strategy in implementing a global product MSDS. Presented at the *Spring 1998 Meeting of the Society for Chemical Hazard Communication*; Jacksonville, FL [poster].

R. S. Skoglund and A.J. Ignatowski. 1998. Professional development training within SCHC. Presented at the *Spring 1998 Meeting of the Society for Chemical Hazard Communication*; Jacksonville, FL [poster].

J.L. Richardson, R.R. Roy, and R. Skoglund. 1997. Patient-based criteria for determining the appropriateness of recommending the induction of emesis as first-aid following chemical ingestion. Presented at the *Spring 1997 Meeting of the Society for Chemical Hazard Communication*; San Diego, CA [poster].

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L.J. Sioris, R.L. Kingston, and R. Skoglund. 1997. The use of an enhanced public poison center model as part of a comprehensive chemical hazard communication program. Presented at the *Spring 1997 Meeting of the Society for Chemical Hazard Communication*; San Diego, CA [poster].

D.B. Chandler, R.R. Roy, and R. Skoglund. 1997. The Role of Material Safety Data Sheets in a HAZMAT Incident: A Case Study. Presented at the *Spring 1997 Meeting of the Society for Chemical Hazard Communication*; San Diego, CA [poster].

D.G. Luth, and R. Skoglund. 1997. The use of an electronic Material Safety Data Sheet distribution system as part of a comprehensive chemical hazard communication program. Presented at the *Spring 1997 Meeting of the Society for Chemical Hazard Communication*; San Diego, CA [poster].

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R. Skoglund, J.L. Rowenhorst (Richardson), and R.R. Roy. 1996. A retrospective analysis of reported pediatric exposures to household consumer pesticides. Presented at the *2nd International Conference on Environmental and Industrial Toxicology: Research and its Application*; Bangkok, Thailand [poster].

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L.J. Sioris, R. Skoglund, R.L., Kingston, J.C. Abbott, and K.A. Ryan. 1995. The electronic poison center. Presented at the *2nd Meeting of the European Association of Poison Centres and Clinical Toxicologists on Computers as an Aid in Poison Centres*, Chru Lille, France. [poster]

L.J. Sioris, R. Skoglund, R.L., Kingston, P. Scearcy, S.W. Hall. 1995. The expansion of the public poison center model to an emergency-response, regulatory-compliance model for chemical manufacturers, employers, and end-users. *1995 Annual Meeting of the National Safety Council*, Dallas, TX. [poster]

R. Skoglund, R.R. Roy, L.J. Sioris, and S.W. Hall. 1995. Medical-center based education and training in clinical and applied toxicology. *The International Toxicologist - Abstracts of the International Congress of Toxicology - VII* [Presented as a poster at 7th International Congress of Toxicology; Seattle, WA]

† R. Skoglund, R.R. Roy, and P.G. Coin. 1995. Toxicity of cadmium to lung cells: Effects of pH and aqueous speciation. *The International Toxicologist - Abstracts of the International Congress of Toxicology - VII* [Presented as a poster at 7th International Congress of Toxicology, Seattle, WA]

R.R. Roy and R. Skoglund. 1995. Human exposure and clinical toxicology of chromated copper arsenate (CCA) wood preservatives. *Przeg. Lek.*, 52(5): 176. [Presented as a poster at the *1995 European Association of Poison Centres and Clinical Toxicologists Scientific Meeting*; Kraków, Poland]

R. Skoglund and R.R. Roy. 1995. An estimate of the excess cancer risk associated with the use of spray adhesives containing dichloromethane. *Przeg. Lek.*, 52(5): 183. [Presented as a poster at the *1995 European Association of Poison Centres and Clinical Toxicologists Scientific Meeting*; Kraków, Poland]

R.R. Roy and R. Skoglund. 1995. Human neutrophil myeloperoxidase-mediated metabolism of promazine *in vitro*. *Przeg. Lek.*, 52(5): 184. [Presented as a poster at the *1995 European Association of Poison Centres and Clinical Toxicologists Scientific Meeting*, Kraków, Poland]

R.R. Roy and R. Skoglund. 1994. Assessment of the dermal sensitizing potential of *para*-tert-butyl phenol resin and para-tert-butylphenol in consumer products. *The Toxicologist* 14(1): 326. [Presented as a poster at the *1994 Annual Meeting of the Society of Toxicology*, Dallas, TX]

† R. Skoglund, R.R. Roy, and J.B. Stevens. 1994. Toxicity of cadmium to pulmonary alveolar macrophages *in vitro*: Potentially toxic species. *The Toxicologist* 14(1): 233. [Presented as a poster at the *Society of Toxicology 1994 Annual Meeting*, Dallas, TX]

R. Skoglund and R.R. Roy. 1993. An estimate of the excess cancer risk associated with the use of a spray adhesive containing free 1,3-butadiene. *Vet. Human Toxicol*., 35(4): 357. [Presented as a poster at the *1993 International Congress of Clinical Toxicology*, New York, NY]

R.L. Kingston, E. Carmine, R. Skoglund, and L. Hovda. 1993. Neutralization as a treatment for acid ingestion. *Vet. Human Toxicol*., 35(4): 332. [Presented as a poster at the *1993 International Congress of Clinical Toxicology*, New York, NY]

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M.S. Gruenhagen, R.L. Kingston, R. Skoglund, and L.J. Sioris. 1993. Product label 1-800 phone numbers for emergency medical product information. *Vet. Human Toxicol*., 35(4): 323. [Presented as a poster at the *1993 International Congress of Clinical Toxicology*, New York, NY]

R. Skoglund, R.R. Roy, and L.J. Sioris. 1993. Evaluation of art and craft products for chronic toxicity under ASTM D 4236-88. *The Toxicologist*, 13(1): 417. [Presented as a poster at the *Society of Toxicology 1993 Annual Meeting*, New Orleans, LA]

R.R. Roy, R. Skoglund, and L.J. Sioris. 1992. Evaluation of the toxicology of tartrazine (FD&C Yellow No. 5) for labeling requirements under ASTM D 4236-88. *Vet. Human Toxicol*., 34(4): 357. [Presented as a poster at the *1992 International Congress of Clinical Toxicology*, Tampa, FL]

† K. Stange, R. Skoglund, and D.L. Swackhamer. 1992. Uptake and accumulation of 40 PCBs by *Selenastrum capricornutum, Anabena sp., and Synedra sp*. *35th Annual Conference of the International Association for Great Lakes Research*, Waterloo, Ontario, Canada. [poster]

† R. Skoglund and D.L. Swackhamer. 1991. The role of kinetics in the accumulation of hydrophobic organic compounds by phytoplankton. *12th Annual Conference of the Society of Environmental Toxicology and Chemistry*, Seattle, WA. [platform session, presented by R. Skoglund]

R. Skoglund, K.A. Ryan, and L.J. Sioris. 1991. Development of an optically based image management system for the storage and retrieval of MSDSs in a poison center. *Vet. Human Toxicol*., 33(4): 378. [poster at the *199 International Congress of Clinical Toxicology*, Toronto, Ontario, Canada]

† R. Skoglund and D.L. Swackhamer. 1991. Spatial and seasonal variations in the bioaccumulation of PCBs by phytoplankton in Green Bay, Lake Michigan. *34th Annual Conference of the International Association for Great Lakes Research*, Buffalo, NY. [platform session, presented by R. Skoglund]

† D.L. Swackhamer, R. Skoglund, and K. Stange. 1991. The role of phytoplankton in controlling the fate of pollutants in lakes. *201st National Meeting of the American Chemical Society, Environmental Science Division*, Atlanta, GA. [platform session, presented by D.L. Swackhamer]

† R. Skoglund and D.L. Swackhamer. 1991. Bioaccumulation of HOCs in phytoplankton: Field studies. *14th Annual Midwest Environmental Chemistry Workshop*. Navarre, MN. [poster]

† R. Skoglund and D.L. Swackhamer. 1991. Bioaccumulation of HOCs in phytoplankton: Laboratory studies. *14th Annual Midwest Environmental Chemistry Workshop*, Navarre, MN. [poster]

† K. Stange, R. Skoglund, and D.L. Swackhamer. 1991. Uptake of PCBs into the food chain at the primary trophic level: The role of algal species characteristics. *14th Annual Midwest Environmental Chemistry Workshop*. Navarre, MN. [poster]

† R. Skoglund and D.L. Swackhamer. 1991. Bioaccumulation of HOCs in phytoplankton: Field studies. *National Sea Grant Site Visit*. Minneapolis, MN. [poster]

† R. Skoglund and D.L. Swackhamer. 1991. Bioaccumulation of HOCs in phytoplankton: Laboratory studies. *National Sea Grant Site Visit*. Minneapolis, MN. [poster]

† R. Skoglund and D.L. Swackhamer. 1990. Spatial and seasonal variations in the bioaccumulation of PCB by plankton in Green Bay, Lake Michigan. *11th Annual Conference of the Society of Environmental Toxicology and Chemistry*, Washington, D.C. [platform session, presented by D.L. Swackhamer]

PEER REVIEWED ABSTRACTS (continued)

† R. Skoglund and D.L. Swackhamer. 1990. The role of kinetics in the uptake of hydrophobic organic compounds by phytoplankton. *13th Annual Midwest Environmental Chemistry Workshop*, Champagne, IL. [platform session, presented by R. Skoglund]

† D.L. Swackhamer, and R. Skoglund. 1990. Modeling the bioaccumulation of HOCs at the primary trophic level. *Gordon Research Conference on Environmental Sciences: Water,* New Hampton, NH. [platform session, presented by D.L. Swackhamer]

† R. Skoglund and D.L. Swackhamer. 1990. Kinetic-based model for the uptake of HOCs by phytoplankton. *33th Annual Conference of the International Association for Great Lakes Research,* Windsor, Ontario, Canada. [platform session, presented by R. Skoglund]

† D.L. Swackhamer, R. Skoglund, and K. Stange. 1990. The uptake and bioaccumulation of PCBs by phytoplankton. Presented at the *Annual Conference of the American Chemical Society,* Boston, MA. [platform session presented by D.L. Swackhamer]

† R. Skoglund and D.L. Swackhamer. 1989. Bioaccumulation of hydrophobic organic compounds by phytoplankton. Presented at the *Annual Conference of the Society of Environmental Toxicology and Chemistry;* Toronto, Ontario, Canada. [platform session presented by R. Skoglund]

† R. Skoglund and D.L. Swackhamer. 1989. Role of phytoplankton in the cycling of toxic contaminants. Presented at the *National Sea Grant Site Visit;* Duluth, MN. [poster]

† R. Skoglund and D.L. Swackhamer. 1989. Bioaccumulation of hydrophobic organic compounds at the primary trophic level. Presented at the *Annual Conference of the International Association for Great Lakes Research;* Madison, WI. [platform session, presented by R. Skoglund]

† R. Skoglund and D.L. Swackhamer. 1989. Bioaccumulation of hydrophobic organic compounds at the primary trophic level. Presented at the *National Sea Grant Conference;* Charleston, SC. [poster]

† R. Skoglund and D.L. Swackhamer. 1988. Kinetics of algal bioconcentration: To equilibrate or not to equilibrate. Presented at the *Annual Midwest Environmental Chemistry Workshop;* Minneapolis, MN. [platform session presented by R. Skoglund]

† D.L. Swackhamer and R. Skoglund. 1988. Uptake of PCBs by phytoplankton. *Gordon Research Conference on Environmental Sciences: Water;* New Hampton, NH. [platform session presented by D.L. Swackhamer]

† M.W. Holmes, R. Skoglund, D.L. Swackhamer, S.J. Eisenreich, T. Franz, and D.S. Liebl. 1988. Inter-comparison of methodologies for measuring aqueous PCBs in particulate and dissolved phases. Presented at the *Annual Conference of the International Association for Great Lakes Research;* Hamilton, Ontario, Canada. [poster]

† R. Skoglund and D.L. Swackhamer. 1988. Bioaccumulation of PCB congeners by algae. Presented at the *Annual Conference of the International Association for Great Lakes Research;* Hamilton, Ontario, Canada. [platform session presented by R. Skoglund]

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Last updated: May 8 2011

PERSONAL INFORMATION

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Office at UNC: 303 Hanes Building, Department of Statistics and Operations Research, University of North Carolina, Chapel Hill, NC 27599-3260.
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CAREER HISTORY

Director of SAMSI, with effect from July 1, 2010.
Mark L. Reed III Distinguished Professor of Statistics, University of North Carolina, Chapel Hill, since July 2004.
Professor of Statistics, University of North Carolina, Chapel Hill, January 1991-present (on leave, 1994-1996).
Chair of Statistics Department from July 2000 until June 2002.
Joint appointment as Professor of Biostatistics, from February 2008.
Professor of Statistical Science, Cambridge University, U.K. (1994-1996)
Professor of Statistics, University of Surrey, U.K. (1985-1990)
Lecturer in Statistics, Imperial College, London, U.K. (1979-1985)
Visiting positions in many institutions including University of Chicago, Australian National University, Technion, etc.

EDUCATION

B.A. in Mathematics (First Class), Oxford University, 1972-1975 (M.A. 1985).
Ph.D. in Operations Research, Cornell University, 1975-1979. Ph.D. Advisor: Howard M. Taylor III.
No postdoctoral position.

HONORS

J. Stuart Hunter Lecturer, The International Environmetrics Society, 2004.
2004 Statistical Science Award, Centers for Disease Control and Prevention (awarded jointly with S. Kolenikov and L.H. Cox for the paper "Spatiotemporal modeling of PM2.5 data with missing values", Journal of Geophysical Research 2003; 108:11-1 11-11).
Fellow, American Statistical Association, 2000.
Distinguished Achievement Medal, Section on Statistics and the Environment, American Statistical Association, 2000.
Royal Statistical Society, Guy Medal in Silver, 1991.
Fellow, Institute of Mathematical Statistics, 1991.
Member of the International Statistical Institute, 1991.
Chartered Statistician of the Royal Statistical Society, 1994.

EDITORIAL SERVICE

Associate Editor, *Advances in Water Resources* , 2009-.
Associate Editor, *Statistical Science* , 2006-2008.

General Editor (one of six), Monographs on Statistics and Applied Probability. Chapman and Hall/CRC Press (since 2005).
Editor, Chapman and Hall/CRC Press Series in Environmental Statistics, from 2003.
Associate Editor of Extremes, 1997-2007.
Joint Editor of the Statistical Science Series published by Oxford University Press, 1999-2002.
Joint Editor of the Royal Statistical Society Series published by Oxford University Press, 1991-1999.
Associate Editor of Biometrika, 1998-1999.
Associate Editor of the Journal of the American Statistical Association (Case Studies and Applications), 1996-1999.
Member of Editorial Board of the Applied Probability journals, 1990-1999.
Associate Editor of Technometrics, 1992-1994.
Joint Editor, Journal of the Royal Statistical Society, Series B, 1988-1992.
Associate Editor, Journal of the Royal Statistical Society, Series B, July 1986-December 1987.

OTHER PROFESSIONAL SERVICE

Chair, Section on Risk Analysis, American Statistical Association (calendar year 2010)
Member of Program Leaders' Committee for SAMSI Program on Space-Time Analysis for Environmental Mapping, Epidemiology and Climate Change, 2009-2010.
Faculty Mentor, IMSM graduate student workshop, North Carolina State University, July 2009.
Member of the Committee on Climate Change Policy and Statistics, American Statistical Association, since December 2008.
Local Scientific Coordinator of SAMSI Program on Risk Analysis, Extreme Events and Decision Theory, academic year 2007-2008.
Member of Mathematics Review Panel, Foundation for Science and Technology (Portugal), February 18-23, 2008 (responsible for visiting 11 research units in the Lisbon area, preparing reviews and making funding evaluations)
Co-organizer (with David Marker, Mary Christman and Doug Nychka) of the workshop "A Statistical Consensus on Climate Change", organized and sponsored by the American Statistical Association, October 2007.
Member of Product Development Committee for the Synthesis and Assessment Product 3.3 ("Weather and Climate Extremes in a Changing Climate"), for the U.S. Government Climate Change Science Program, 2006-2008.
Chair of General Topics Committee for the 56th Session of the International Statistical Institute, Lisbon, Portugal, August 22-29, 2007.
Invited participant, workshop on Health Effects of Ambient Ozone, University of Rochester Medical Center, Rochester, N.Y., June 2007.
Member of Local Development Committee, Statistical and Applied Mathematical Sciences Institute, North Carolina, (since 2005).
Member of the Science & Technical Advisory Committee, Albemarle-Pamlico National Estuary Program (since 2004)
Trustee of SPRUCE (a U.K.-based charity that organizes conferences and workshops in environmental statistics), since 2002.
Member of National Research Council committee to review Synthesis and Assessment Product 1.1 ("Temperature Trends in the Lower Atmosphere: Steps for Understanding and Reconciling Differences"), for the U.S. Government Climate Change Science Program, 2005.
Chair of Program Leaders Committee, SAMSI Program on Large-Scale Computer Models for Environmental Systems. Statistical and Applied Mathematical Sciences Institute, North Carolina, January-June 2003.
Co-organizer (with P. Embrechts, D. Goodman and W.J. Fitzgerald) of a three-week Newton Institute Program on "Managing Uncertainty: New Tools for Insurance, Economics and Finance", Cambridge University, July 23-August 10 2001.
Member of Advisory Board for the Geophysical Statistics Project, National Center for Atmospheric Research, 2000-2002.
Health Effects Institute, Member of Review Panel for Particulate Epidemiology Re-Analysis Project (1999-2000), and a Site Visit Team (2007).
Member of Environmental Statistics Committee for the International Statistical Institute, 1998-2005.
Co-Organiser and Visiting Fellow, Program on "Nonlinear and Nonstationary Signal Processing", Isaac Newton Institute for Mathematical Sciences, Cambridge, U.K., July-December 1998.

Chairman, Royal Statistical Society Research Section, 1995-96 session.
Member of Council, Institute of Mathematical Statistics (1995-1998).
Member of IMS Special Papers Committee 1989-1991 and 1996-1998 (chair 1998).
Member of Council, Institute of Mathematical Statistics (1995-1998).
Committee for Statistics in the Physical Sciences of the Bernoulli Society, 1989-present.
Member of Council of the Bernoulli Society, 1987-1991.
Member of European Regional Committee of the Bernoulli Society, 1988-90.
Co-organiser (with D.R. Cox and A.P. Dawid) of the Edinburgh Workshop on Asymptotic Statistics, July 1986.

DEPARTMENTAL SERVICE (current)

Director of Graduate Studies and Director of Admissions for INSTORE program.
Chair of Committee on Post-tenure Review and Promotions.
Member of Curriculum Committee.

UNIVERSITY SERVICE

University Research Council, Divison of Physical Sciences and Mathematics, committee member or co-chair; Fall 2006 to Spring 2009.
Member of Fellowship Committee of the Graduate School and the Society of Fellows Faculty Committee, since Fall 2004.
Member of Science Advisers Committee established by Associate Dean Forest, 1998-2000.
University-appointed Trustee of NISS, 2001--2004.

PH.D. STUDENTS COMPLETED

Jonathan P. Cohen (Imperial College, Ph.D. obtained 1982)
Anthony C. Davison (Imperial College, Ph.D. 1985, joint advisor)
H.K. Sammy Yuen (Surrey University, Ph.D., 1988)
Jonathan A. Tawn (Surrey University, Ph.D., 1988)
Linda C. Wolstenholme (Surrey University, Ph.D., 1989, joint advisor)
Z.-Q. John Lu (North Carolina, Ph.D., 1994)
Seokhoon Yun (North Carolina, Ph.D., 1994)
Steven Garren (North Carolina, Ph.D., 1994)
Melissa G. Smith (North Carolina, Ph.D., 1996, joint advisor)
Amy M. Grady (North Carolina, Ph.D., 2000)
Dan Spitzner (North Carolina, Ph.D., 2001)
Zhengjun Zhang (North Carolina, Ph.D., 2002)
Petrutza Caragea (North Carolina, Ph.D., 2003)
Francisco Chamu Morales (North Carolina, Ph.D., 2005)
Stas Kolenikov (North Carolina, Ph.D., 2005)
Michele Trovero (North Carolina, Ph.D., 2007)
Jie Zhou (North Carolina, Ph.D., 2007)
Ping Bai (Co-advisor - principal advisor was Yuong Truong; North Carolina, Ph.D., 2007)
Elizabeth Shamseldin (North Carolina, Ph.D., 2008)
Evangelos Evangelou (joint advisor with Dr. Zhengyuan Zhu; North Carolina, Ph.D., 2009)
Xuanyao He (joint advisor with Dr. Zhengyuan Zhu; North Carolina, Ph.D., 2009)

CURRENT GRADUATE STUDENTS

Brian Lopes, Ph.D. candidate
Soyoung Jeon
Xuan Li
Robert Erhardt

CONFERENCE TALKS AND SCIENTIFIC PRESENTATIONS, 2000-2009.

Comparing climate models with observational data: Detection and attribution for climate means and climate extremes. Invited speaker (4 talks) at 41st Winter Conference on Statistics, University of Umea, March 7-11, 2010.
From theory to practice: A mathematical history of order statistics and their application to strength of materials, economics and climate change. Invited talk at workshop to honor Ishay Weissman, Technion, Haifa, Israel, December 7 2009.
An overview of etxreme value theory. Invited presentation at Workshop on Spatial Extremes; Bernoulli Centre, EPFL, Lausanne, Switzerland; November 9--13, 2009.
Invited participant in a panel discussion on Climate Change Policy. Joint Statistical Meetings, Washington D.C., August 2-6 2009.
Estimating the Probability of Climate Change. Organizer and speaker in invited session at European Meeting of Statisticians; Toulouse, France, July 20--24, 2009.
Extreme Precipitation Trends over the Continental United States. Invited presentation at Workshop on Spatial Extremes; Bernoulli Centre, EPFL, Lausanne, Switzerland; July 13--17, 2009.
Graybill conference/EVA VII at Colorado State (June 23-25). Organizer and Discussant of an invited paper session on Geostatistics and Climate.
Extreme Precipitation Trends over the Continental United States. Invited presentation at Workshop on Climate Change and Extreme Value Theory, EURANDOM and KNMI, The Netherlands, May 11, 2009
Extreme Precipitation Trends over the Continental United States. Invited presentation at Workshop on Effects of Climate Change: coastal systems, policy implications and the role of statistics. Sliema, Malta, March 19, 2009
Detection and Attribution for Precipitation Trends. Meeting of the International Detection and Attribution Group, Boulder, Colorado, January 21-23, 2009.
Extreme Value Theory. Invited presentation at the American Meteorological Society short course on Statistics of Extreme Events, Phoenix, January 9 2009.
Statistics for Climate Extremes. Invited presentation at one-day meeting on "Thinking About Potential Catastrophes from Climate Change", National Academy of Sciences, November 6 2008.
Climate Extremes and Global Warming: A Statistician's Perspective. Invited talk at 136th APHA Annual Meeting, San Diego, October 27 2008.
Risk and Extremes: Assessing the Probabilities of Very Rare Events. Invited talk at Fourteenth Army Conference on Applied Statistics, Virginia Military Institute, Lexington, VA, October 22 2008.
Hurricanes and Global Warming. Topic Contributed Paper session at Joint Statistical Meetings, Denver, August 5 2008.
Multivariate Extremes and Risk. Invited speaker and session organizer at Interface 2008, Durham, May 22 2008.
Spatial estimation of return values in a precipitation dataset with trend. Workshop on Precipitation Intensity Estimates in a Changing Climate, National Climatic Data Center, Asheville, April 30, 2008.
Extreme precipitation trends over the continental United States. Department seminar, Department of Statistics, University of Wisconsin-Madison, March 5, 2008.
Hurricanes and global warming. Talk given to Multivariate Extremes-Methodology Workshop Group, Statistical and Applied Mathematics Sciences Institute, February 11, 2008.
More on multivariate extreme value theory. Talk given to Multivariate Extremes-Methodology Workshop Group, Statistical and Applied Mathematics Sciences Institute, December 13, 2007.
Extreme Precipitation over the Continental United States. Invited talk given at the American Geophysical Union Conference, San Fransisco, December 10, 2007.
Reassessing the relationship between ozone and short-term mortality in U.S. urban communities. Talk given to Environmental Risk Workshop Group, Statistical and Applied Mathematics Sciences Institute, December 3, 2007.
Statistics of extremes: Assessing the probabilities of very rare events. Lecture given at Undergraduate Workshop, SAMSI program on Risk Analysis, Extreme Events and Decision Theory. November 9, 2007.
Discussion: Understanding complexity in physical systems. Presented at SAMSI-NSF workshop on CDI initiative. November 1, 2007.
Overview of multivariate extreme value theory. Talk given to Multivariate Extremes-Methodology Workshop Group, Statistical and Applied Mathematics Sciences Institute, October 11, 2007.
Reassessing the relationship between ozone and short-term mortality in U.S. urban communities. Department Seminar, UNC Biostatistics Department, October 3, 2007.
Risk Analysis and Extremes. Tutorial lecture at the Opening Workshop of the SAMSI program on Risk

Analysis, Extreme Events and Decision Theory. September 16, 2007.
Extreme precipitation trends over the continental United States. Contributed paper given at the 56th Session of the International Statistical Institute, Lisbon, Portugal, August 24, 2007.
Precipitation extremes and spatial statistics. Invited talk at the Tenth International Conference on Statistical Climatology. Beijing, China, August 20, 2007.
Reassessing the relationship between ozone and short-term mortality in U.S. urban communities. Invited talk, Joint Statistical Meetings, Salt Lake City, July 20, 2007.
Bayes hierarchical analysis of the EEAWHI. Seminar at NIEHS Biostatistics Group, National Institute of Environmental Health Science, May 15 2007.
Extreme precipitation trends over the continental United States. Invited talk at the Spring Lecture Series, University of Arkansas, April 14 2007.
Trends in observational and model-generated precipitation extremes: are they compatible? Talk to the International Detection and Attribution Group, Duke University, March 14, 2007.
Extreme precipitation trends over the continental United States. Invited talk at the 15th `Aha Huliko'a Hawaiian Winter Workshop, Honolulu, January 24, 2007
Extreme precipitation trends over the continental United States. Invited talk at the Ninth Annual Winter Workshop, Environmental and Environmental Health Statistics, Department of Statistics, University of Florida, January 12, 2007.
The CCSP report on temperature trends in the lower atmosphere. Joint Statistical Meetings, Seattle, August 9 2006. I was a speaker and also joint organizer (with Prof. Ed Wegman, George Mason University) of a late-breaking session entitled "What is the role of statistics in public policy debates about climate change?"
Discussant in a session on "Statistical and computational issues in climate research", Joint Statistical Meetings, Seattle, August 7 2006.
Discussant of the paper "Deriving Bayesian and frequentist estimators from time-invariant estimating equations: a unifying approach" by Antonietta Mira and Adrian Baddeley. Eighth Valencia Meeting on Bayesian Statistics, Alicante, Spain, June 2 2006.
Kriging with estimated parameters. Seminar in the Statistics Department, Oxford University, May 26 2006.
A transformed, threshold Gaussian model for precipitation extremes. Seminar in the Atmospheric Physics group, Oxford University, May 25 2006.
A transformed, threshold Gaussian model for precipitation extremes. National Center for Atmospheric Research, March 30, 2006.
Bayesian modeling of uncertainty in ensembles of climate models. Hawaii International Conference on Statistics, Mathematics and Related Fields. January 18 2006.
Kriging with Estimated Parameters. Iowa State University, September 12 2005.
Bayesian Kriging and Bayesian Network Design. OBayes 5 Workshop, Branson, Missouri, June 6 2005.
Kriging with Estimated Parameters. U.C. Santa Barbara, May 10 2005.
An Overview of Environmental Statistics. Presented at ISI "Environmental Statistics Theme Day". 55th Session of the International Statistical Institute, Sydney, Australia, April 6 2005.
Kriging with Estimated Parameters. UNC Statistics/OR Colloquium, January 10, 2005.
Spatial Interpolation of Airborne Particulates and its Application to Epidemiological Studies. Spatial Structures in Social Sciences Colloquium, Brown University, October 8 2004.
The Design of Spatial Monitor Networks. Joint Statistical Meetings, Toronto, August 10 2004.
Bayesian Kriging and Bayesian Network Design. The J. Stuart Hunter Lecture, TIES 2004, ACCURACY 2004 Joint Conference, Portland, Maine, June 30 2004.
Estimating the Mean Level of Fine Particulate Matter: An Application of Spatial Statistics. Boston University, April 16 2004.
Multivariate Extremes, Max-stable Processes and the Analysis of Financial Risk. Invited participant at workshop on Statistics in Finance, Mathematical Institute, Oberwolfach, January 14 2004.
Changepoints and Extremes. Five-minute talk given at SAMSI workshop on Network Modeling for the Internet,October 31 2003. Spatial Statistics in Environmental Science. Seminar, Statistical Sciences Department, Cornell University, October 29 2003.
Approximate Likelihoods in Spatial Statistics. Seminar, Statistical Laboratory, Cambridge University, October 17 2003.
The Role of Statistics in Assessing the Public Health Threat of Air Pollution. Invited talk in meeting IPM-51, 54th Session of the International Statistical Institute, Berlin, Germany, August 20 2003.
Large-Scale Computer Models for Environmental Systems. Invited talk, session on "SAMSI after one year", Joint Statistical Meetings, August 3 2003.
Statistics of Extremes, with Applications in Environmental Science, Insurance and Finance. Plenary Lecture, First IMS-IBSA Joint Meeting, San Juan, Puerto Rico, July 24, 2003.

Likelihood Methods in Spatial Statistics. Invited talk at Spruce VI, University of Lund (Sweden), June 16, 2003.
Statistics of Climate Change. Lecture given at SAMSI Outreach meeting, June 9, 2003.
The Statistics of Extremes. Applied Mathematics Department, University of Colorado, Boulder, June 5, 2003.
Geostatistical Modeling. Presented at the SAMSI/GSP workshop on Spatial-Temporal Statistics, National Center for Atmospheric Research, Boulder, CO, June 2, 2003.
Multivariate Extremes, Max-Stable Processes and the Analysis of Financial Risk. Invited talk at the International Conference on Reliability and Survival Analysis 2003, University of South Carolina, May 24, 2003.
Extreme Value Statistics in Climatology. Invited presentation at Special DOE/NOAA Workshop on Climate Change and Detection. Duke University, April 24 2003.
Discussion of session on Network Design. ENAR Spring Meeting, Tampa, FL, April 1 2003.
Data Analytic Procedures. HEI Workshop to Improve Estimates of Diesel and Other Emissions in Epidemiologic Studies. Health Effects Institute, Baltimore, December 5 2002.
Statistics of Climate Change. Lecture given at SAMSI Outreach meeting, November 9, 2002.
Discussion presented at EPA Workshop on GAM-Related Statistical Issues in PM Epidemiology. Research Triangle Park, November 6, 2002.
The Effect of Aggregation on Estimates of Long-Range Dependence. Presented at UNC Internet Traffic Data Study Group, October 29, 2002.
Panel Discussion on Particulate Matter Epidemiology, Joint Statistical Meetings, New York, August 12 2002.
NSF Workshop on "Statistics: Challenges and Opportunities for the 21st Century", at the National Science Foundation, May 6-8 2002. Invited participant and plenary lecturer on Statistics in the Geophysical and Environmental Sciences.
Statistics of Extremes, with Applications in Environmental Science, Insurance and Finance. Chotley Dal and Mohra Revi Rustagi Memorial Lecture, Ohio State University, April 30, 2002.
Spatial Modeling of Atmospheric Pollutants. Invited talk at Interface 2002, Montreal, April 19 2002.
A Statistical Critique of the 2001 PM Criteria Document - ENAR Spring Meeting, Arlington VA, March 18, 2002.
Extreme Values and Financial Risk Assessment - IBM Watson Research Center, March 15, 2002.
Spatial Statistics in Environmental Science. Three lectures given at the Troisieme Cycle Romand, Champery, Switzerland, March 2-5, 2002.
The Assessment of Trends in Environmental and Climatological Processes. Seminar at Florida State University, January 10, 2002.
Statistics of Extremes, with Applications in Environment, Insurance and Finance. Three lectures given at the SEMSTAT meeting on extreme value theory, Gothenburg, Sweden, December 10-15, 2001.
Trends in Spatial Processes. First Spanish Meeting on Spatio-Temporal Processes. Bencassim, October 29. 2001.
The Assessment of Trends in Environmental and Climatological Processes. Seminar at Colorado State University, October 17, 2001.
Extreme Values, Max-Stable Processes and Financial Risk. UNC Statistics Department Colloquium, October 8, 2001.
Models and Computations for Nonstationary Spatial Processes. Invited talk at 53rd Session of International Statistical Institute, Seoul, Korea, August 22-29 2001.
Max-Stable Processes and Value At Risk. Seminar, Managing Risk program, Isaac Newton Institute, Cambridge University, August 9 2001.
Quantitative Methods for Bounding Low Probability/High Severity Events. Corporate Governance Workshop, Managing Risk program, Isaac Newton Institute, Cambridge University, August 3 2001. (Part of a joint presentation with Dougal Goodman, Foundation for Science and Technology.)
Large Insurance Claims and Climatological Trends. Environmental Risk Workshop, Managing Risk Program, Isaac Newton Institute, Cambridge University, August 1 2001.
Bayesian Threshold Modelling for Insurance and Weather Extremes. Insurance Risks Workshop, Managing Risk Program, Isaac Newton Institute, Cambridge University, July 26 2001.
CBMS Course in Enviromental Statistics, University of Washington, June 25-29, 2001 (10 lectures).
Trends in Rainfall Extremes. Seminar at Pacific Northwest National Laboratory, June 22, 2001.
ACACIA Climate Extremes workshop, National Center for Atmospheric Research, Boulder, CO, April 2001.
Advanced Workshop on Environmental Monitoring and Sampling, Estoril, Portugal, March 2001.
NSF/NBER Time Series workshop, Fort Collins, CO, September 2000.

Fourteenth SINAPE meeting (Brazilian Statistical Society meeting), July 2000.
AMS Summer Research Conference on "Bayesian, frequentist and likelihood approaches to inference: a synthesis". Mount Holyoke College, July 2000.
Fifth International Meeting of the Bernoulli Society, Guanajuato, May 2000.
Workshop on Inference for Stochastic Processes, Athens, Georgia, May 2000.

RESEARCH FUNDING AT UNC

NSF Award DMS-0605434, "Optimal Design of Experiments for Correlated Observations" (co-PI; PI is Dr. Zhengyuan Zhu). $218,961, 07/01/06 to 06/30/09.
American Petroleum Institute, "Reassessing the relationship between ozone and short-term mortality in US urban communities" (PI), $65,332, 07/01/06 to 12/31/06.
Environmental Protection Agency, "Effects of climate change of human health: current and future impacts" (one of several senior investigators; PI is Dr. Adel Hanna, Carolina Environmental Program). $599,103 from 07/01/05 to 06/30/08
North Carolina Urban Water Consortium, "Drought vulnerability in North Carolina: Low flow response to expected climate and land-use change" (co-PI; PI is Dr. Lawrence Band, UNC Department of Geography). $65,441 from 01/01/05 to 06/30/06
NOAA award, "Statistical Assessment of Uncertainty in Present and Future North American Climate Extremes" (PI; co-PI is Dr. Gabriele Hegerl, Duke University). $414,981, 02/01/05 to 01/31/09 (UNC portion is $256,734).
NIH/NIEHS, The environmental epidemiology of arrythomogenesis in WHI. One of numerous co-investigators; PI is Dr. Eric Whitsel (UNC, Department of Epidemiology). $2,377,066, 09/08/03 to 05/31/08.
NSF Award DMS-0084375, "Spatial Modeling, Analysis and Prediction of Nonstationary Environmental Processes." (PI) $149,587, 2000-2004
NSF Award DMS-9971980, "Extreme Values, Time Series and Prediction" (PI). $65,000, 1999-2001.
EPA Cooperative Agreement CR-827737-01-0, "Statistical Issues in Particulate Matter Studies" (PI), $197,473, 1999-2001.
EPA Contract OD-5210-NAEX, "Estimating Spatial Trends in Airborne Concentrations and Total Deposition" (PI), $45,955, 1999-2000.
NSF Award DMS-9803794, "Workshops on Nonlinear and Nonstationary Signal Processing" (PI), $19,000, 1998-1999.
NSF Award DMS-9705166, "Significance Testing of Pattern Correspondence Statistics" (PI), $63,000, 1997-1999 (cost-free extension to July 2000).
NSF Award DMS-9205112, "Chaotic time series and environmental extremes" (PI). $72,500, 1992-1995.
NSF Award DMS-9115750 (PI; joint with Professor P.J. Robinson, Department of Geography), "Mathematical Sciences: Climatic thresholds and climate change", $97,185, 1991-1994.
NSF SCREMS Award (jointly with G. Simons, J.S. Marron, E. Carlstein and J. Fan), $80,000, 1990-2.

RESEARCH FUNDING CURRENTLY PENDING
(as of February 11 2010)

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BOOKS

M.J. Crowder, A.C. Kimber, R.L Smith and T.J. Sweeting (1991), *Statistical Analysis of Reliability Data*. Chapman and Hall, London.
W.J. Fitzgerald, R.L. Smith, A.T. Walden and P.C. Young (editors) (2000), *Nonlinear and Nonstationary Signal Processing* . Cambridge University Press, Cambridge, U.K.
G.A. Young and R.L. Smith (2005), *Essentials of Statistics Inference* . Cambridge University Press, Cambridge, U.K.

PAPERS PUBLISHED OR ACCEPTED FOR PUBLICATION

(* denotes refereed paper or book chapter)

*B.W. Turnbull, H. Kaspi and R.L. Smith (1978), Adaptive sequential procedures for selecting the best of several normal populations. *J. Statist. Comput. Simul.* **7**, 133-150.
*R.L. Smith (1980), A probability model for fibrous composites with local load sharing. *Proc. R. Soc. Lond. A* **372**, 539-553.
*R.L. Smith and S.L. Phoenix (1981), Asymptotic distributions for the failure of fibrous materials under series-parallel structure and equal load sharing. *J. Appl. Mechanics* **103**, 75-82.
*R.L. Smith (1982), The asymptotic distribution of the strength of a series-parallel system with equal load-sharing. *Ann. Probab.* **10**, 137-171.
*R.L. Smith (1982), Uniform rates of convergence in extreme value theory. *Adv. Appl. Prob.* **14**, 600-622.
*I. Gerontidis and R.L. Smith (1982), Monte Carlo generation of order statistics from general distributions. *Appl. Statist.* **31**, 238-243.
*R.L. Smith (1982), A note on a probability model for fibrous composites. *Proc. R. Soc Lond. A.* **382**, 179-182.
*D.G. Harlow, R.L. Smith and H.M. Taylor (1983), Lower-tail analysis of the distribution of strength of a series-parallel system. *J. Appl. Prob.* **20**, 358-367.
*R.L. Smith (1983), Limit theorems and approximations for the reliability of load-sharing systems. *Adv. Appl. Prob.* **15**, 304-330.
*L.N. McCartney and R.L. Smith (1983), Statistical theory of the strength of fibre bundles. *J. Appl. Mech.* **50**, 601-608.
*S.L. Phoenix and R.L. Smith (1983), A comparison of probabilistic techniques for the strength of fibrous materials under local load-sharing among fibres. *Int. J. of Solids and Structures* **19**, 479-496.
*R.L. Smith, S.L. Phoenix, M.R. Greenfield, R.B. Henstenburg and R.E. Pitt (1983). Lower-tail approximations for the probability of failure of 3-D fibrous composites with hexagonal geometry. *Proc. R. Soc. Lond. A* **388**, 352-391.
*R.L. Smith (1983), The random variation of stress concentration factors in fibrous composites. *J. Mater. Sci. Letters* **2**, 385-387.
*J. Malathronas, J. Perkins and R.L. Smith (1983), The availability of a system of two unreliable machines connected by an intermediate storage tank. *IIE Transactions* **15**, 195-201.
*R.L. Smith and H.M. Taylor (1984), Models for fibre-matrix composites with local load-sharing. *Operations Research* **32**, 649-659.
*R.L. Smith (1984), Threshold methods for sample extremes. In *Statistical Extremes and Applications*, edited by J. Tiago de Oliveira, Reidel, Dordrecht, 621-638.
*R.L. Smith (1984), Properties of biased coin designs in sequential clinical trials. *Ann. Statist.* **12**, 1018-1034.
*R.L. Smith (1984), Sequential treatment allocation using biased coin designs. *J. Roy. Statist. Soc. B* **46**, 519-543.
*R.L. Smith (1985), Maximum likelihood estimation in a class of nonregular cases. *Biometrika* **72**, 67-90.
R.L. Smith (1985), Probabilistic models for composites: Are there flaws in the theory? In *Probabilistic Methods in the Mechanics and Solids and Structures*, edited by S. Eggwertz and N.C. Lind, Springer Verlag, Berlin, 291-298.
*A.S. Watson and R.L. Smith (1985), An examination of statistical theories for fibrous materials in the light of experimental data. *J. Mater. Sci.* **20**, 3260-3270.
*R.L. Smith and I. Weissman (1985), Maximum likelihood estimation of the lower tail of a probability distribution. *J. Roy. Statist. Soc. B* **47**, 285-298.
R.L. Smith (1985), Statistics of Extreme Values. *Proc. 45th Session ISI*, Paper 26.1.
*L.-J. Wei, R.T. Smythe and R.L. Smith (1986), K-treatment comparisons with restricted randomization rules in clinical trials. *Ann. Statist.* **14**, 265-274.
*R.L. Smith and J.E. Miller (1986), A non-Gaussian state space model and application to the prediction of records. *J. Roy. Statist. Soc. B* **48**, 79-88.

*R.L. Smith (1986), Extreme value statistics and reliability applications. *Reliability Engineering* **15**, 161-170.
*R.L. Smith (1986), Extreme value theory based on the r largest annual events. *J. Hydrology* **86**, 27-43.
*R.L. Smith (1986), Maximum likelihood estimation for the NEAR(2) model. *J.R. Statist. Soc. B* **48**, 251-257.
*C.M. Goldie and R.L. Smith (1987), Slow variation with remainder: Theory and applications. *Quart. J. Math. Oxford (2)* **38**, 45-71.
*C.M. Goldie and R.L. Smith (1987), On the denominators in Sylvester's series. *Proc. Lond. Math. Soc.* **54**, 445-476.
*R.L. Smith and J.C. Naylor (1987), A comparison of maximum likelihood and Bayesian estimators for the three-parameter Weibull distribution. *Applied Statistics* **36**, 358-369.
*R.L. Smith (1987), Estimating tails of probability distributions. *Ann. Statist.* **15**, 1174-1207.
R.L. Smith and J.C. Naylor (1987), Statistics of the three-parameter Weibull distribution. *Annals of Operations Research* **9**, 577-587.
*R.L. Smith and I. Weissman (1987), Large deviations of tail estimators based on the Pareto approximation. *J. Appl. Probab.* **24**, 619-630.
*R.L. Smith and M. Corbett (1987), Measuring marathon courses: an application of statistical calibration theory. *Applied Statistics* **36**, 283-295.
R.L. Smith (1987), Statistical models for composite materials. *Proceedings of the First World Congress of the Bernoulli Society*, edited by Yu. A. Prokorov and V.V. Sazonov. VNU Science Press, Utrecht, Vol.2, 471-483.
*M.J. Bader, M.J. Pitkethly and R.L. Smith (1987), Probabilistic models for hybrid composites. *Proceedings of the Sixth International Conference on Composite Materials*, edited by F.L. Matthews, N.C.R. Buskell, J.M. Hodgkinson and J. Morton, Vol.5, 481-495.
*P. Hall and R.L. Smith (1988), The kernel method for unfolding sphere size distributions. *J. Comput. Phys.* **74**, 409-421.
*R.L. Smith (1988), Forecasting records by maximum likelihood. *J. Amer. Statist. Assoc.* **83**, 331-338.
*R.L. Smith (1988), A counterexample concerning the extremal index. Letter to the editor, *Adv. Appl. Prob.* **20**, 681-683.
*R.L. Smith (1988), Extreme value theory for dependent sequences via the Stein-Chen method of Poisson approximation. *Stoch. Proc. Appl.* **30**, 317-328.
*S.L. Phoenix, D. Farquhar, F.M. Mutrelle and R.L. Smith (1989), Lifetime statistics for single graphite fibers in creep-rupture. *J. Mater. Sci.* **24**, 2151-2164.
*L.C. Wolstenholme and R.L. Smith (1989), Statistical inference about stress concentrations in fibre-matrix composites. *J. Mater. Sci.* **24**, 1559-1569.
R.L. Smith (1989), Gringorten's formula. In *Encyclopedia of Statistical Sciences*, edited by N.L. Johnson and S. Kotz, Supplementary Volume. Wiley, New York, 69-70.
R.L. Smith (1989), A survey of nonregular problems. *Proc. 47th Session ISI* Book 3, 353-372.
*R.L. Smith (1989), Extreme value analysis of environmental time series: An application to trend detection in ground-level ozone (with discussion). *Statistical Science* **4**, 367-393.
*R.L. Smith, J.A. Tawn and H.-K. Yuen (1990), Statistics of multivariate extremes. *International Statistical Review* **58**, 47-58.
*A.C. Davison and R.L. Smith (1990), Models for exceedances over high thresholds (with discussion). *J.R. Statist. Soc.* **52**, 393-442.
R.L. Smith (1990), Extreme value theory. Chapter 14 of *Handbook of Applicable Mathematics Supplement*, edited by W. Ledermann, E. Lloyd, S. Vajda and C. Alexander. John Wiley, Chichester, 437-472.
*A.C. Atkinson, L.R. Pericchi and R.L. Smith (1991), Grouped likelihood for the shifted power transformation. *J.R. Statist. Soc. B.* **53**, 473-482.
*R.L. Smith (1991), Weibull regression models for reliability data. *Reliability Engineering and System Safety* **34**, 55-77.
*R.L. Smith (1991), Optimal estimation of fractal dimension. In *Nonlinear Modeling and Forecasting*, SFI Studies in the Sciences of Complexity, Proc. Vol. XII, Edited by M. Casdagli and S. Eubank, Addison-Wesley.
R.L. Smith (1992), Introduction to Gnedenko (1943), "Sur la distribution limite du terme maximum...". In *Breakthroughs in Statistics I: Foundations and Basic Theory*, edited by S. Kotz and N.L. Johnson, Springer Verlag, New York, 185-194.
*H. Joe, R.L. Smith and I. Weissman (1992), Bivariate threshold methods for extremes. *J.R. Statist. Soc. B.* **54**, 171-183.
*R.L. Smith (1992), Estimating dimension in noisy chaotic time series. *J.R. Statist. Soc. B.* **54**, 329-351.

*R.L. Smith (1992), The extremal index for a Markov chain. *J. Applied Probability* **29**, 37-45.
R.L. Smith (1992), The relation between Statistics and Chaos: Comment on papers by Chatterjee and Yilmaz and by Berliner, *Statistical Science* **7**, 109-113.
N.D. Singpurwalla and R.L. Smith (1992), A conversation with Boris Vladimirovich Gnedenko. *Statistical Science* **7**, 273-283.
R.L. Smith (1992), Comment on paper by J. Beran. *Statistical Science* **7**, 422-425.
R.L. Smith (1993), Long-range dependence and global warming. In *Statistics for the Environment*, edited by V. Barnett and F. Turkman, John Wiley, Chichester, 141-161.
*R.L. Smith (1993), Statistics research for the next ten years. *Statistics and Computing* **3**, 205-208.
*R.L. Smith and I. Weissman (1994), Estimating the extremal index. *J.R. Statist. Soc. B* **56**, 515-128.
*R.L. Smith (1994), Nonregular regression. *Biometrika* **81**, 173-183.
R.L. Smith (1994), Multivariate threshold methods. In *Extreme Value Theory and Applications*, edited by J. Galambos, J. Lechner and E. Simiu. Kluwer Academic Publishers, Dordrecht, 225-248.
R.L. Smith (1994), Spatial modelling of rainfall data. In *Statistics for the Environment 2: Water Related Issues*, edited by V. Barnett and F. Turkman, John Wiley, Chichester, 19-42.
*S. Coles, J. Tawn and R.L. Smith (1994), A seasonal Markov model for extremely low temperatures. *Environmetrics* **5**, 221-239.
*R.L. Smith and T.S. Shively (1995), A point process approach to modeling trends in tropospheric ozone. *Atmospheric Environment* **29**, 3489-3499.
*R. Lund, H. Hurd, P. Bloomfield and R.L. Smith (1995), Climatological time series with periodic correlation. *Journal of Climate* **8**, 2787-2809.
R.L. Smith (1995), Likelihood and modified likelihood estimation for distributions with unknown endpoints. In *Recent Advances in Reliability and Life Testing*, edited by N. Balakrishnan, CRC Press, Boca Raton, 455-474.
*C.-Y. Hui, S.L. Phoenix, M. Ibnabdeljalil and R.L. Smith (1995), An exact closed form solution for fragmentation of Weibull fibers in a single filament composite with applications to fiber-reinforced ceramics. *J. Mech. Phys. Solids* **43**, 1551-1585.
R.L. Smith and P.J. Robinson (1995), A Bayesian approach to modelling spatial-temporal precipitation data. *Proceedings of the Sixth International Meeting on Statistical Climatology, Galway, Ireland.*
R.L. Smith and F.-L. Chen (1996), Regression in long-memory time series. In *Athens Conference on Applied Probability and Time Series, Volume II: Time Series Analysis in Memory of E.J. Hannan*, edited by P.M. Robinson and M. Rosenblatt, Springer Lecture Notes in Statistics **115**, 378-391.
*R.L. Smith and P.J. Robinson (1997), A Bayesian approach to the modelling of spatial-temporal precipitation data. In *Case Studies in Bayesian Statistics III*, edited by C. Gatsonis et al., Lecture Notes in Statistics 121, Springer Verlag, New York, 237-264.
*R.L. Smith (1997), Statistics for exceptional athletics records. Letter to the Editor, *Applied Statistics* **46**, 123-127.
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MANUSCRIPTS IN PREPARATION

R.L. Smith (2009), A transformed, thresholded Gaussian model for precipitation extremes (tentative title). Shortly to be submitted.

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Stanford University
PhD, Economics (with minor in Engineering-Economic Systems), 1984

Stanford University
MA, Economics, 1981

Duke University
BA Economics, *summa cum laude*, 1977
Phi Beta Kappa

Professional Experience

	NERA Economic Consulting
Current	Managing Director and Co-Head of Global Environmental Group
	Charles River Associates
1998-2011	Vice President and leader of the Climate & Sustainability Group
	Decision Focus Incorporated (later DFI-Aeronomics)
1984-1998	Principal, Vice President, and leader of the Environmental Policy Practice; Member of DFI Board of Directors from 1997-1998.
	SRI International
1981-1982	Research Analyst in Decision Analysis Group
	U.S. Environmental Protection Agency
1977-1979	Economist in Economic Analysis Division of the Office of Policy Planning and Evaluation

Committee Experience and Professional Awards

Best Paper Award for 2016, from *Risk Analysis* (the professional journal of the Society for Risk Analysis), for the paper "Inconsistencies in Risk Analyses for Ambient Air Pollutant Regulations," *Risk Analysis*, September 2016, pp. 1737-1744.

Director on Board of Directors, Society for Benefit-Cost Analysis, 2013-2014.

Panel of Experts on "Lessons Learned from the European Union's Emissions Trading Scheme and the Kyoto Protocol's Clean Development Mechanism," U.S. General Accountability Office, 2008. (Report: GAO-09-151, released November 2008).

Congressionally Mandated Committee on Management of Certain Radioactive Waste Streams Stored in Tanks at Three Department of Energy Sites, National Academy of Sciences, 2005-2006.

Committee on Risk-Based Approaches for Transuranic and High-Level Radioactive Waste, National Academy of Sciences, 2003–2005.

Committee on the Characterization of Remote-Handled Transuranic Waste for the Waste Isolation Pilot Plant, National Academy of Sciences, 2001–2002.

Programmatic Review of EPA's $PM_{2.5}$ Research Program, Subcommittee on Risk Management, Board of Scientific Counselors, U.S. Environmental Protection Agency, 1999.

Technical Expert to Committee on Idaho National Engineering and Environmental Laboratory High-Level Waste Alternative Treatments, Board on Radioactive Waste Management, National Academy of Sciences, 1998.

Committee to Evaluate Science, Engineering, and Health Basis of DOE's Environmental Management Program, Subcommittee on Priority Setting, Timing and Staging, National Academy of Sciences, 1995–2002.

Panel on DOE's Environmental Restoration Priority-setting System, National Academy of Sciences, 1992–1993.

Dialogue on Global Climate Change and National Energy Policy, Keystone Foundation, Keystone, CO, 1989–1990.

Best Paper Award, Canadian Trucking Association Annual Conference, 1988.

Working Group on Assessment of the Impact of Pollutants on the Marine Environment, Group of Experts on Scientific Aspects of Marine Pollution (GESAMP), United Nations, Bangkok, Thailand, 1984.

Working Group on Biological Aspects of Thermal Pollution of the Marine Environment, GESAMP, United Nations, Rome, Italy, 1983.

Ad-hoc Committee on Cost-Benefit Analysis, United Nations Economic Commission for Europe, Geneva, Switzerland, 1982.

Publications

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"Cap and Trade, Market Regulation, and Economic Factors in Climate Change." *Global Climate Change Law and Regulations: Planning for a Carbon-Constrained Regulatory Environment*, a Rocky Mountains Minerals Law Foundation Special Institute, New Orleans, LA, January 22-23, 2015.

"An Evaluation of the Robustness of the Visual Air Quality 'Preference Study' Method," *Journal of the Air and Waste Management Association*, Vol. 63(4), April, 2013, pp. 405-417.

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"R&D Policy," (with W. David Montgomery and Lee Lane), Chapter 1.5 in *A Taxing Debate: Climate Policy Beyond Copenhagen*, Ian Marsh (ed.), Growth No. 61, CEDA – the Committee of Economic Development of Australia, August 2009

"Macroeconomic Analysis of American Clean Energy and Security Act of 2009," (with Robert Baron, Scott Bloomberg and others), *USAEE Dialogue*, Vol. 17(2), August 2009, pp. 12-16.

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"A Statement on the Appropriate Role for Research and Development in Climate Policy," (with Kenneth J. Arrow, Linda R. Cohen and others), *Economists' Voice*, February 2009, pp. 1-4.

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"Methods and Results from a New Survey of Values for Eastern Regional Haze Improvements," (with Michael A. Kemp, Timothy H. Savage, and Catherine L. Taylor), *Journal of the Air and Waste Management Association*, Vol. 55, November 2005, pp. 1767-1779.

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"An Empirical Mechanistic Framework for Heat Related Illness," (with Nathan Chan, Mark Stacey, and others), *Climate Research*, Vol. 16, January 2001, pp. 133–143.

"Global Climate Change and the Precautionary Principle," (with W. David Montgomery), *Human and Ecological Risk Assessment*, Vol. 6, No. 3, 2000, pp. 399–412.

"Analysis of the Reduction of Carbon Emissions through Tradable Permits or Technology Standards in a CGE Framework," (with E. Balistreri, P. Bernstein, and others), *AERE/Harvard Workshop on Market-Based Instruments for Environmental Protection*, Cambridge, MA, July 18–20, 1999.

"An Integrated Assessment Framework for Climate Change and Infectious Diseases," (with N. Chan, K. Ebi, and others), *Environmental Health Perspectives*, Vol. 107, No. 5, May 1999.

"Preserving Flexibility in the Kyoto Protocol." *Journal of the Forum for Environmental Law, Science, Engineering, and Finance*, August 1998.

"Making Appropriate Comparisons of Estimated and Actual Costs of SO_2 Emissions Reductions under Title IV," Paper 98-TP49.01, *Air and Waste Management Association Conference*, San Diego, CA (June 14–18, 1998).

"The Costs of Reducing Utility SO_2 Emissions—Not As Low As You Might Think," (with Jeremy Platt and Denny Ellerman), Massachusetts Institute of Technology, Center for Energy and Environmental Policy Research, WP-98010, August 1998; a shorter version of the paper was published in *Public Utilities Fortnightly*, May 15, 1998.

"Statistical Shell Game," *EEI's Electric Perspectives*, May-June 1997, pp. 38–52.

"The Real Particulate Matter Culprit: EPA's Flawed Assumptions," Commentary, *Inside EPA's Risk Policy Report*, Vol. 3, No. 2, February 21, 1997, pp. 35–38.

"The GCVTC Integrated Assessment: Putting All the Science Together." Paper 96-TP46.04, *Air and Waste Management Association Conference*, Nashville, TN, June 23–28, 1996.

"Energy Modeling with Environmental Constraints." *Nuclear Energy in the 21st Century—An Environmental Bonus?* Proceedings of the International Conference of the British Nuclear Energy Society, Bath, U.K., April 14–15, 1994.

"Integrated Environmental/Energy Policy Analysis for the U.K," (with Stephen M. Haas), *Global Climate Change: Science, Policy, and Mitigation Strategies*, C.Mathai and G. Stensland, eds., Air and Waste Management Association, 1994.

"A Multi-Attribute Approach to Choosing Adaptation Strategies," (with H. Quan Chu), *Global Climate Change: Science, Policy, and Mitigation Strategies*, C.V. Mathai and G. Stensland (eds.), Air and Waste Management Association, 1994.

"The Effect of Daytime Running Lights on Crashes between Two Vehicles in Saskatchewan: A Study of a Government Fleet," (with G. Sparks, R. Neudorf, and others), *Accident Analysis and Prevention*, Vol. 25, No. 5, 1993, pp. 619–625.

"Issues in Implementing Tradable Allowances for Greenhouse Gas Emissions." Paper 91–169.4, *Proceedings of the Air & Waste Management Association Conference*, Vancouver, BC, June 1991.

"Environmental Policy Assessment in the 1990s," (with J. D. Scheraga), *Forum for Social Economics*, Autumn 1990.

"A Probabilistic Model for Assessing Damages of Acid Deposition to Painted Surfaces." *Acid Rain: Scientific and Technical Advances*, Selper Ltd., London, 1987.

"TANKS: A Software Tool for Managing the Risks of Underground Storage Tanks." *Managing Environmental Risks*, Air Pollution Control Association, Washington, D.C., 1987.

Development of Decision Analysis Methodology for Health Risk Assessment – An Illustrative Application to Alternative Air Quality Standards for Carbon Monoxide, (with P. McNamee and M. W. Merkhofer). SRI International Report prepared for U.S. Environmental Protection Agency under Contract 68-02-3575, 1983.

"The Costs and Benefits of Sulphur Oxide Control," (with R. Barnes and G. Parkinson), *Journal of the Air Pollution Control Association*, 1983.

Examples of Relevant Consulting Projects

Benefit-Cost and Environmental Risk Studies

Virginia Department of Environmental Quality—Under subcontract to the Virginia Polytechnic Institute, prepared an assessment of the $PM_{2.5}$ and ozone co-benefits in EPA's regulatory impact analysis of the proposed Clean Power Plan. Analysis was mandated by a Joint Resolution of the Virginia legislature

Texas Commission on Environmental Quality—Written comments on the benefit and cost comparisons of the proposed Clean Power Plan, with re-evaluation of the way in which costs and benefits were presented in the regulatory impact analysis. Included assessment of the timing of the benefits associated with the social cost of carbon (SCC).

Utility Air Regulatory Group—Prepared a white paper describing the multiple sources of uncertainty when estimating the SCC, and describing the extent to which the Federal Government's SCC values have addressed those uncertainties. Submitted to OMB on the Federal government's SCC values with UARG's comments.

American Petroleum Institute—Prepared a study reviewing the theoretical and empirical bases for the "damage functions" in climate change integrated assessment models used to derive estimates of the social cost of carbon (SCC). Submitted to OMB docket on the Federal government's SCC values with API's comments.

EPRI—Managed the design and implementation of a full-scale contingent valuation survey to estimate willingness to pay (WTP) for improvement in regional haze conditions in scenic vistas in the Eastern U.S. The survey explored the sensitivity of stated willingness to pay to different questionnaire formats. Results were found to be sensitive to alternative ways of reminding respondents of their personal budgets.

Southern Appalachian Mountains Initiative—Led a team of expert economists and sociologists to advise SAMI's multi-stakeholder group on the state of the art in valuing changes in air quality-related values, and provided guidance for SAMI to plan a comprehensive socioeconomic impact assessment of alternative emissions management options for the southeastern region of the United States. Valuation techniques covered included ecosystem-related changes, visibility, recreation, health, materials, agro-forestry, lifestyle changes, and reliability. Also provided guidance on options and techniques for assessing economic impacts and distributional impacts.

Grand Canyon Visibility Transport Commission—Led the development of the GCVTC's integrated assessment model, its associated database of emissions control measures, and projected baseline of visibility conditions in the southwestern region of the United States; also applied a 15-region REMI model of the western United States to assess the macroeconomic impacts of alternative visibility management strategies generated through use of the integrated assessment system.

U.S. Department of Energy—Served on a large, multi-company team to produce a DOE Report to Congress assessing the occupational safety and health risks to public and workers from legacy wastes across the U.S. nuclear weapons complex. Led the team's data review for the Fernald facility.

U.S. Environmental Protection Agency—Documentation of integrated assessment model, the Policy Evaluation Framework (PEF), and evaluation of alternative climate policy timing strategies using PEF.

Electric Power Research Institute—Developed and applied tools for evaluating risks and cleanup options for contaminated sites, including PCBs, manufactured gas plant wastes, chemical spills, and tank leaks. Included full scale risk analysis tools, and a site screening and prioritization system patterned after the EPA's CERCLA Hazard Ranking System, but with modifications considered appropriate to better map scores to actual site risk.

Nuclear Electric, plc, U.K.—Reviewed and critiqued existing and on-going efforts to value the externalities of different electricity fuel cycles. Prepared a research plan in this area for the client to address data gaps in valuing environmental externalities of power.

Electric Power Research Institute—Review of literature on infectious disease risks from changing climate and development of plan for integrated assessment framework to address the risk.

Electric Power Research Institute—Developed model of heat-related illness risks and mitigation risk management.

Electric Power Research Institute—Participated in a group of experts advancing the state of knowledge regarding appropriate ways of estimating societal value associated with ecosystem impacts of global climate change.

U.S. Environmental Protection Agency—Interdisciplinary review and critique of considerations for valuing ecosystem-related impacts of climate change.

National Acid Precipitation Assessment Program—Managed Integrated Assessment of the NAPAP program, coordinating analysis activities of researchers in emissions, atmospheric modeling, and effects assessment. Prepared materials impacts assessment sections of IA.

Electric Power Research Institute—Developed analysis tool for assessing and managing risks of leaks from underground storage tanks and piping. Analyses produced to support comments on alternative EPA regulatory options addressing leaking underground storage tanks. Tool also applied to assist power companies make tank management decisions.

Stanford University—Developed laboratory worker protocol for air toxics health risk management plan, including statistical design for ambient monitoring program.

Epidemiological and Other Health Risk Analyses

Electric Power Research Institute (EPRI)—Prepared review and weight-of-evidence summary of relative risks from all published epidemiological papers on chronic, long-term exposure mortality risk in the U.S. from ambient $PM_{2.5}$. Reviewed how EPA's BenMAP model can be enhanced to serve better function as a risk analysis support tool. Evaluated BenMAP-based calculations of $PM_{2.5}$ NAAQS benefits in context of EPA rationale for NAAQS decision, and provided quantitative estimates with greater internal consistency. Demonstrated method for conducting quantitative uncertainty analysis of BenMAP-based risk estimates. Developed historical review of use of uncertainty analysis in $PM_{2.5}$ risk analyses by EPA. Results, with quantitative sensitivity analyses, reported in a suite of peer-reviewed articles in the journal of the Society for Risk Analysis.

Texas Commission on Environmental Quality—Using original individual response data from clinical studies of lung function responses to ozone exposure, re-estimated the exposure-response function used in EPA's ozone health risk analysis to explore uncertainty about model specification in EPA's risk estimates under alternative ozone NAAQS levels.

American Petroleum Institute—Developed probabilistic simulation method to quantify statistical uncertainty around EPA's point estimates of frequency of lung function decrements to the general population under alternative ozone NAAQS levels. Submitted to EPA's docket on the proposed ozone NAAQS with API's comments.

Utility Air Regulatory Group—Review and technical critiques of EPA's risk analyses for ozone health effects associated with the 2014-2015 ozone NAAQS rulemaking proceedings, including sensitivity analyses of EPA's health impacts estimates using the BenMAP model. Demonstrated quantitative unreliability of EPA's estimates of respiratory mortality from long-term exposure to ambient ozone, given evidence of effects threshold in the original epidemiological analysis.

Texas Commission on Environmental Quality—Served on steering committee for a major public workshop hosted by TCEQ to engage a group of nationally-recognized science, legal, and policy experts in a discussion of the nexus between scientific evidence and policy judgment for the 2015 ozone NAAQS decision.

Utility Air Regulatory Group—Performed a review of environmental benefits estimates for all major EPA air-related rulemakings since 1997, and of EPA's regulatory impact analysis practices dating back to the 1980s that identified the emergence and expansion of EPA's reliance on $PM_{2.5}$ co-benefits in non-PM rulemakings, such as ozone. Prepared a report identifying areas for improvement in EPA's regulatory impact analyses and for improving the credibility of EPA's $PM_{2.5}$ health risk calculations.

Utility Air Regulatory Group—Reviewed and technically critiqued health effects literature for ambient $PM_{2.5}$, with focus on potential errors in the statistical inferences being used as the basis for risk and benefits estimates associated with the proposed PM NAAQS. Supported UARG with expert testimony on risks in public hearings and before the EPA Science Advisory

Committee (CASAC). Also made technical presentations to senior EPA staff in a non-public setting on risk assessment methodology.

U.S. Environmental Protection Agency—Performed risk assessment of the health effects of ambient carbon monoxide, using physiological modeling and decision analysis, in support of the National Ambient Air Quality Standards-setting process.

Energy-Environmental Modeling and Economic Impact Analyses

American Coalition for Clean Coal Electricity—Co-led integrated modeling analyses of the costs, electricity sector impacts, and fuel price impacts of EPA's proposed and final Clean Power Plans, including state specific electricity rate impacts.

[Confidential Power Sector Company]—Assessed the implications for company-wide cost of service under alternative implementations of the Clean Power Plan (CPP), in several states where company operates.

National Association of Manufacturers—Co-led project to estimate costs of compliance with a tightened ozone NAAQS, and applied an integrated model of the U.S. electricity sector and macroeconomy to estimate the resulting economic impacts of the compliance spending. Results projected for each U.S. state individually.

U.S. Chamber of Commerce—Written report on methods for estimating and characterizing employment impacts of regulations, with a review and evaluation of methods used by EPA. Report recommended use of integrated economy-wide modeling, leading to a 2015-2016 review of the issue by an EPA Science Advisory Board panel on economy-wide modeling.

National Association of Manufacturers—Led development of method for using an integrated model of the U.S. energy economy to assess macroeconomic impacts of Federal debt levels under two carbon tax policies whose revenues would be used for both debt reduction and income tax rate reductions. Work involved adaption of the N_{ew}ERA computable general equilibrium model to account for impact of debt level on interest rates. Estimated the national, regional, and state economic impacts of the carbon tax policies.

American Coalition for Clean Coal Electricity—Prepared an analysis of the macroeconomic impacts of the combined compliance costs of four regulations affecting the U.S. electric generating sector: the Cross-State Air Pollution Rule (CSAPR), the proposed utility MACT rule, the proposed Section 316(b) cooling water intake rule, and the anticipated coal ash handling rule.

Several clients—From 2003-2009, analyzed the costs and economic impacts of most of the climate bills being proposed to cap U.S. greenhouse gas emissions using a model that integrated a detailed electricity sector model with a computable general equilibrium model of the rest of the economy, MRN-NEEM. Analyses have included estimates of impacts to society at large, and to value of assets owned by individual companies. Also projected carbon allowance prices and demand for carbon credits/offsets.

Edison Electric Institute, EPRI, other industry organizations, and private corporations—Developed an integrated modeling framework for assessing costs and economic impacts of multi-pollutant emissions trading policies in the U.S. Framework incorporates a bottom-up, unit-level model of U.S. electricity sector with a top-down macroeconomic model of the U.S. economy at large. Submitted formal comments on cost and impact analyses of the Clean Air Mercury Rule (CAMR), and the Clean Air Interstate Rule (CAIR).

U.S. Environmental Protection Agency—Developed engineering-based model (GEMINI-US) integrating environmental and energy-economy feedbacks, for use in evaluating a range of regulatory options to control greenhouse gases; this effort involved a detailed analysis of energy subsidy impacts.

Nuclear Electric, plc, U.K.—Led development of Gemini-UK model of UK greenhouse gas emissions and greenhouse gas control options. Used model to assess value of future nuclear generation in achieving UK carbon dioxide emission targets.

Uncertainty and Risk Management

[Confidential Utility]—Decision analysis to support financial and electricity rate risk management at a utility considering alternative resource plans involving major asset investments.

[Confidential Power Sector Company]—Reviewed reasonableness of a financial risk rating methodology for utility companies facing the proposed CPP.

Ameren Missouri—Developed a probabilistic method for the company's integrated resource plan of 2008. Worked with stakeholders to incorporate their comments and issues; wrote requests for approval of approach to the Missouri Public Service Commission; conducted expert elicitations of Ameren subject matter experts; and applied an integrated model of the U.S. to generate inputs of future market conditions for the probabilistic set of scenarios that became the foundation of the company's final IRP analysis. Was engaged to also support the company's 2011 IRP, using the same technical approach that was developed for 2008.

[Confidential private equity firm]—For an equity firm considering a fund investing in carbon offsets, characterized the range of alternative US carbon policy outcomes and the associated financial risks of the investment.

[Confidential Diversified Energy Company]—Assessed the sensitivity of profitability to potential climate policy of the individual business operations across the varied operations of a large diversified energy company. This effort enabled an integrated and internally-consistent view of overall corporate risks and opportunities associated with potential future carbon policy.

Southern Company—Supported senior executives of the company in the planning and development of its May 2005 report to shareholders on business risk management in face of climate policy. Activities included the modeling of climate policy scenarios, integration of results into internal corporate analyses, and participation in presentations to the board of directors.

[Confidential Power Companies]—Developed real options analysis for developing corporate emissions trading compliance strategies, accounting for regulatory and market uncertainties. An application to NO_x identified ways to reduce company's compliance costs by over $60 million.

Petro-Canada—Prepared a company-wide assessment of the firm's business strategy and recommended adjustments in light of potential new developments in air quality and climate change policy. Developed real-options analyses for specific asset development projects that were presented to the firm's CEO and executive team.

Cooperative Research Network of National Rural Electric Cooperative Association—Prepared report explaining business opportunities and strategies for cooperative utilities as participants in upcoming NO_x emissions trading programs.

U.S. Department of Agriculture, Food Safety and Inspection Service. Worked closely with USDA staff to develop a risk ranking system to support a risk-based procedure for allocating Department resources for sampling for contaminants across the entire US food supply.

Testimony in Regulatory and Judicial Proceedings

Court and Hearings Boards

Expert witness on environmental cost of carbon dioxide emissions before the Office of Administrative Hearings for the Minnesota Public Utilities Commission in the Matter of the Further Investigation into Environmental and Socioeconomic Costs Under Minnesota Statute § 216B.2422, Subdivision 3. MPUC Docket No. E-999/CI-14-643. Direct testimony and expert report filed June 1, 2015; rebuttal testimony filed August 12, 2015; surrebuttal testimony filed September 10, 2015; cross-examination at hearing September 25, 2015; testimony before Commissioners, July 21, 2017.

Expert witness on job and employment impact analysis methods in Murray Energy Corporation *et al.* v. Gina McCarthy, Case No. 5:14-cv-00039 (N.D.W.Va.) Written report filed April 25, 2016; deposition testimony June 3, 2016; summary judgment in favor of client October 17, 2016.

Expert witness on present value of economic benefits to a company from delayed compliance (using BEN model) in Puget Soundkeeper Alliance v. Rainier Petroleum Corporation, Case No. 2:14-cv-00829-JLR, U.S. District Court for the Western District of Washington at Seattle. Written rebuttal report filed August 17, 2015; case settled before trial.

Expert witness on economic incentives associated with opacity exceedances and alleged PM violations in Sierra Club v. Energy Future Holdings Corp. et al., Case No. 6:12-cv-108 (W.D.Tex.), U.S. District Court for the Western District of Texas, Waco Division. Written expert report filed June 13, 2013; declaration filed October 10, 2013; trial February 24-26, 2014.

Expert witness on economic incentives associated with opacity exceedances in Sierra Club v. Energy Future Holdings Corp. et al., Case No. 5:10-cv-156 (E.D.Tex.), U.S. District Court for the Eastern District of Texas, Texarkana Division. Written expert report filed May 21, 2013; rebuttal report filed June 20, 2013; case settled before trial.

Expert witness on emissions-related health effects estimates in United States of America v. Westvaco Corporation, Civil Action No. MJG 00-CV-2602, U.S. District Court for the District of Maryland. Written expert report filed February 21, 2012; deposition March 22, 2012; trial testimony January 17, 2013.

Expert witness on cost to utilities and associated state macroeconomic and state revenue impacts of sectoral carbon limits, State of New Mexico Environment Improvement Board, EIB 11-16(R), in the matter of Proposed Repeal of Regulation 20.2.100 NMAC – "Greenhouse Gas Reduction Program." Written expert report filed October 7, 2011; testimony and cross examination December 13, 2011.

Expert witness on cost to utilities and associated state macroeconomic and state revenue impacts of multi-state GHG cap-and-trade policy, State of New Mexico Environment Improvement Board, EIB 11-15(R), in the matter of Proposed Repeal of Regulation 20.2.350 NMAC – "Greenhouse Gas Cap and Trade Provisions." Written expert report filed September 15, 2011; testimony and cross examination November 8, 2011.

Expert witness in international arbitration on business damages under the auspices of the Permanent Court of Arbitration, Case No. 2009-18. Expert report on markets for Kyoto Protocol compliance instruments filed June 29, 2010; expert report on business damages and discount rates filed December 8, 2010; cross examination on September 2, 2011.

Expert witness on present value of economic benefits to a company from delayed compliance (using BEN model) in PennEnvironment and Sierra Club v. GenOn Northeast Management Company, Civil Action No. 07-00475, U.S. District Court for Western District of Pennsylvania. Expert report finalized May 6, 2011, but not filed due to settlement of case.

Expert witness on costs and risks, Public Utilities Commission of the State of Colorado, Docket No. 10M-245E, in the matter of the Commission consideration of Public Service Company of Colorado Plan in compliance with House Bill 10-1365, "Clean Air – Clean Jobs Act." Written answer testimony filed September 17, 2010; written cross-answer testimony filed October 8, 2010; written supplemental answer testimony filed November 9, 2010; written supplemental cross-answer testimony filed November 15, 2010. Cross-examinations on October 28, 2010 and November 19, 2010.

Expert witness on cost and economic impacts, State of New Mexico Environment Improvement Board, EIB 10-04(R), in the matter of Proposed Regulation 20.2.350 NMAC – "Greenhouse Gas Cap and Trade Provisions." Written expert report filed August 16, 2010; testimony and cross examination September 29, 2010.

Expert witness on cost-benefit analysis in State of North Carolina *ex. rel*. Roy Cooper, Attorney General (Plaintiff) v. Tennessee Valley Authority (Defendant), Case No. 1:06-CV-20, U.S. District Court for the Western District of North Carolina, Asheville Division. Written expert report filed February 27, 2007; deposition June 19, 2007; testified July 29, 2008.

Expert witness on behalf of Ameren on compliance costs and emissions impact of an alternative emissions control approach to the proposed mercury control policy for the State of Illinois, (in the matter of proposed new Ill. Adm. Code 225, *Illinois Pollution Control Board Hearings on the matter of Control of Emissions from Large Combustion Sources (Mercury)*). Written testimony filed July 28, 2006; cross examination at IPCB hearings on August 14-17, 2006 (Chicago IL).

Expert witness on estimating economic benefits of visibility improvements, *State of Washington Pollution Control Hearings Board*, expert report filed December 1998 (summary judgment in favor of client before testimony occurred).

Congressional Hearings

"EPA's Final Clean Power Plan" *U.S. House of Representatives Committee on Science, Space, and Technology*, November 18, 2015.

"Impacts of U.S. Environmental Protection Agency Regulations" *U.S. House of Representatives Committee on Oversight and Government Reform*, February 26, 2015.

"Discussion Draft of 'Energy Consumers Relief Act of 2013' " *U.S. House of Representatives Committee on Energy and Commerce, Subcommittee on Energy and Power*, April 12, 2013.

"The American Energy Initiative – A Focus on EPA's New Proposal to Tighten National Standards for Fine Particulate Matter in the Ambient Air" *U.S. House of Representatives Committee on Energy and Commerce, Subcommittee on Energy and Power*, June 28, 2012.

"The American Energy Initiative – A Focus on What EPA's Utility MACT Rule Will Cost U.S. Consumers" *U.S. House of Representatives Committee on Energy and Commerce and Subcommittee on Energy and Power*, February 8, 2012.

"Innovative Practices to Create Jobs and Reduce Pollution" *U.S. Senate Committee on Environment and Public Works, Subcommittee on Green Jobs and the New Economy*, October 13, 2011.

"Quality Science for Quality Air" *U.S. House of Representatives Committee on Science, Space, and Technology, Subcommittee on Energy and the Environment*, October 4, 2011.

"Auctioning under Cap and Trade: Design, Participation and Distribution of Revenues" *U.S. Senate Committee on Finance*, May 7, 2009.

"Legislative Hearing Regarding the American Clean Energy and Security Act" *U.S. House of Representatives Committee on Energy and Commerce and Subcommittee on Energy and Environment*, April 24, 2009.

"Economic Impacts of Florida Executive Order 07-127" before Florida Energy Commission (November 19, 2007), and at hearings held by House and Senate Committees of the Florida State Legislature (both on December 12, 2007).

"America's Climate Security Act of 2007, S.2191" *Legislative Hearing of the Senate Committee on Environment and Public Works*, November 8, 2007.

"Counting the Change: Accounting for the Fiscal Impacts of Controlling Carbon Emissions" *House Committee on the Budget*, November 1, 2007.

"Lessons Learned from Existing Cap and Trade Programs" *House Committee on Energy and Commerce, Subcommittee on Energy and Air Quality*, March 29, 2007.

"Energy Market and Economic Impacts of a Proposal to Reduce Greenhouse Gas Intensity with a Cap and Trade System," *U.S. Senate Committee on Energy and Natural Resources*, January 24, 2007.

"Science and Risk Assessment behind the EPA's Proposed Revisions to the Particulate Matter Air Quality Standards," *U.S. Senate Environment and Public Works Committee*, July 19, 2006.

"Economic Impacts of Various Proposals to Reduce Domestic Greenhouse Gas Emissions," *U.S. Senate Committee on Energy and Natural Resources*, September 20, 2005.

"The Proposed Regional Haze Regulation and its Relationship to the Work of the Grand Canyon Visibility Transport Commission," *U.S. Senate Committee on Energy and Natural Resources, Subcommittee on Forests and Public Land Management*, October 1997.

"Scientific Foundations for U.S. EPA's Proposed New National Ambient Air Quality Standard for $PM_{2.5}$," *U.S. Senate Committee on Environment and Public Works, Subcommittee on Clean Air, Wetlands, Private Property, and Nuclear Safety*, February 1997.

Memberships in Professional Societies

Air and Waste Management Association (AWMA)
Association of Environmental and Resource Economists (AERE)
Institute for Operations Research and the Management Sciences (INFORMS)
International Association for Energy Economics (IAEE)
Society for Benefit-Cost Analysis (SBCA)
Society for Risk Analysis (SRA)
United States Association for Energy Economics (USAEE)

Curriculum Vitae

NAME: Eric Peter Smith

EDUCATION:

1975	B.S., University of Georgia, Department of Mathematics
1982	M.S., University of Washington, Biomathematics Group
1982	Ph.D., University of Washington, Biomathematics Group

Dissertation Title: The Statistical Properties of Biological Indices of Water Quality. Advisor: Gerald van Belle

PROFESSIONAL EXPERIENCE:

2014 – present Director, Computational Modeling and Data Analytics program, Virginia Polytechnic Institute and State University

2007 – present Department Head, Department of Statistics, Virginia Polytechnic Institute and State University

1992 – present **Full Professor**, Department of Statistics, Virginia Polytechnic Institute and State University

1995 – 2004 **Director**, Statistical Consulting Center, Virginia Polytechnic Institute and State University

1987 – 1992 **Associate Professor**, Department of Statistics, Virginia Polytechnic Institute and State University

1988 **Faculty Research Participant**, Oak Ridge National Laboratory

1989 **Visiting Research Fellow**, University of Kent, Canterbury

1982 – 1987 **Assistant Professor**, Department of Statistics, Virginia Polytechnic Institute and State University

1978 – 1982 **Research Associate**, Biomathematics Group, University of Washington

1977 – 1978 **Teaching Assistant**, University of Georgia and University of Washington

PROFESSIONAL SOCIETIES:

American Statistical Association

HONORS AND AWARDS:

Elected member of the International Statistics Institute (member through 2011)
Fellow of the American Statistical Association
Distinguished Achievement Award from the American Statistical Association (Section on Environmental Statistics)

PUBLICATIONS:

Refereed Journals

Smith, E. P. and T.M. Zaret. 1982. Bias in estimating niche overlap. ***Ecology 63***, 1248-1253.

Smith, E. P. 1982. Niche breadth, resource availability and statistical inference. ***Ecology 63,*** 1675-1681.

Smith, E. P. and Gerald van Belle. 1984. Nonparametric estimation of species richness. ***Biometrics 40***, 119-129.

Moore, W.E.C., L. V.Holdeman, E.P. Cato, IJ. Good, E.P. Smith, R.R. Ranney and J. Burmeister. 1984. Variation in peridontal floras. ***Infection and Immunity 46***, 720-726.

Smith, E. P., P.M. Stewart and J. Cairns, Jr. 1985. Similarities between rarefaction methods. ***Hydrobiologia 120***, 167-170.

Smith, E.P. 1985. Statistical comparison of weighted overlap measures. ***Transactions of the American Fisheries Society 114***, 250-257.

Smith, E.P. 1985. Estimating the reliability of diet overlap measures. ***Environmental Biology of Fishes 13***, 125-138.

Good, I.J. and E.P. Smith. 1985. The variance and covariance of a generalized index of similarity especially for a generalization of an index of Hellinger and Bhattacharya. ***Communications in Statistics 14***, 3053-3061.

Bell, C.B., F. Ramirez and E.P. Smith. 1985. Aplicacion de modelos de Wiener-Levy a datos biomedicos. ***Trabajados in Estatistica 36***, 3-26.

Stewart, P.M., E.P. Smith, D. Pratt, P.V. McCormick and J.J. Cairns. 1986. Multivariate analysis of protist communities in lentic systems. ***Journal of Protozoology 33***, 152-156.

Good, I.J. and E.P. Smith. 1986. An additive algorithm related to the singular decomposition; or a comparison of polarization, and multiplicative models. ***Communications in Statistics: Simulation and Computation 15***, 545-570.

Bell, C.B. and E.P. Smith. 1986. Inference for nonnegative autoregressive schemes. ***Communications in Statistics: Simulation and Computation 15***, 2267-2294.

Smith, E.P., R. Genter and J. Cairns Jr. 1986. Confidence intervals for the similarity between algal communities. ***Hydrobiologia 139***, 237-247.

Genter, R., D. Cherry, E.P. Smith and J. Cairns, Jr. 1987. Algal periphyton population and community changes from zinc stress in stream mesocosms. ***Hydrobiologia 153,*** 261-275.

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Genter, R.B., D. S. Cherry, E.P. Smith and J. Cairns, Jr. 1988. Attached-algal abundance altered by individual and combined treatments of zinc and pH. ***Environmental Toxicology and Chemistry 7***, 723-733.

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Niederlehner, B. R., John Cairns, Jr., and E. P. Smith. 1998 Modeling acute and chronic toxicity of nonpolar narcotic chemicals and mixtures to *Ceriodaphnia dubia*, ***Ecotoxicology and Environmental Safety*** **39,** 136-146.

Rose, Kenneth A., Eric P. Smith. 1998. Statistical assessment of model goodness-of-fit using permutation tests. ***Ecological Modelling*** **106**, 129-139.

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Pavel, E.W., A. Lopez, D.F. Berry, E.P. Smith, , R. B. Reneau Jr., and S. Mostaghimi. 1999. Anaerobic degradation of dicamba and metribuzin in riparian wetland soils. ***Water Research*** **33(1),** 87-94.

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Bell, C.B. F. Ramirez, and E.P. Smith. 1983. Aplicacion de modelos de Wiener-Levy a datos biomedicos. Technical Report 1-83, San Diego State University, Department of Mathematics.

Cairns, J. Jr., P.V. McCormick, and E.P. Smith. 1991. Response of protistan communities to the surfactant C12-TMAC (dodecyl trimethyl ammonium chloride) in laboratory streams. Research Report to: Proctor and Gamble Corporation.

Rheem, Sungsue and E.P. Smith. 1992. A class of multivariate nonparametric tests for monotone trend with environmental applications. Technical Report No. 92-10, Department of Statistics, Virginia Tech.

See, K. and E.P. Smith. 1992. Diagnosing models for three-way data arrays using joint plots. Technical Report No. 92-9, Department of Statistics, Virginia Tech.

Cairns, J. Jr., P.V. McCormick, M. Arnegard, and E.P. Smith. 1993. Measuring Variation in Ecosystem Sensitivity to Stress. Grant AFOSR-91-0379.

Shabman, Leonard A., Hershner, Carl, Kator, Howard I., Smith, Eric P., Smock, Leonard A., Younos, Tamim, Yu, Shaw L., Zipper, Carl E. 1998. Report of the Water Quality Academic Advisory Committee. VWRRC Special Report No. SR8-1998.

FAEIS NEWSLETTERS (JULY 2011 - MAY 2012) Comparing Age for Faculty in Different Academic Areas, May 15, 2012,Hightower, L., M.A. Marchant, W.W. Richardson, E. Vance, E. Smith, T. Mack, M. Albanese, C. Cadden, M. Paquette, & A.Sharma. (http://www.faeis.ahnrit.vt.edu/newsletter/may_12/FAEIS_newsletter_may2012.pdf)

Comparing Gender for Students and Faculty in Animal Science Fields, April 18, 2012, Hightower, L., K. Griffin, M.A.Marchant, W.W. Richardson, E. Vance, E. Smith, T. Mack, M. Albanese, C. Cadden, M. Paquette, & A.Sharma. (http://www.faeis.ahnrit.vt.edu/newsletter/april_12/faeis_newsletter_april_2012.pdf)

The Undergraduate Enrollment Trends for Agricultural and Applied Economics, March 1, 2012, Hightower, L., K. Griffin, M.A.Marchant, W.W. Richardson, E. Vance, E. Smith, T. Mack, M. Albanese, C. Cadden, M. Paquette, & A. Sharma. (http://www.faeis.ahnrit.vt.edu/newsletter/march_12/faeis_newsletter_march2012.pdf)

Food Safety: A USDA-NIFA Societal Challenge Area, February 2, 2012, Hightower, L., K. Griffin, M.A. Marchant, W.W.Richardson, E. Vance, E. Smith, T. Mack, M. Albanese, C. Cadden, M. Paquette, & A. Sharma. (http://www.faeis.ahnrit.vt.edu/newsletter/february_12/Feb2012newsletter.pdf)

Childhood Obesity Prevention: A USDA-NIFA Societal Challenge Area, December 7, 2011, Hightower, L., K. Griffin, M.A.Marchant, W.W. Richardson, E. Vance, E. Smith, T. Mack, M. Albanese, C. Cadden, M. Paquette, & A. Sharma.(http://www.faeis.ahnrit.vt.edu/newsletter/dec_11/FAEIS_newsletter12_11.pdf)

FAEIS Update, November 9, 2011, Hightower, L., K. Griffin, M.A. Marchant, W.W. Richardson, E. Vance, E. Smith, T. Mack, M. Albanese, C. Cadden, M. Paquette, & A. Sharma.(http://www.faeis.ahnrit.vt.edu/newsletter/november_11/newsletter_nov11.html)

Climate Change: A USDA-NIFA Societal Challenge Area, October 11, 2011, Hightower, L., K. Griffin, M.A. Marchant, W.W.Richardson, E. Vance, E. Smith, T. Mack, M. Albanese, & A. Sharma. (http://www.faeis.ahnrit.vt.edu/newsletter/october_11/FAEIS_newsletter10_1_11.pdf).

Fallon, J.A., E.P. Smith and W.A. Hopkins. (2012) Determining physiological injury to birds exposed to oil from the Deepwater Horizon (Mississippi Canyon 252) spill. Report prepared for the US Fish and Wildlife Service.

GRANTS:

Co-investigator, Probability estimation NIH Grant #GM18770 (I.J. Good, principal investigator). 1983-1988.

Travel Grant with Oak Ridge Associate Universities, #S-3286, 1989-1992.

Principal investigator, Modeling the toxicity of a complex mixture before discharge #89-0246-08. Westinghouse Savannah River Company (with John Cairns, Jr. and Raymond H. Myers). 1989-1990. ($29,247).

Principal investigator, An environmental and statistical review of data and data analysis from the Pennsylvania Power and Light Co. #90-0575-10 (with John Cairns, Jr. and Dave Orvos), 1989-1990. ($7,500)

Principal investigator, Predicting the effect detergent chemicals on aquatic ecosystems using laboratory protozoan communities. Proctor and Gamble, #90-4360-71 (with John Cairns, Jr. and Paul McCormick), 1990. ($15,000)

Principal investigator, Predicting the effect of detergent chemicals on aquatic ecosystems using laboratory protozoan communities. Proctor and Gamble #90-4360-71 (with John Cairns, Jr. and Paul McCormick), 1991. ($18,474)

Principal investigator, Statistical procedures to detect and analyze long-term water quality trends. #91-1027-12 (with Golde I Holtzman, G. Evanylo and C. Zipper), 7/1/91-6/30/92. Virginia Water Control Board. ($22,423)

Principal investigator, Evaluation of Riparian wetlands as naturally occurring decontamination sites. U.S. Department of Agriculture (with D. Berry, R. Reneau, R. Young, and S. Mostaghimi), #92-1111-01. 1992-1993 ($200,000)

Principal investigator, Dentrification potential of nontidal wetland soils (with D. Berry, R.B. Reneau, Jr., and S. Mostaghimi), Water Resources Research Center. 1993-1994. ($56,313)

Principal investigator, Studies of benthic macroivertebrates and fish in streams with EPA region III for development of biological indicators of ecological conditions, (with Reese Voshell), USEPA, #93-1350-02. 1993-1994 ($43,506)

Principal investigator, Analyzing long-term ecological monitoring data to determine benthic macroinvertebrate community responses to stream acidification in Shenandoah National Park, Shenandoah National Park, #92-1790-04 1992. ($8,266)

Co-investigator, Mathematical Sciences Computing Research Environment. SCREMS Program, National Science Foundation (with K. Hinkelmann, P. Palettas, G. Terrell, C. Coakley, and K.Ye). 1993. ($98,448)

Co-investigator, Chronic toxicity of complex mixtures: development of efficient design and analysis of predictive errors, Air Force Grant #430563 (with J. Cairns, Jr., R. Myers, and B.R. Nederlehner). 1994-1995. ($199, 848)

Principal investigator, 7th International Environmetrics Conference with D. Brillinger, USEPA. 1996. ($10,000)

Principal investigator, Analysis of long term ecological monitoring of the New River Gorge, National Park Service. 1996. ($24,000)

Principal investigator, Evaluation of methods for standards assessment Funding to the Statistical Consulting Center from the Water Resources Center, ($5000) 1998.

College of Arts and Sciences Millennium Grant, ($8000), 1999.

Principal investigator (with K. Ye), Assessing multiple stressors over large geographic areas. USEPA/NSF ($266,478) 1999-2002.

Principal investigator, Empirical models for diagnosing causes of stress using biological assessment data. ($63,900) USEPA 1999-2001.

Co-investigator (with Keying Ye) Statistical analyses in water resource monitoring. ($19,406) Virginia Water Resources Research Center 2001-2002.

Principal investigator: with (Samantha Bates, Saied Mostaghimi, Gene Yagow, Kevin Brannan, Donald Orth, Jim Berkson) Model-based Clustering for Classification of Aquatic Systems and Diagnosis of Ecological Stress, USEPA STAR grant (10/1/2003– 9/30/2006 $844,310)

Co-PI (with S. Prisley, L. Carstensen, Jr. and K. Ye. Application of spatial uncertainty models to automate and enhance data fusion. National Geospatial Intelligence Agency. (8/1/05-7/31/08 $449,643).

Principal Investigator (with Penelope Pooler). 2006. Cooperation And Collaboration On Vital Signs Monitoring Program Of The Northeast Coastal And Barrier Network And Eastern Rivers And Mountain Network Of The National Park Service. National Park Service $112,017 (100% to statistics).

Principal Investigator (with Dan Spitzner). 2006. Prioritization of watersheds for eastern brook trout restoration. U.S. Geological Survey. $28,750.

Principal Investigator, 2006-7. Ecological thresholds and structured decision analysis using aquatic macroinvertebrate as indicators of stream health in the mid Atlantic Highlands. US Geological Survey $30,000.

Y. Jiao,D. Orth, and E.P. Smith MARFIN two-year proposal 08MF004(RF) "Model complexity and stock assessment quality: an investigation of the performance of models of different complexity and implications for model selection in fisheries" (year 1 $90,999, year 2 $111,566,total of $202,565).

D. Kim and EP Smith USFS and James Madison University #10-2330-04, 10/15/10-10/14/15, 5% commitment. Ranking Brook Trout Habitats in West Virginia and Maryland to Resiliency to Climate Change, $50,011.

R. Murch and others, BAE Systems, #09-1679-02, 6/13/10-5/13/11. 7.6% commitment. Biometrics Training, Performance and Research Initiative (BTPRI). $242,311

E. Smith, D. Kim, USFS #11-0122-07, 8/30/10 – 9/30/13. 11% commitment. Development and assessment of tools for evaluating stream community responses to global climate change along thermal gradients. $50,032.

M. Marchant, T. Mack and E.P. Smith, Improvement and Marketing of the Food and Agricultural Education Information System (FAEIS) $285,000 USDA (2010-2012).

E.P. Smith US Forest Service. GWJ Macroinvertebrate and Air Pollution. 8/2010-7/2013 $60,000.

E.P. Smith, Office of Naval Research: Data analytics for large acoustic array datasets. 5/2014-12/2014, $44,281. (with W. Devenport, L. House, S. Leman)

PH.D. DISSERTATIONS DIRECTED:

Ruey-Pyng Lu. 1986. Multivariate nichemetrics.

Laura L. Bauer. 1987. Hypothesis testing procedures for non-nested regression models.

Brian D. Marx. 1988. Ill-conditioned information matrices and the generalized linear model: an asympototically biased estimation approach.

Donald E. Mercante. 1990. Analysis of multispecies microcosm experiments.

Barbara R. Kuzmak. 1990. An examination of outliers and interaction in a nonreplicated two-way table.

Sungsue Rheem. 1992. A class of multivariate nonparametric tests for monotone trend with environmental applications.

Kyoungah See. 1993. Three-mode principal component analysis in designed experiments.

Matthew Rotelli. 1996. Neural networks as a tool for statistical modeling.

Angie McMahan. 1997. Design of experiments under measurement error.

Michael Beaghan. 1997. Canonical correlation and related methods over three modes.

David Wang. 1998. Zero heavy data.

Patrick Darken. 1999. Testing for changes in trend in water quality data.

Robert Noble. 2001. Multivariate applications of Bayesian Model Averaging.

Ilya Lipkovich. 2002. Bayesian model averaging and variable selection in multivariate ecological models.

Yuyan Duan. 2005 (co-chair with Keying Ye) A modified Bayesian power prior approach with applications in water quality evaluation

Penelope Pooler. 2005. Bayesian hierarchical methods and use of ecological thresholds and changepoints for habitat selection models.

Huizi Zhang. 2006. Classification analysis for environmental monitoring: Combining information across multiple studies.

David Farrar. 2006. Some model based and distance based clustering methods for characterization of regional ecological stressor-response patterns and regional environmental quality trends.

Zhengrong Li. 2006. Model-based tests for standards evaluation and biological assessment.

Feng Gao, 2007. Clustering response-stressor relationships in ecological studies.

Jonathan Duggins, 2010. Parametric resampling methods for retrospective changepoint analysis.

Han Li, 2014 (co-chair with Xinwei Deng). Statistical Modeling and Analysis of Bivariate Spatial-Temporal Data with the Application to Stream Temperature Study

PROFESSIONAL PRESENTATIONS:

1. Niche breadth, resource availability and statistical inference. Biometric Society (WNAR) meetings, June 19-21, 1982, San Diego, California.
2. Nonparametric estimation of diet overlap. Biometric Society (ENAR) meetings, March 20-23, 1983, Nashville, Tennessee.
3. An additive algorithm related to the singular decomposition; or a comparison of multiplicative and additive algorithms. Meetings of the American Statistical Association. August 13-16, 1984, Philadelphia, Pennsylvania.
4. Similarity analysis. Virginia Academy of Science meetings, Williamsburg, Virginia, May 1985.
5. The analysis of diet similarity. Ecological Society of America meetings, Minneapolis, Minnesota, June 17-21, 1985.
6. Similarity analysis. Department of Statisitcs colloquium, October 3, 1985.
7. Randomized similarity analysis of multispecies laboratory and field experiments. Workshop on the Statistical aspect of water quality monitoring, Burlington, Ontario, October 7-10, 1985.
8. Analysis of designed multispecies experiments using similarity measures. NSF/CBMS Conference on Mathematical Stochastics of Species Abundance and Community Composition, Stillwater, Oklahoma, March 17-21, 1986.
9. Mean similarity and the analysis of designed experiments. International Biometrics Conference, Seattle, Washington, July 27 – August 1, 1986.
10. On the use of mean similarity for testing hypotheses about ecological change and similarity. 38th Annual AIBS Meeting and the meeting of the Ecological Society of America, Columbus, Ohio, August 9 – 13, 1987.

11. Some multivariate measures of niche overlap and their statistical properties. Poster presented at 38th Annual AIBS Meeting and the meeting of the Ecological Society of America, Columbus, Ohio, August 9 – 13, 1987.
12. Developing a statistical support system for environmental hazard evaluation. Invited talk with John Cairns, Jr., presented at Environmetrics 87, Washington, D.C., November 15 – 18, 1987.
13. A PROC IML macro for testing non-nested regression models. With L.L. Bauer, and Oral Capps, Jr. Proceedings of the Thirteenth Annual SAS users group international conference, Orlando, Florida, March 27 – 31, 1988.
14. Variable selection in multivariate multiresponse permutation procedures. The Symposium on the Interface: Computing Science and Statistics. Washington, D.C., April 21- 23, 1988.
15. Developing a statistical support system for environmental hazard evaluation. Presented at the Summer Computer Simulation Conference, July 1988.
16. Statistical issues in the design and analysis of multispecies microcosm and mesocosm experiments. First Biennial Conference on Microbial Aspects of Water Quality, Banff, Canada. September 1988.
17. But we always measure all these variables. East Tennessee Chapter of the American Statistical Association meeting and University of Tennessee colloquia. November 17, 1988. Also presented to the multivariate study group of the Royal Statistical Society, May 9, 1989, as a colloquium for the statistics group at the University of Kent, March 10, 1989, and as an invited talk for the Grenygog Statistics Conference, Grenygog, Wales, on April 20, 1989.
18. Ill-conditioned information matrices, the generalized linear model and the effects of acid rain. First International Conference on Environmetrics, Cairo, Egypt, April 5, 1989, and as a colloquium for the statistics group of the University of Kent, March 30, 1989. Also presented August 31, 1989, to the Statistics Department at Virginia Tech.
19. The importance of processes in the estimation and testing for trends in water quality. First International Conference on Environmetrics, Cairo, Egypt, April 6, 1989.
20. Selection of factors affecting the presence of fish in Aidrondack lakes: a case study (with J. Beauchamp and S. Christensen). Presented at the International Conference on Environmetrics, Como, Italy, September 25 – October 2, 1990.
21. Some comments and criticisms of the before-after control-impact model for impact assessment (with D. Orvos and J. Cairns, Jr.). Presented at the meetings of the Society of Environmental Toxicology and Chemistry, Washington, D.C., November 12 – 15, 1990.
22. The statistical validity of biomonitoring data (with J. Cairns, Jr.). Presented at the Workshop on Biological Monitoring of Freshwater Ecosystems, Purdue University, November 29 – December 1, 1990.
23. Some comments and criticisms of the before-after control-impact model for impact assessment. Presented at the ASA Winter Meetings, New Orleans, January 3, 1991.
24. Multicollinearity in generalized linear models. Statistics Faculty Research Seminar, Virginia Commonwealth University, Richmond, Virginia, March 29, 1991.
25. Some new approaches to the assessment of ecological impact. Third International Conference on Environmetrics, Madison, Wisconsin, October 5 – 10, 1991.
26. Mixture models for environment impact assessment. Invited talk at the Meeting of the Biometric Society (ENAR), Cincinnati, Ohio, March 23 – 25, 1992.
27. Multivariate assessment of trend in environmental variables. Invited talk at the Seventh International Conference on Multivariate Analysis, Penn State, May 5 – 9, 1992.
28. Extrapolation methods for setting ecological standards for water quality: statistical and ecological concerns. Fourth International Conference on Statistical Methods for the Environmental Sciences, Helsinki University of Technology, Otaniemi, Espoo, Finland, August 17 – 21, 1992.
29. Multivariate assessment of trend in environmental variables. Fourth International Conference on Statistical Methods for the Environmental Sciences, Helsinki University of Technology, Otaniemi, Espoo, Finland, August 17 – 21, 1992.

30. Randomization tests for multivariate hypotheses. Invited talk. North American Benthological Society, Calgary, Canada, May 23 – 28, 1993.
31. Model diagnostics for three factor models. Nineteenth Annual SAS User's Group International Conference, Dallas, Texas, April 10 – 13, 1994.
32. Assessment of status and trends using ecological data. Presented at Mid Atlantic Highlands Area Environmental Monitoring and Assessment Conference, Hershey, PA, February 23 – 25, 1994.
33. Model diagnostics for three factor models. Nineteenth Annual SAS User's Group International, Cary, NC, March 11 – 14, 1994.
34. Randomization methods for assessing multivariate hypotheses. Invited talk. Environmetrics 94, Burlington, Ontario, August 11 – 15, 1994.
35. Neural nets for designed experiments. Poster session at the ASA meetings (with Matt Rotelli), August 1996.
36. Graphical display of metrics for assessing environmental change. Seventh International Conference on Quantitative Methods in Environmental Science, Sao Paulo, Brazil, August 1996.
37. Uncertainty in ecological and environmental risk analyses. Department of Statistics Colloquium. November 7, 1996.
38. Quantitative uncertainty analysis. Invited presentation at a special shortcourse on uncertainty analysis in ecological risk assessment. November 1996.
39. A preliminary multimetric index for streams of the Mid-Atlantic Highlands (with Reese Voshell). Mid-Atlantic Water Pollution Workshop. March 1997.
41. Uncertainty in ecological and environmental risk analysis. Miami University Colloquium. September 22, 1997.
42. Analysis of repeated measures. Department of Horticulture Colloquium. October, 1997.
43. Analysis of zero heavy toxicity data. SETAC 97 (Nov.) SETAC. San Francisco. (Poster).
44. Development of Tick Threat Assessment Maps for U.S. military Installations. 2nd Force Health Protection Conference –USACHPPM, Atlanta, GA. August 1999. (with Ken Stein)
45. Development of Tick Threat Assessment Maps for U.S. Military Installations. Eighth Annual ITAM (Integrated Training Area Workshop) Camp Ripley, Minnesota. August 1999. (Poster with Ken Stein)
46. Standards Assessment Meetings of the American Statistical Association. 1999
47. Evaluating Change in Trend Using Modified Kendall's Tau Meetings of the International Environmetric Society, 1999.
48. What to Do With All That Missing Data? SETAC 99 (Nov).
49. Relating Environmental Stressors and Responses Using Bayesian Model Averaging 11th International Environmetric Conference, Sheffield, England (September, 2000)
50. Logistic Modeling of Sediment Toxicity Annual Sediment Advisory Group Meeting, Minneapolis (September, 2000).
51. Regional assessment of environmental data Environmetric Society, Genoa Italy, June 16-23, 2003
52. Bayesian model averaging for canonical correspondence analysis. Environmetric Society, Genoa Italy, June 16-23, 2003
53. Standards, Monitoring, and Detection Joint Statistical Meetings, San Francisco08/06/03,
54. Modeling sediment toxicity using logistic regression SETAC meetings, Austin, TX, November, 2003.
55. Evaluation of Standards Data from Probabilistic Monitoring Programs EMAP meeting, Newport, RI (May, 2004).
56. Model-based clustering of stressor-response relationships NABS, Vancouver, (June, 2004)
57. Model based clustering of stressor-response relationships. Presented at the Fifth Winemiller Symposium, October 2004.
58. Bayesian Logistic Modeling in the Classification Analysis of Water Quality Eric. P. Smith, Keying Ye, and Huizi Zhang Joint Statistical Meetings (August, 2004).

59. Clustering Stressor-Response Relationships, How do we know if the water quality is bad? Two invited talks at the 34th Annual Mathematics and Statistics Conference, Sept 29-30, Miami University.

REFEREEING for JOURNALS:

1. ***Ecology***
2. ***Biometrics***
3. ***Technometrics***
4. ***Journal of Wildlife Management***
5. ***Environmental Biology of Fishes***
6. ***Canadian Journal of Fisheries and Aquatic Sciences***
7. ***American Society for Testing and Materials (ASTM)***
8. ***Environmental Management***
9. ***National Academy of Sciences***
10. ***North American Benthological Society***
11. ***Statistical Computation and Simulation***
12. ***Water Resources Research***
13. ***SETAC Special Publication Series***
14. ***Water Environment Federation***
15. ***Journal of Environmental Statistics***
16. ***Transactions of the American Fisheries Society***
17. ***Journal of the American Statistical Association***
18. ***Environmental Toxicology and Chemistry***

PROPOSAL REFEREEING FOR:

1. National Geographic Society
2. United States Geological Survey (USGS)
3. MONTS (Montana)
4. National Science Foundation
5. Natural Sciences & Engineering Research Council of Canada

PROFESSIONAL ACTIVITIES:

Panel Discussant: Frontiers of Statistical Ecology. Held at the meetings of the Ecological Society of America, August 10 – 16, 1986 at Syracuse, New York.

Member, Ad Hoc Committee to establish a statistics section of the Ecological Society of America, 1986.

Member, Scientific Committee, Second through Tenth International Environmetrics Conferences.

Elected Publications Chair of the Environmental Section of the American Statistical Association, 1993.

Discussion Leader, National Research Council Workshop on Ecological Risk Assessment, February 26 – March 1, 1991, Warrenton, Virginia.

Discussant, US Geological Survey workshop on biological monitoring of rivers, March 31 – April 2, 1992.

Associate Editor***, Environmental Management***, 2012 to present.

Associate Editor, ***Environmetrics***, 1989 to 2011.

Associate Editor, ***Journal of Agricultural, Biological and Environmental Stats***, 1994 to 2004.

Associate Editor, ***Journal of the American Statistical Association***, Applications and Case Studies, 1998 to 2003.

Editorial Collaborator, ***Ecological and Environmental Statistics***, 1996 to present.

Secretary, The International Environmetrics Society, 1994 to 2000.

Session Chair, 1986, 1996, 2003 ASA meetings, 1996, SETAC 1992-1999 TIES

Co-organizer, Bayesian Statistics in Environmental Studies 1996 ASA meetings.

Developed and presented short course Multivariate Methods in Ecotoxicology, November 1998, SETAC meeting, Uncertainty Analysis (with Dwyane Moore, Bill Warren-Hicks), November 1997, 1998

Editor, Special Issue of JABES. Monitoring Over Space and Time. 1999 (with Tony Olson).

Environmental Statistics Section of the American Statistical Association (chair elect 2001, chair 2002, past chair 2003), Presentation award committee (2004).

Section editor for the Natural Resources section for the Encyclopedia of Environmetrics.

CONSULTING AND NATIONAL COMMITTEES

Member, Technical Advising Committee, Virginia Water Resources Research Center (1983 – 2006).

Member, National Research Council Committee to review the Department of the Interior's Biomonitoring of Environmental Status and Trends Program (1995).

Member of ASTM Committee E47 on Biological Effects and Environmental Fate and ASTM Subcommittee E47.03 on Sediment Assessment and Toxicology (2002-3).

Reviewer of monitoring programs for the County Sanitation Districts of Los Angeles County (2002).

Consultant for Sidley Austin, LLC (2003-2007).

Reviewer for EPA and WERF on WET testing (2004, 2008)

Reviewer of "Developing Methods to Reduce Bird Mortality in the Altamont Pass Wind Resource Area", prepared by BioResource Consultants for the California Energy Commission (2006)

Deepwater Horizion SEAMAP Surveys Planning Committee Workshop, August 25-25, 2010 (advisory panel on surveys for the Gulf of Mexico).

Panel member for the Scientific Advisory Board reviewing EPA's technical support document*: National-Scale Mercury Risk Assessment Supporting the* 25 *Appropriate and Necessary Finding for Coal and Oil-Fired Electric Generating Units - March* 26 *2011*.

DEPARTMENT AND UNIVERSITY SERVICE:

Interim Department Head 2006-7, Department Head 2007 to present
Director, Computational Modeling and Data Analytics program 2014 to present
Departmental Library Committee, 1982 – 1990
Departmental Curriculum Committee, 1985 – 1987
Departmental Undergraduate Committee, 1986 – 1987
Ad Hoc Organizing Committee for the I.J. Good Symposium, 1987
Computer Users Subcommittee of the University Computing Committee, 1987
Research Committee, 1988 – 1990, 2000-2005
Colloquium Committee, 1989, Head of Committee, 1990
Member, Personnel Committee, 1991 – 1994, 1996 – 1998, 2003-2005 Head of Committee, 1992, 1994, 1998, 2000
Member, Consulting Committee, 1989 – present, Head, 1996 – Present
Computing Committee, Head, 1989-1997, member since 1997
College Personnel Committee, 1992 – 1994
College Research Planning Committee, 1993 – 1994, 1996, 2003
College Nominations Committee 2003-4

Revised/October 2014
Attempts are made to keep this document as updated as possible
however, some information may be missing.

David T. Stevenson

Education:
Rutgers University, New Brunswick, NJ
Bachelor of Science, Agricultural Economics, 1970

Professional Experience:
Member, Presidential EPA Transition Team, Washington, DC, Dec., 2016 to Jan. 2017
After briefing by EPA staff on organization, budget, and key issues I developed 100 and 200 day action plans for three major EPA regulatory areas

Policy Director, Caesar Rodney Institute, Newark, DE, 2010 to present
Wrote research papers on state and national energy and environmental issues and policy, and developed and implemented policy changes designed to protect the environment while removing barriers to economic success

President Alternative Strategy Consulting, LLC, Lewes, DE, 2013 to present
Provided guidance on energy and environmental policy to the Delaware Public Advocate, utilities, and private companies

Chairman of the Board and founder, Save the Persecuted. Lewes, DE, 2015 to present
Assisted 250 persecuted religious minority individuals obtain asylum status and resettlement to safe countries, provided guidance to the U.S State Department on how to reduce persecution in Pakistan

Entrepreneur and President multiple companies, Lewes, DE 1993 to 2010
Founded six successful regional companies in the home service industry, each a leader in its market segment

Various sales, technical, and management positions, DuPont Company, Wilmington, DE, 1970 to 1993
Primarily worked on market expansion and business startups along with one business turn around. Ranked number one in peer rankings at each job level. Started one business that grew to $60 million a year in sales with a 25% net profit in one year with no investment required other than working capital.

Professional Service:
Chairman, Conservation Commission, Southbury, CT
Chairman, Remodelers Council, Dover, DE
Board Member Home Builders Association of Delaware, Dover, DE
Board Member KINFOLK, Dover, DE

8-28-17

Dear Officer Carpenter,

Enclosed is the information you have requested. The backup information was typed and sent previously.

Biosketch: MS Geology, SMU, environmentalist, former energy industry executive. No outside funding. A funder. A background of extensive corporate leadership and a lifetime of environmental activities and recognition for same. Can bring some balance to the many discussions facing the EPA today. A firm believer in the application of the scientific method which has seemed to be lacking in some of the previous administrations. We owe our Administrator all the pertinent empirical evidence that underpins his decisions. Leadership roles in several organizations that also rely on empirical science can help access this information quickly and pass it on to the Science Advisory Board and the Administrator. Currently active on committees with M.D. Anderson Cancer Center, the CO2 Coalition and the ex-NASA Right Climate Stuff team. Was lead author of the NY Times best seller Sugar Busters that led the nutritional industry in 1992 in helping to control weight and Type II diabetes; 4 million copies. A leader in the discovery that hydrocarbons can be detected from earth's surface with geophysical methods and that oil and gas can be produced commercially from extremely tight source shales. Spoke one on one with six secretaries and or EPA Administrators as to how "no net loss" of wetlands could be accomplished; it worked. EPA Region 6 Environmental Excellence Award.

CV: Geologist, MS SMU, strong believer in the scientific method and empirical evidence. Receives no remuneration for research or membership in several research groups.

Supporting information:

Here included are bios on energy industry background and on environmental activities and awards, both pertinent to many of the discussions within the EPA.

H. Leighton Steward

Amy L. Stuart

University of South Florida, 13201 Bruce B. Downs Blvd., MDC-56, Tampa, FL 33612
PHONE: ([redacted] • E-MAIL: als@usf.edu • WEB: www.eng.usf.edu/~als

EDUCATION

Ph.D. in Civil and Environmental Engineering 2002
Stanford University, Stanford, CA

M.S. in Civil Engineering (Environmental Engineering and Science Program) 1997
Stanford University, Stanford, CA

B.S. in Chemical Engineering 1994
Stanford University, Stanford, CA

ACADEMIC AND PROFESSIONAL POSITIONS

Full Professor Aug. 2017 – present
Associate Professor Aug. 2011 – Aug. 2017
Assistant Professor Jan. 2005 – Aug. 2011
Dept. of Environmental & Occupational Health (primary); Chair (EOH): T. Bernard, Ph.D., P.E.
Dept. of Civil & Environmental Engineering (joint); Chair (CEE): M. Gunaratne, Ph.D., P.E.
University of South Florida (USF), Tampa, FL

Associated Faculty, Patel School of Global Sustainability, USF Aug. 2010 – present
Joint Courtesy Faculty, Center for Urban Transportation Research, USF Aug. 2009 – present

Visiting Research Fellow Sept. 2013 – May 2014
School of Population Health; Host: Jane Heyworth, Ph.D.
University of Western Australia, Perth, WA, Australia

Visiting Scientist July 2010
Community Modeling and Analysis System Center; Host: Adel Hanna, Ph.D.
Institute for the Environment, University of North Carolina, Chapel Hill, NC

Assistant Research Scientist and Graduate Faculty Aug. 2003 – Nov. 2004
Dept. of Atmospheric Sciences; Supervisor: John Nielsen-Gammon, Ph.D.
Texas A&M University, College Station, TX

Science Fellow and Postdoctoral Researcher Sept. 2002 – July 2003
Center for International Security and Cooperation, and Dept. of Geological & Environmental Sciences.
Supervisor: Dean Wilkening, Ph.D.
Stanford University, Stanford, CA

Graduate Research Assistant Sept. 1997 – Aug. 2002
Dept. of Civil and Environmental Engineering; Advisor: Mark Z. Jacobson, Ph.D.
Stanford University, Stanford, CA

Visiting Graduate Researcher June – Aug. 1998
Mesoscale and Microscale Meteorology; Advisors: Mary Barth, Ph.D.; William Skamarock, Ph.D.
National Center for Atmospheric Research, Boulder, CO

Associate Environmental Consultant Sept. 1994 – Aug. 1996
Principals: Shari Libicki, Ph.D. and Stan Hayes, Ph.D.
Environ Corporation, Emeryville, CA

Visiting Fellow June – Aug. 1994
Stockholm Environment Institute, Stockholm, Sweden

Undergraduate Research Assistant Sept. 1993 – June 1994
Dept. of Chemical Engineering; Research Advisor: Alice Gast, Ph.D.
Stanford University, Stanford, CA

HONORS AND AWARDS

National Science Foundation CAREER Grant Award	2008
Induction in Delta Omega, Honorary Society in Public Health	2008
Recognition award for research contributions, College of Public Health, USF	2006, 2007
Certificate of Appreciation, Environmental Water Resource Institute	2007
Certificate of Appreciation, Tampa Bay District of the Florida Environmental Health Assoc.	2007
Profiled in the Air and Waste Management Association Tampa Bay Section Newsletter	2007
Profiled in the USF College of Public Health Alumni Newsletter	2007
Certificate of Appreciation, Air & Waste Management Association.	2005
US Environmental Protection Agency STAR Graduate Fellowship	1999-2002
National Science Foundation Graduate Fellowship	1996-1999
Stanford in Government Environmental Fellowship	1994
Outstanding Service Award, Stanford Society of Women Engineers	1994
Stanford Undergraduate Research Fellowship	1993
Cap and Gown Honor Society Member	1993
United States Presidential Scholar	1989
National Merit Scholar	1989

RESEARCH AND SCHOLARSHIP

Book and Book Chapter Publications

Supervised §Postdoctoral scholar; ‡graduate student; †undergraduate student

S Gurram‡, AL Stuart, and AR Pinjari. Tampa, Florida: High resolution simulation of urban travel and network performance for estimating mobile source emissions, in *The Multi-Agent Transport Simulation MATSim.* Eds.: A Horni, K Nagel, and KW Axhausen. London: Ubiquity Press. http://dx.doi.org/10.5334/baw, 2016.

JR Mihelcic and AL Stuart. Air Quality Engineering, in *Environmental Engineering: Fundamentals, Sustainability, Design*. 2nd Ed. Wiley. 2014.

AL Stuart. Volatile chemical partitioning during cloud hydrometeor freezing and its effects on tropospheric chemical distributions. Ph.D. Dissertation, Stanford University. Stanford, California. September 2002.

Refereed Journal Manuscript Publications

*Senior author for work involving supervised students. §Postdoctoral scholar, ‡graduate student, †undergraduate

H Yu‡§, and AL Stuart*. Impacts of compact growth and electric vehicles on future air quality and urban exposures may be mixed. *Science of the Total Environment*, 576: 148 – 158, doi:10.1016/j.scitotenv.2016.10.079, 2017.

JP Tanner‡, JL Salemi, AL Stuart*, H Yu‡§, MM Jordan, C DuClos, P Cavicchia, JA Correia, SM Watkins, and RS Kirby. Uncertainty in maternal exposures to ambient $PM_{2.5}$ and benzene during pregnancy: Sensitivity to exposure estimation decisions. *Spatial and Spatio-temporal Epidemiology* 17: 117 -129, doi:10.1016/j.sste.2016.04.009, 2016.

H Yu‡§, and AL Stuart*. Exposure and inequality for select urban air pollutants in the Tampa Bay area. *Science of the Total Environment* 551-552 (May): 474–83, doi:10.1016/j.scitotenv.2016.01.157, 2016.

R Michael‡§, AL Stuart*, MA Trotz, and F Akiwumi. Source apportionment of wet-deposited atmospheric mercury in Tampa, Florida. *Atmospheric Research* 170 (March): 168–75, doi:10.1016/j.atmosres.2015.11.017, 2016.

M Dirgawati, R Barnes, AJ Wheeler, A Arnold, KA McCaul, AL Stuart, D Blake, A Hinwood, BB Yeap, and JS Heyworth*. 2015. Development of Land Use Regression Models for Predicting Exposure to NO2 and NOx in Metropolitan Perth, Western Australia. *Environmental Modelling & Software* 74 (December): 258–67, doi:10.1016/j.envsoft.2015.07.008, 2015.

N Good, A Mölter, C Ackerson, A Bachand, T Carpenter, ML Clark, KM Fedak, A Kayne, K Koehler, B Moore, C L'Orange§, C Quinn, V Ugave, AL Stuart, JL Peel and J Volckens*. The Fort Collins Commuter Study: Impact of Route Type and Transport Mode on Personal Exposure to Multiple Air Pollutants. *Journal of Exposure Science and Environmental Epidemiology*, 26: 397 - 404, doi:10.1038/jes.2015.68, 2016 (Published online 28 October 2015).

JP Tanner‡, JL Salemi, AL Stuart, H Yu‡§, MM Jordan, C DuClos, P Cavicchia, JA Correia, SM Watkins, and RS Kirby*. Associations Between Exposure to Ambient Benzene and $PM_{2.5}$ During Pregnancy and the Risk of Selected Birth Defects in Offspring. *Environmental Research* 142 (October): 345–53, doi:10.1016/j.envres.2015.07.006, 2015.

S Gurram‡, AL Stuart*, AJ Pinjari. Impacts of travel activity and urbanicity on exposures to ambient oxides of nitrogen and on exposure disparities. *Air Quality, Atmosphere & Health* 8: 97–114, doi: 10.1007/s11869-014-0275-6, 2015.

S Fridh‡ and AL Stuart*. Spatial variation in ambient benzene concentration over a city park. *Journal of Environmental Health*, Jan-Feb, 76(6): 86-91, 2014.

H Yu‡, AL Stuart*. Spatiotemporal distributions of ambient oxides of nitrogen, with implications for exposure inequality and urban design. *J. Air & Waste Management Assoc.*, 63(8): 943-55, doi:10.1080/10962247.2013.800168, 2013.

AE Evans‡ and AL Stuart*. A passive sampling study of small-scale variations in ambient acetaldehyde and formaldehyde concentrations. *Air, Soil, and Water Research*, 4: 71-79, doi: 10.4137/ASWR.S7582, 2011.

AL Stuart* and M Zeager‡. An inequality study of ambient nitrogen dioxide and traffic levels near elementary schools in the Tampa area. *Journal of Environmental Management*, 92:1923-1930, doi:10.1016/j.jenvman.2011.03.003, 2011.

JH Howard‡, MATrotz, KD Thomas‡, E Omisca‡, HT Chiu†, T Halfide‡, F Akiwumi, R Michael‡, AL Stuart. Total mercury loadings in sediment from gold mining and conservation areas in Guyana. *Environmental Monitoring and Assessment*, 179:555-573, doi: 10.1007/s10661-010-1762-3, 2011.

AL Stuart*, S Mudhasakul‡, W Sriwatanapongse. The social distribution of neighborhood-scale air pollution and monitoring protection. *J. Air & Waste Management Assoc.,* 9:591-602, doi:10.3155/1047-3289.59.5.591, 2009.

R Michael‡ and AL Stuart*. The fate of volatile chemicals during wet growth of a hailstone. *Environmental Research Letters*, 4, 015001, doi:10.10188/1748-9326/4/1/015001, 2009.

AL Stuart, A Aksoy, F Zhang, and JW Nielsen-Gammon. Ensemble-based data assimilation and targeted observation of a chemical tracer in a sea breeze model. *Atmospheric Environment*, 41: 3082 – 3094, doi:10.1016/j.atmosenv.2006.11.046, 2007.

MC Barth, W-W Kim, WC Skamarock, AL Stuart, KE Pickering, LE Ott. Simulations of the redistribution of formaldehyde, formic acid, and peroxides in the 10 July, 1996 Stratospheric-Tropospheric Experiment: Radiation, Aerosols, and Ozone deep convection storm, *Journal of Geophysical Research*, 112*,* D13310, doi:10.1029/2006JD008046*,* 2007.

F Zhang, N Bei, JW Nielsen-Gammon, G Li, R Zhang, A Stuart, and A Aksoy. Impacts of meteorological uncertainties on ozone pollution predictability estimated through meteorological and photochemical ensemble forecasts. *Journal of Geophysical Research*, 112, D04304, doi:10.1029/2006JD007429, 2007.

AL Stuart and MZ Jacobson. A numerical model of chemical partitioning during cloud drop freezing. *Journal of Atmospheric Chemistry*, 53: 13-42, doi:10.1007/s10874-006-0948-0, 2006.

AL Stuart and D Wilkening. Degradation of biological weapons agents in the environment: Implications for terrorism response. *Environmental Science & Technology*, 38(8): 2736-2743, doi:10.1021/es048705e, 2005.

AL Stuart and MZ Jacobson. Chemical retention during dry growth riming*. Journal of Geophysical Research*, 109, D07305, doi:10.1029/2003JD004197, 2004.

AL Stuart and MZ Jacobson. A timescale investigation of volatile chemical retention during hydrometeor freezing: Nonrime freezing and dry growth riming without spreading. *Journal of Geophysical Research*, 108(D6), 4178, doi:10.1029/2001JD001408, 2003.

MC Barth, AL Stuart, and WC Skamarock. Numerical simulations of the July 10 Stratospheric-Tropospheric Experiment: Radiation, Aerosols, and Ozone (STERAO) - Deep Convection experiment storm: Redistribution of soluble tracers. *Journal of Geophysical Research*, 106(D12): 12,381-12,400, 2001.

Refereed Conference Proceedings Manuscript Publications

Supervised §Postdoctoral scholar; ‡graduate student; †undergraduate student

R Michael§, AL Stuart, G Dagne. Predicting impacts of commute mode and route on exposures to traffic-related air pollution. Extended Abstract #23. *TRB Summer Conference on Transportation and Air Quality,* Minneapolis, MN. August 4-5, 2016.

S Gurram‡, AL Stuart, AR Pinjari. Impacts of estimated travel activity on air pollution concentrations and human exposures in the Tampa region. Extended Abstract #32. *TRB Summer Conference on Transportation and Air Quality,* Minneapolis, MN. August 4-5, 2016.

R Michael§, AL Stuart, G Dagne, J Volckens, and J Peel. An integrative modeling approach for predicting exposures to traffic pollution during commuting. Extended Abstract #511. *Proceedings of the 108th Air and Waste Management Assoc. Annual Conf. and Exhibition*, Raleigh, NC. June 2015.

R Michael‡§, AL Stuart, MA Trotz, and F Akiwumi. Mercury deposition to the Tampa Bay area: Source influences from the 2012 USF deposition experiment. Extended Abstract #497. *Proceedings of the 108th Air and Waste Management Association Annual Conference and Exhibition*, Raleigh, NC. June 2015.

S Gurram‡, AL Stuart, and AR Pinjari. Estimating human exposures to traffic-related pollution using an integrated transportation and air pollution modeling framework: application to the Tampa region. Extended Abstract #308. *Proceedings of the 108th Air and Waste Management Association Annual Conference and Exhibition*, Raleigh, NC. June 2015.

SC Fridh‡ and AL Stuart. A Spatial Investigation of Highly-Resolved Environmental Benzene Concentrations Using Passive Sampling. Extended Abstract. *Proceedings of the 104th Air and Waste Management Association Annual Conference and Exhibition*. Orlando, FL. June 2011.

H Yu‡, and AL Stuart. The Spatial Distribution of Nitrogen Oxides in Hillsborough County, FL with Implications for the Social Distribution of Exposures. Extended Abstract. *Proceedings of the 104th Air and Waste Management Association Annual Conference and Exhibition*. Orlando, FL. June 2011.

R Michael‡, AL Stuart, MA Trotz, F. Akiwumi. Atmospheric mercury deposition and source attribution for Tampa. Extended Abstract. *Proceedings of the 104th Air and Waste Management Association Annual Conference and Exhibition*. Orlando, FL. June 2011.

AL Stuart, M Zeager‡, N Poor, S Mudhasakul‡, W Sriwatanapongse. Assessing environmental equity related to local air pollution in Tampa, FL. *Proceedings of the 101st Air & Waste Management Association (A&WMA) Annual Conference and Exhibition*. Portland, OR. June 2008.

AL Stuart and MZ Jacobson. Drop-scale numerical modeling of chemical partitioning during cloud hydrometeor freezing. *Proceedings of the 14th International Conf. on Clouds and Precipitation. International Association of Meteorology and Atmospheric Sciences*, 475-478, July 2004.

AL Stuart, MC Barth, WC Skamarock, and MZ Jacobson. Three-dimensional modeling study of the effects of solid-phase hydrometeor-chemical interaction in cumulonimbus clouds on tropospheric chemical distributions. *Proceedings of the 13th International Conference on Clouds and Precipitation. International Association of Meteorology and Atmospheric Sciences*. pp. 932-935. August 2000.

MC Barth, AL Stuart, and WC Skamarock. The influence of cloud processes on the distribution of chemical species for the 10 July 1996 STERAO/Deep Convection storm. *Proceedings of the 13th International Conference on Clouds and Precipitation.* International Association of Meteorology and Atmospheric Sciences. pp. 960-963. August 2000.

AL Stuart, S Jain, and SB Libicki. The use of long-term meteorological information to predict impact

probabilities resulting from toxic chemical releases. *Proceedings of the International Topical Meeting of Probabilistic Safety Assessment, American Nuclear Society*. Park City, UT. October, 1996.

S Hayes, A Stuart, S Pye, L Levin, and J Killus. Assessing exposure to airborne particulate matter. *Proceedings of the 89th Annual Meeting of the Air and Waste Management Association.* June 1996.

Technical Reports (selected)

Supervised §Postdoctoral scholar; ‡graduate student; †undergraduate student

AL Stuart, P-S Lin, C Lee, H Yu‡, H Chen. Assessing Air Quality Impacts of Managed Lanes. Final Report for the State of Florida Department of Transportation. BDK85 TWO #977-11. December 2010. [Available at http://www.nctr.usf.edu/pdf/6402-1041-00.pdf]

SJ Hendricks, E Hillsman, A Foster, A Yassin‡, and A Stuart. Developing a Framework for a Toolkit for Carbon Footprint that Integrates Transit (C-FIT). Final Report for the State of Florida Department of Transportation, 2010.

A Stuart and P Borisuth‡. Preliminary study of mercury deposition to the Tampa Bay: Task 1 Annual report. For the Florida Department of Environmental Protection. Project AQ200. June 12, 2007.

JP Pancras§ and AL Stuart. Laboratory and Field Support of the SEAS Measurements (2006-2007): Task 2 Annual Report. For the Florida Department of Environmental Protection. Project AQ200. June 12, 2007.

A Stuart and F Zhang, J Nielsen-Gammon, and A Aksoy. Meteorological model improvements using the ensemble Kalman filter: Progress report. For the Texas Environmental Research Consortium. Project H24-2003. August 30, 2004.

J Neilsen-Gammon, A Aksoy, and A Stuart. Status report for GTRI/HARC Project No. H24-2004 C2. For the Texas Environmental Research Consortium. Project H24-2003. July 8, 2004.

C Chyba, MF Cuellar, L Donohue, L Eden, M Lynn, M May, E Pate-Cornell, J Pullen, T Putnam, M Race, and A Stuart. Final Report: Top Officials 2 Full Scale Exercise. Center for International Security and Cooperation, Stanford University. June 2003.

T Crites, T Putnam, F Steinhausler, and A Stuart. Report of the delegation from the Center for International Security and Cooperation (CISAC): TOPOFF-2 Planning Meeting for RDD Attack. Stanford University. October 2002.

Scholarly Society Conference Abstracts and Presentations (selected)

Supervised §Postdoctoral scholar; ‡graduate student; †undergraduate student

A Stuart. Air quality design for sustainable and health urban communities. AEESP Research and Education Conference, Ann Arbor, Michigan, June 2017.

S Gurram‡, A Stuart, A Pinjari. Impacts of Estimated Travel Activity on Air Pollutant Concentrations and Human Exposures in the Tampa Region. Active City Conference on Health, Wellness and Urban Design. Hosted by the American Institute of Architects and USF, Tampa, Florida, January 2017.

A Stuart, R Michael§‡, and H Yu§‡. The Ft. Collins Commuter Exposure study: Estimating the impacts of commute route and mode on air pollution exposures. Active City Conference on Health, Wellness and Urban Design. Hosted by the American Institute of Architects and USF, Tampa, Florida, January 2017.

H Yu§‡ and A Stuart. The impact of compact urban growth and electric vehicles on urban air quality. Active City Conference on Health, Wellness and Urban Design. Hosted by the American Institute of Architects and USF, Tampa, Florida, January 2017.

JP Tanner‡, JL Salemi, AL Stuart, H Yu§‡, and RS Kirby. Uncertainty in maternal exposures to ambient $PM_{2.5}$ and benzene during pregnancy: sensitivity to exposure estimation decisions. American Public Health Association Annual Meeting & Exposition, Denver, CO. Oct–Nov 2016.

S Gurram‡, AL Stuart, AR Pinjari. An integrated transportation and air pollution modeling framework for estimating pollution exposures and inequalities: application to the Tampa region. Florida Section A&WMA 52nd Annual Conference, Tampa, FL. October 2016.

AK Marroquin†, R Michael§, AL Stuart. What is the healthiest way to commute? Using a route generator to compare air pollution commute exposures by route and mode. Florida Section A&WMA 52nd

Annual Conference, Tampa, FL. October 2016.

S Gurram‡, AL Stuart, and AR. Pinjari. An integrated transportation and air pollution modeling framework for estimating mobile source emissions and human exposures: Application to the Tampa Region. 14th International Conference on Travel Behaviour Research (IATBR), Windsor, UK. July 2015.

JL Salemi, JP Tanner‡, AL Stuart, H Yu§‡, MM Jordan, C DuClos, P Cavicchi, JA Correia, SM Watkins, RS Kirby. Associations between exposure to ambient benzene and $PM_{2.5}$ during pregnancy and the risk of selected birth defects in offspring. 55th Annual Meeting, The Teratology Society, Montreal, Canada. June 2015.

JP Tanner‡, JL Salemi, H Yu§‡, MM Jordan, C DuClos, P Cavicchi, JA Correia, SM Watkins, RS Kirby, AL Stuart. Sensitivity of air pollution exposure estimates to exposure assessment decisions: maternal exposures to ambient $PM_{2.5}$ and benzene. 55th Annual Meeting, The Teratology Society, Montreal, Canada. June 2015.

AL Stuart. Improving Estimation of Commuter Air Pollution Exposures using Bayesian Markov Chain Monte Carlo Simulation. 2015 AEESP Research and Education Conference, New Haven, CT. June 2015.

S Gurram‡, AL Stuart, and AR Pinjari. An Integrated Transportation and Air Pollution Modeling Framework for Estimating Mobile Source Emissions and Human Exposures: Application to the Tampa Region. Florida Section Air and Waste Management Association Annual Conference and Exhibition, Jacksonville, FL. October 2014.

H Yu‡§, AL Stuart. Impact of Urban Growth Form and Fleet Electrification on Emissions, Concentrations, and Exposures for Nitrogen Oxides and Select Toxic Volatile Organic Compounds. 2014 AAAR Annual Conference Abstracts. AAAR 33rd Annual Conference, Orlando, FL. October 2014.

DL Mendoza§, AL Stuart, G Dagne, H Yu§‡. Effect of emissions uncertainty and variability on high-resolution concentrations of carbon monoxide, fine particle black carbon, and nitrogen oxides in Fort Collins, Colorado: development of a Bayesian uncertainty modeling and evaluation framework. American Geophysical Union Fall Meeting. San Francisco, CA. December 2013.

J Sears‡ (AL Stuart, advisor). Spatial Distribution of Nitrogen Oxides, Benzene, Toluene, Ethylbenzene, and Xylenes in Hillsborough County, Florida: An Investigation of Impacts of Urban Forests on Ambient Concentrations of Air Pollutants Associated with Traffic. Florida Section Air and Waste Management Association Annual Conference and Exhibition, Tallahassee FL. 2013.

DL Mendoza§, AL Stuart, and G Dagne. Probabilistic modeling and Bayesian updating of concentrations of carbon monoxide and fine particulate black carbon in Fort Collins, Colorado for exposure estimation. AAAR 32nd Annual Conference, Sept 30 - Oct 4, 2013.

S Gurram‡, AL Stuart and AR Pinjari. Assessing exposure to traffic-related air pollutants in the Tampa area using activity-based travel demand modeling. 2013 AEESP 50th Anniversary Conference. July 14-16, 2013.

AL Stuart, D Mendoza§, and G Dagne. Development of a commuter exposure modeling system that integrates air pollution dispersion and path-following activity location in a Bayesian framework. 2013 AEESP 50th Anniversary Conference. July 14-16, 2013.

H Yu‡, AL Stuart. Impact of urban growth patterns on air pollution emissions and human exposures. 2013 AEESP 50th Anniversary Conference. July 14-16, 2013.

DL Mendoza§, AL Stuart, and G Dagne. High-resolution emissions and concentrations of carbon monoxide and fine particle black carbon in Fort Collins, Colorado: development of a Bayesian uncertainty modeling and evaluation framework. Abstract A11F-0110. 2012 Fall Meeting, AGU, San Francisco, CA, 3-7 Dec 2012.

AL Stuart. Engaged learning and youth interest in STEM careers: a science museum exhibit on air pollution and urban sustainability. Abstract ED21A-0695. 2012 Fall Meeting, AGU, San Francisco, CA, 3-7 Dec 2012.

R Michael‡, AL Stuart, M Trotz, F Akiwumi. Source attribution of atmospheric mercury deposition to Tampa using positive matrix factorization. APHA Annual Meeting and Exposition, San Francisco, CA. October 2012.

S Gurram‡, AL Stuart, and AR Pinjari. Characterization of exposures to ambient NOx levels in the Tampa area considering spatiotemporal travel activity data. Air & Waste Management Association Annual

Conference & Exposition, San Antonio, TX. June 19-22. 2012.

H Yu‡, AL Stuart. Resolving the intra-urban formaldehyde concentration distribution in the Tampa area. Air & Waste Management Association Annual Conference & Exposition, San Antonio, TX. June 19-22. 2012.

S Fridh‡ and AL Stuart. Spatial variations in ambient benzene concentrations at high resolution. Assoc. of Env. Eng. and Sci. Professors. Education and Research Conference. July 2011.

S Gurram‡, AL Stuart, AR Pinjari. Time-activity patterns and air pollutant exposures using 2009 National Household Travel Survey data. Assoc. of Env. Eng. and Sci. Professors. Education and Research Conference. July 2011.

R Michael‡, AL Stuart, P Borisuth‡, MA Trotz, and F Akiwuma. Source influences on deposited mercury in Tampa. Assoc. of Env. Eng. and Sci. Professors. Education and Research Conference. July 2011.

H Yu‡, AL Stuart, H Chen, PS Lin, C Lee. Impacts of the Miami-Broward I-95 hot lane project on air quality: emission estimation and dispersion modeling using traffic microsimulation data. Assoc. of Env. Eng. and Sci. Professors. Education and Research Conference. July 2011.

AL Stuart, A Evans‡, H Yu‡. Interactions between air pollution, urban design, and environmental equity: a modeling and passive sampling study of intra-urban patterns of traffic-related air pollutants. 138th Annual Meeting of the American Public Health Association, Denver, CO. November 2010.

AE Evans‡ and AL Stuart. An Investigation of Small-scale Spatial Variability in Aldehyde Concentrations through Passive Sampling and Analysis. Air Pollution and Health: Bridging the Gap from Sources to Health Outcomes, an International Specialty Conference of AAAR, San Diego, California. March 2010.

AL Stuart, MA Zeager‡, H Yu‡, and A Evans‡. An Investigation of Intra-urban Patterns of Urban Air Pollution, with Implications for Environmental Exposure Equity and Urban Design. Air Pollution and Health: Bridging the Gap from Sources to Health Outcomes, an International Specialty Conference of AAAR, San Diego, California. March 2010.

H Yu‡ and AL Stuart. Mobile source emissions estimation and dispersion modeling toward high spatial resolution distributions of nitrogen oxides and select urban air toxics. Air Pollution and Health: Bridging the Gap from Sources to Health Outcomes, an International Specialty Conference of AAAR, San Diego, California. March 2010.

A Evans‡ and AL Stuart. Passive sampling for aldehydes in Hillsborough County, Florida. 46th Annual Florida Air and Waste Management Association Conference, October 2009.

H Yu‡ and AL Stuart. Benzene air pollution and environmental equity in the Tampa Area. 46th Annual Florida Air and Waste Management Association Conference. October 2009.

H Yu‡, AL Stuart. Modeling and equity analysis for NOx air pollution in the Tampa Area. Florida Public Health Association 2009 Annual Educational Conference. August 2009.

AL Stuart. Air pollution, equity, and urban growth. Gordon Research Conference on Atmospheric Chemistry, Waterville Valley, New Hampshire. August 2009.

MA Trotz, AL Stuart, and F Akiwumi. Diaspora linkages for building international, interdisciplinary partnerships on sustainability in US graduate education. Association of Environmental Engineering and Science Professors 2009 Conference, Iowa City. July 27, 2009.

MA Zeager‡, AL Stuart. Spatial variation of nitrogen dioxide in Hillsborough County, Florida. Pediatric Academic Societies Annual Meeting, Baltimore, May 2-5, 2009.

TC Halfhide‡, F Akiwumi, M Trotz, A Stuart, J Howard‡, R Michael‡. Mercury perception, community awareness and sustainability implications for the Tampa Bay region, Florida. Proceedings of the Association of American Geographers Annual Meeting. Las Vegas, NV. March 27, 2009.

MA Trotz, JH Howard‡, AL Stuart, F Akiwumi. Mercury sorption to river sediments from the Hillsborough river: Potential impacts from climate change. American Chemical Society 237th National Conference & Exposition, Salt Lake City, UT, March 24, 2009.

JA Howard‡, A Stuart, F Akiwumi, and MA Trotz. Climate change effects on mercury sorption to sediment samples from the Hillsborough river. American Chemical Society 237th National Conference & Exposition, Salt Lake City, UT, March 24, 2009.

AL Stuart, M Trotz, F Akiwumi. An integrated student-centered study of mercury in the economy, society,

and environment of the Tampa Bay area. 136th American Public Health Association Annual Meeting, San Diego, CA October 28, 2008.

R Michael‡, AL Stuart, Investigation of the factors influencing volatile chemical fate during steady-state accretion on wet-growing hail. American Geophysical Union (AGU). Eos Trans. AGU, Fall Meet. Suppl. Abstract A53B-1156, Dec. 2007.

R Michael‡, AL Stuart, Investigation of the factors affecting chemical fate during ice accretion in the wet-growth regime. FL A&WMA 44th Annual Conference. October 2007.

AL Stuart. Localized air pollution and environmental equity in Tampa, Florida. 2007 AEESP Research and Education Conference, Blacksburg, Va., July 2007.

AL Stuart, C Braithwaite†, F Breckner‡. Investigation of air quality related health disparities in Tampa, FL, American Public Health Association Annual Meeting, November 2006.

N Poor, S Calderón‡, C Mizak‡, H Strayer‡, A Stuart. An application of NADP precipitation monitoring: diagnostics for local source contributions to wet deposition of gaseous and particulate nitrogen. Effects of Deposition in Urban and Coastal Environments, National Atmospheric Deposition Program (NADP) 29th Annual Technical Meeting, Norfolk, VA, October 25, 2006.

D Martin‡ and AL Stuart. Aerosolized microorganisms: survivability, infectivity detection and modeling: A literature review. FL A&WMA 43rd Annual Conference, October 2006.

AL Stuart, A Aksoy, JW Nielsen-Gammon, F Zhang. Ensemble Kalman filter data assimilation for improved chemical tracer forecasts in a 2-D sea breeze model. The 86th American Meteorological Society Annual Meeting, January 2006.

AL Stuart, A Aksoy, F Zhang, JW Nielsen-Gammon. Data assimilation and targeted observation of chemical tracer concentrations in a sea breeze model forecast using an ensemble Kalman filter. Eos Trans. AGU, 86(52), Fall Meet. Suppl. Abstract A33F-04, December 2005.

FB Breckner‡ and AL Stuart, Health implications of diesel vehicle emissions in Jakarta. FL A&WMA 42nd Annual Conference, November 2005.

AL Stuart and MZ Jacobson, 2004, Volatile chemical retention during wet-growth riming. Eos. Trans. AGU. Fall Meet. Suppl., December 2004.

AL Stuart and MZ Jacobson. Volatile chemical retention during wet-growth riming. 8th Scientific Conference of the International Global Atmospheric Chemistry Project (IGAC), 2004.

JW Nielsen-Gammon, R Orville, LD Carey, D.R. Collins, A. Stuart, R. Zhang. Invitation to participate in the Houston Environmental Aerosol Thunderstorm Project (HEAT). 5th Symposium on the Urban Environment, American Meteorological Society Annual Meeting, January 2004.

AL Stuart, and M.Z. Jacobson. A theoretical and modeling study of volatile chemical partitioning during cloud hydrometeor freezing. Eos. Trans. AGU, 84(46). Fall Meet. Suppl., Abstract A12F-04. 2003.

AL Stuart, MC Barth, WC Skamarock, and MZ Jacobson. Interactions between chemicals and ice-containing convective cloud hydrometeors and their effects on tropospheric chemical distributions. U.S. EPA STAR Fellowship Conference, Washington D.C. August 2001.

AL Stuart, M.Z. Jacobson, M.C. Barth, and W.C. Skamarock. Chemical transfer to ice-containing cumulonimbus cloud hydrometeors and its effects on tropospheric chemical distributions. The Millennium Symposium on Atmospheric Chemistry, American Meteorological Society Annual Meeting, January 2001.

AL Stuart, MC Barth, WC Skamarock, and MZ Jacobson. Effects of solid-phase cloud hydrometeors in convective clouds on chemical distributions and deposition. U.S. EPA STAR Fellowship Conference, Washington D.C. July 2000.

AL Stuart, MC Barth, WC Skamarock, and MZ Jacobson. Solid microphysics and chemistry interactions in thunderstorm simulation using a three-dimensional cloud model. Eos Suppl., Transactions. American Geophysical Union Fall Meeting, Dec. 1998.

AL Stuart and MZ Jacobson. Studying the relative effects on model predictions using reduced versus expanded stratospheric ozone chemical mechanisms. Eos Supplement, Transactions. American Geophysical Union Fall Meeting, Dec. 1997.

University Conference Abstracts and Presentations (selected)

Supervised §Postdoctoral scholar; ‡graduate student; †undergraduate student

J Donegan‡, A Stuart, J Mihelcic, J Corvin. Appropriateness of Improved Cookstoves – Health Impacts in Panama. 5th Air Quality Worshop, University of Florida, March 2017.

S Gurram‡, AL Stuart, AR Pinjari. Impacts of transit-oriented compact-growth on air pollutant concentrations and exposures in the Tampa region. 5th Air Quality Worshop, University of Florida, March 2017.

R Ramakrishnan‡, A Stuart, R Kirby, J Salemi, H Chen, K O'Rourke. Ambient cadmium as a risk factor for congenital diaphragmatic hernia. 5th Air Quality Worshop, University of Florida, March 2017.

AK Marroquin†, R Michael§, AL Stuart. What is the healthiest way to commute? Using a route generator to compare air pollution commute exposures by route and mode. 2016-17 AEESP Distinguished Lecture & Poster Session. September 2016.

K Marroquin†, R Michael§, AL Stuart. What is the healthiest way to commute? Using a route generator to compare commuter exposures to air pollution. Undergraduate Research and Arts Colloquium, University of South Florida. April 6, 2016.

M Resto†, R Michael§, and AL Stuart. Incorporating exposure factors into a commuter exposure modeling system. Undergraduate Research and Arts Colloquium, University of South Florida. April 6, 2016.

K Marroquin†, R Michael§, AL Stuart. Estimating commuter exposure to ambient air pollution using route generators. Health Research Day, University of South Florida. February 19, 2016.

AL Stuart, R Michael§, and G Dagne. Estimating impacts of commute route, mode, and time of day on exposures to traffic-related air pollutants: The Fort Collins Commuter Exposure Study. Air Quality Workshop, University of Florida. November 9, 2015. (Invited oral presentation)

R Michael§, AL Stuart, MA Trotz, F Akiwumi. Mercury deposition to the Tampa Bay area: Source influences from the 2012 USF deposition study. Air Quality Workshop, University of Florida. November 9, 2015.

S Gurram‡, AL Stuart, AR Pinjari. An Integrated Transportation and Air Pollution Modeling 6 Framework for Estimating Mobile Source Emissions and Human Exposures: Application to the Tampa Region. Air Quality Workshop, University of Florida. November 9, 2015.

M Resto†, R Michael§, AL Stuart. Incorporating exposure factors into a commuter exposure estimation modeling system. Air Quality Workshop, University of Florida. November 9, 2015.

AK Marroquin†, R Michael§, AL Stuart. Predicting commuter exposure to ambient carbon monoxide using a route generator. Air Quality Workshop, University of Florida. November 9, 2015.

S Gurram‡, AL Stuart, AR Pinjari. An Integrated Transportation and Air Pollution Modeling 6 Framework for Estimating Mobile Source Emissions and Human Exposures: Application to the Tampa Region. 8th Annual College of Engineering Research Day, University of South Florida. November 5, 2015.

M Resto†, R Michael§, AL Stuart. Incorporating exposure factors into a commuter exposure estimation modeling system. 8th Annual College of Engineering Research Day, University of South Florida. November 5, 2015.

K Marroquin†, R Michael§, AL Stuart. Estimating commuter exposure to ambient carbon monoxide using route generators. 8th Annual College of Engineering Research Day, University of South Florida. November 5, 2015.

SD Slinn†, S Gurram‡, R Michael§, AL Stuart. Improving the Efficiency of Urban Air Pollution Dispersion Modeling. 8th Annual College of Engineering Research Day, University of South Florida. November 5, 2015.

R Michael‡ and AL Stuart, Source attribution of atmospheric mercury deposition to Tampa using positive matrix factorization. Graduate School Research Symposium, University of South Florida. March 2012.

R Michael‡, AL Stuart, MA Trotz, and F Akiwumi, Source attribution of atmospheric mercury deposition to Tampa using positive matrix factorization. 22nd Annual Health Research Day, University of South Florida. February, 2012.

S Mehra‡, H Yu‡, TJ Mason, AL Stuart, D Santiago‡, A Mullen‡. Local health impact assessment method for formaldehyde. 22nd Annual Health Research Day, University of South Florida. February 24, 2012.

S Gurram‡, AL Stuart, AR Pinjari. Characterization of exposures to ambient NOx Levels in the Tampa area considering spatiotemporal travel activity data. College of Engineering Research Day, University of South Florida. November 17, 2011.

S Fridh‡ and AL Stuart. A spatial investigation of highly resolved ambient benzene concentrations using passive sampling. 21th Annual Health Research Day, University of South Florida. 2011.

R Michael‡, AL Stuart, P Borisuth‡, MA Trotz, and F Akiwumi. Atmospheric mercury deposition and source attribution for Tampa. 21th Annual Health Research Day, University of South Florida. 2011.

H Yu‡ and AL Stuart. Modeling of residential exposures to nitrogen oxides among different population groups in Hillsborough County. 21th Annual Health Research Day, University of South Florida. 2011.

R Michael‡ and AL Stuart. Modeling the environmental, economic, and socio-cultural dynamics of mercury. 20th Annual Health Research Day, University of South Florida. February 19, 2010.

AM Evans‡ and A.L. Stuart. An investigation of small-scale variability in aldehyde concentrations through passive sampling and analysis. 20th Annual USF Health Research Day, University of South Florida. February 19, 2010.

H Yu‡ and AL Stuart. Air pollutant dispersion modeling and analysis of equity impacts in the Tampa area. 20th Annual USF Health Research Day, University of South Florida. February 19, 2010.

A Evans‡ and AL Stuart. Passive sampling for aldehydes in Hillsborough County, Florida. Abstract. 2nd Going Green Tampa Bay Expo, University of South Florida. October 2009.

H Yu‡ and AL Stuart. Benzene Air Pollution and Environmental Equity in the Tampa Area. Abstract. 2nd Going Green Tampa Bay Expo, University of South Florida. October 2009.

A Tapper† (and A.L. Stuart, advisor). Mercury from Dental Amalgams: Routes of Exposure and Methods of Reduction. Thesis Day, Honors College, University of South Florida. April 24, 2009.

H Yu‡, W Traisantikul‡. A.L. Stuart. Modeling and Equity Analysis for Benzene Air Pollution in Tampa Area. Emerging Paradigms Conference, University of South Florida. April, 2009.

C Einmo‡, AL Stuart. The Role of Domestic Combustion Emissions in Urban Air Quality. Emerging Paradigms Conference, University of South Florida. April 2009.

A Tapper†, AL Stuart. Mercury from Dental Amalgams: Routes of Exposure and Methods of Reduction. Undergraduate Research Symposium, University of South Florida. April 3, 2009.

H Yu‡, AL Stuart. Modeling of NOx Air Pollution in Tampa Area. National Public Health Week Research and Practice Poster Session, University of South Florida. March, 2009.

A Evans‡, S Mehra‡, AL Stuart, T Mason. Asthma and Air Pollution: Past and Future Research. College of Public Health, National Public Health Week Research and Practice Poster Session, University of South Florida. March, 2009.

C Einmo‡, AL Stuart. The Role of Domestic Combustion Emissions in Urban Air Quality. Health Research Day, University of South Florida. March 2009.

C Einmo‡, AL Stuart. Community-scale Modeling of Domestic Biomass Burning Emissions. College of Engineering Research Week, University of South Florida. November 2008.

T Halfhide‡, J Howard‡, R Michael‡, C Einmo‡, D Dey‡, M Trotz, F Akiwumi, and AL Stuart. Understanding mercury in Hillsborough River, Florida, using Sustainability Concepts. Going Green Expo, University of South Florida. April, 2008.

M Zeager‡, AL Stuart. Nitrogen Dioxide Measurements in Neighborhoods in Hillsborough County. Health Research Day, University of South Florida. February, 2008.

R Michael‡, AL Stuart, J Howard‡, M Trotz, N Caesar‡, F Akiwumi. Modeling of the environmental, economic, and socio-cultural dynamics of mercury. Health Research Day, University of South Florida. February, 2008.

R Michael‡, AL Stuart, J Howard‡, M Trotz, N Caesar‡, F Akiwumi. Modeling of the environmental, economic, and socio-cultural dynamics of mercury. Graduate Multidisciplinary Scholars Symposium, University of South Florida. November, 2007.

J Howard‡, AL Stuart, N Caesar‡, F Akiwumi M. Trotz. The Examination of Anthropogenic Mercury Contamination to Sediments in Tampa Bay, FL (USA) and Arakaka-Matthew's Ridge, Guyana. Graduate Multidisciplinary Scholars Symposium, University of South Florida. November, 2007.

R Michael‡, A.L. Stuart, Chemical fate during hail growth. Engineering Scholarship Day, University of South Florida. April, 2007.

P Borisuth‡, W Sriwatanapongse, and AL Stuart. Mercury atmospheric deposition study for Tampa Bay. Student Poster Session, AEESP Distinguished Lecture, University of Central Florida. March 2007.

S Mudhasakul‡, W Sriwatanapongse, and AL Stuart. Localized air quality and population disparities in Tampa, FL., EOH Public Health Seminar, University of South Florida. March 2007.

AL Stuart and DA Wilkening. Degradation of biological weapons agents in the environment and its implications for terrorism response. 6th Annual Meeting of the Consortium of Biodefense Researchers, University of South Florida. June 2005.

AL Stuart, MC Barth, WC Skamarock, and MZ Jacobson. Volatile chemical retention during hydrometeor freezing and its effects on tropospheric chemistry. Atmospheric Sciences Symposium, University of California at Berkeley. November 2001.

Invited Presentations, Talks, and Panels (selected)

Air quality design for sustainability. Institute for a Sustainable Environment and Dept. of Chemical Engineering, Clarkson University. January 2017.

Sustainable cities: an air quality perspective. Student Chapter, Society of Toxicology, University of South Florida. February 2016.

Sustainable cities: an air quality perspective. Induction Speaker, Science National Honor Society, Brooks DeBartolo Collegiate High School, Tampa, FL. February 2016.

Estimating impacts of commute route, mode, and time of day on exposures to traffic-related air pollutants. Air Quality Workshop, University of Florida. November 2015.

Clean Power Plan Press Conference. Panel. Organized by Physicians for Social Responsibility Tampa Bay. September 2014.

Connecting urban design, transportation, air pollution exposures, and environmental equity. Department of Health. Perth, Australia. May 2014.

Adventures in air pollution. School of Population Health, The University of Western Australia. March 2014.

Development of a commuter exposure modeling system that integrates air pollution dispersion and path-following activity location in a Bayesian framework. 2013 AEESP 50th Anniversary Conference. July 2013.

Building the AWMA USF Partnership - A look at USF programs and research related to air and waste management. Tampa Bay Chapter of the Air and Waste Management Association. June 2012.

Breathing free in Tampa: Air pollution, urban design, and environmental equity. Physicians for Social Responsibility Tampa Bay. February 2012.

Congratulations, you are a CAREER winner! Now what? Panel, Assoc. of Env. Eng. and Sci. Professors. Education and Research Conference. July 2011.

Professional Development Panel for Students and Young Professionals. Air and Waste Management Association, 104th Annual Conference and Exhibition. June 2011.

Air pollution, urban design, and environmental equity. Tampa Bay Chapter of the Air and Waste Management Association. October 2010.

Interdisciplinary platforms for environmental health. Advanced Interdisciplinary Seminar in Public Health, University of South Florida. June 2010.

Air pollution, environmental equity, and urban design in Tampa. American Meteorological Society Meeting, Tampa Chapter. November 2009.

Air pollution – interactions with transportation, urban growth, and equity. Center for Urban Transportation Research. October 2009.

Air pollution, health equity, and sustainability. Research Experiences for Undergraduates Seminar, USF. July 2009.

Sustainable Healthy Communities: Mercury. Board of Trustees Working Group Meeting, USF. February 2009.

Computation at the Interface between Public Health and Engineering. Symposium on High-Performance Computing, University of South Florida. January 20, 2009.

Air pollution and its interactions with transportation. Center for Urban Transportation Research, University of South Florida. October 22, 2008.

Sustainable Healthy Communities: An integrated comparative study of mercury contamination and exposures in the Tampa Bay and Guyana. Environmental Research Interdisciplinary Colloquium, USF. October 10, 2007.

Focus on Tampa Bay Air Quality: mercury, sustainability, and environmental justice. Environmental Protection Commission of Hillsborough County. May 8, 2007.

Environmental Degradation of Biological Weapons Agents: Implications for Terrorism Response. Florida Environmental Health Association, Tampa Bay Chapter. February 2, 2007.

Data assimilation for improved air quality forecasts. EOH Seminar, University of South Florida. April, 2006.

Ensemble Kalman Filter data assimilation with a 2-D sea breeze chemical tracer model. Environmental Research Interdisciplinary Colloquium, USF. October 20, 2005.

Environmental Degradation of Biological Weapons Agents: Implication for terrorism response. EOH Public Health Seminar. University of South Florida. February, 2005.

Pollutants in the atmospheric environment. University of South Florida. Tampa, FL. April 26, 2004.

An application of chemical engineering to understanding ice-chemical interactions in clouds: Partitioning during hydrometeor freezing. University of Iowa. Jan. 29, 2004.

Effects of cloud freezing on chemicals in the environment. University of Houston. May 4, 2004.

Pollutants in the Atmospheric Environment. Texas A&M University. Atmospheric Sciences Department. College Station, TX. April 12, 2004.

Chemical partitioning during cloud hydrometeor freezing and its effects on tropospheric chemical distributions. Texas A&M University. Sept. 30, 2003.

Environmental Degradation of Chem-bio Weapons Agents. Sandia National Laboratories, System Studies Department. Livermore, CA. June 26, 2003.

Denaturing of Chem-bio Weapons Agents in the Environment. Center for International Security and Cooperation. Stanford University. Stanford, CA. June 10, 2003.

Volatile chemical partitioning during cloud hydrometeor freezing and its effects on tropospheric chemical distributions. Princeton University. Science, Technology and Environmental Policy Program. December 18, 2002.

Volatile chemical partitioning during cloud hydrometeor freezing and its effects on tropospheric chemical distributions. Naval Research Laboratory. Marine Meteorology Division. Monterey, CA. November 2002.

Environmental Processing of Biological and Chemical Weapons Agents. Lawrence Livermore National Labs. Atmospheric Sciences Div. Livermore, CA. November 2002.

Volatile chemical partitioning during cloud drop freezing: Modeling studies. NASA Ames Research Center. Atmospheric Physics Branch. Moffett Field, CA. February 2002.

Volatile chemical partitioning during cloud drop freezing: Modeling studies. University of Wyoming. February 2002.

FUNDED GRANTS AND CONTRACTS

Externally-funded Grants/Contracts as a Lead Investigator

PI is principal investigator, I is investigator

A Stuart (project PI) and F Mannering. Impacts of transit-oriented compact-growth on air pollutant concentrations and exposures in the Tampa region. *Project under the UTC: Center for Transportation, Environment, and Community Health (CTECH). U.S. Department of Transportation. (Y Zhang, USF UTC Lead)*. $45,860. November 2016 – November 2017.

J Volckens, J Peel, A Stuart (one PI of three). The Commuter Exposure Study: linking exposure, source-receptor models, and health. *National Institute of Environmental Health Sciences*. $2,023,000. January 2012 – October 2016.

A Stuart (PI). CAREER: Multi-scale interactions of air pollution, urban growth, and equity – integrated research methods and informal science teaching. *CBET- Environmental Sustainability*, *National*

Science Foundation. $400,000. January 2009 – December 2014.

R Kirby, A Stuart (co-I, lead for air pollution subproject). Environmental Public Health Tracking. *Florida Department of Health*. $351,000. November 2011 – June 2014.

J Mihelcic, A Stuart (co-PI), Q Zhang, S Ergas, Y Zhang. S-STEM: Graduate Scholarships to Achieve Sustainable Infrastructure at the Water-Energy-Global Nexus. *National Science Foundation*. $600,000. June 2010 – May 2014.

A Stuart (PI), P-S Lin. Air quality impacts of managed lanes. *National Center for Transit Research, Florida Department of Transportation.* $99,375. April 2009 – December 2010.

SJ Hendricks, E Hillsman, A Stuart (co-PI). Developing a framework toolkit for carbon footprint that integrates transit. *National Center for Transit Research, Florida Department of Transportation.* $95,562 February 2009 – September 2010.

A Stuart (PI). Tampa Bay Toxics Assessment. *Florida Department of Environmental Protection*. $116,000. July 2006 – June 2007.

J Nielsen-Gammon, A Stuart (co-PI), J Guynes. A rural air quality monitoring tower site in East-Central Texas. *Texas Commission on Environmental Quality*. $93,597. September 2004 – August 2005.

J Nielsen-Gammon, A Stuart (co-PI), F Zhang. Meteorological model improvements using the ensemble Kalman filter. *Texas Environmental Research Consortium.* $120,000. January 2004 – Nov. 2004.

A Stuart. STAR Graduate Fellowship, *US Environmental Protection Agency*. $102,000. 1999-2002.

A Stuart. Graduate Fellowship, *National Science Foundation*. $73,500. 1996-1999.

University Grants/Contracts as a Lead Investigator

§Postdoctoral scholar under supervision

A Stuart (PI), R Michael§. Development, application, and dissemination of systems-based computational approaches for understanding and reducing exposures to air pollutants. *College of Public Health, University of South Florida*. $25,000. January – August 2015.

D Mendoza§, AL Stuart (PI as faculty advisor). Quantifying variations in exposure to PM_{10} and NO_x for road construction workers. Pilot Project. National Institute of Occupational Safety and Health Sunshine Education and Research Center, University of South Florida. $7,748. Jan. – Jun. 2013.

AL Stuart (PI), M Trotz, F Akiwumi. Understanding and promoting sustainability related to mercury exposures through integrated research, graduate education, and community involvement. *Sustainable Healthy Communities Initiative, University of South Florida*. $392,600. May 2007 – May 2009.

AL Stuart (PI). A preliminary study of mercury deposition to Tampa Bay. *New Researcher Grant, University of South Florida*. $8,000. 2006 – 2007.

AL Stuart (Lead), E Oches, D Yeh. Support of the Environmental Research Interdisciplinary Colloquium. *Colleges of Public Health, Engineering, and Arts & Science, Departments of Environmental & Occupational Health, Civil & Environmental Engineering, and Environmental Science & Policy, University of South Florida*. $4,900. September 2005 – May 2006.

RESEARCH TEACHING AND MENTORING

Awards Received by Supervised Students

K Marroquin. Best poster, Undergraduate student poster competition. Health Research Day, USF (2016).
S Gurram. Poster presentation award with $100 travel grant. Engineering Research Day, USF (2015).
M Resto. Poster presentation award with $500 travel grant. Engineering Research Day, USF (2015).
J Sears. 1st place, graduate student poster competition. Florida Section A&WMA Conference (2013).
J Sears. Best Poster Award. Health Research Day, USF (2012).
R Michael. Outstanding Presentation Award. Health Research Day, USF (2012).
H Yu. Sam Bell Endowed Scholarship, College of Public Health, USF (2012).
H Yu. S. Gurram. Graduate Research Challenge Grant, USF (2012).
S Fridh. 2nd Place, MS student poster competition. A&WMA Annual Conference and Exhibition (2011).

H Yu. 3rd Place, PhD student poster competition. A&WMA Annual Conference and Exhibition (2011).
R Michael. College of Public Health Student Research Scholarship, USF (2011).
H Yu. Graduate Research Challenge Grant, USF. (2011).
H Yu. Sustainability Research Scholarship Award, Air and Waste Management Association (2011).
H Yu. The Axel Henderson Scholarship, Florida Section A&WMA (2011).
H Yu. 1st Place Outstanding Poster Award. Health Research Day, USF (2011).
R Michael. Outstanding Poster Award. USF Health Research Day (2011).
A Evans. Environmental Public Health Training Fellowship. Association of Schools of Public Health / U.S. Environmental Protection Agency (2010).
A Evans. Outstanding Graduate Student Award. University of South Florida (2010).
T Halfhide, J Howard, R Michael and D Soledad. Graduate Student Challenge Grants, USF. (2009).
M Zeager. Pediatric Environmental Health Fellowship. Harvard University and Children's Hospital Boston. (2008)
T Halfhide, J Howard, R Michael, C Einmo, D Dey. Best graduate poster: Understanding mercury in Hillsborough River, Florida, using Sustainability Concepts. USF Going Green Expo (April 2008).
R Michael. Graduate Multidisciplinary Scholar. University of South Florida (2008).
C Einmo, R Michael, M Grey, et al., 1st Place. Environmental Challenge, Florida Section Air and Waste Management Association Annual Meeting Competition (2007).

Direction of Current Student Research
[Name, degree type, stage in program (Dr. Stuart's role)]; (ordered by type and reverse chronology)

Farsha Ebrahimi, PhD pre-candidacy (co-major professor) January 2017 – present
Department of Civil and Environmental Engineering, USF.
Topic: Data assimilation for predictive modeling of couple environmental systems

Sashikanth Gurram, PhD candidate (co-major professor) Fall 2010 – present
Department of Civil and Environmental Engineering, USF.
Topic: Interactions between urban growth, transportation, and air pollution emissions

Talha Kocah, MS student (co-major professor) Spring 2017 – present
Department of Environmental and Occupational Health, USF.
Topic: Impacts of the Tampa Bay Next project on air quality and population exposures

Josh Donegan, Master's International student, in field (co-major professor) April 2015 – present
Department of Civil and Environmental Engineering, USF.
Topic: Improved cookstoves in Panama

Alicia Steiert, MPH student (Special Project advisor) Spring 2017 – present
Department of Environmental and Occupational Health, USF.
Topic: A chemical safety and hygiene plan for a multi-group university laboratory

Current Thesis and Dissertation Committees
[Name, degree type, stage in program (Dr. Stuart's role)]

Rema Ramakrishnan, PhD pre-candidacy (committee member) Summer 2014 – present
Department of Epidemiology and Biostatistics, USF
Topic: Air pollution and congenital diaphragmatic hernia

Direction of Completed Postdoctoral Research
(ordered by reverse-chronology)

Ryan Michael, Postdoctoral scholar (supervisor/mentor) Summer 2014 – Summer 2016
Department of Environmental & Occupational Health, USF.
Topic: Systems-based modeling for understanding and reducing exposures to air pollutants

Haofei Yu, Postdoctoral scholar (supervisor/mentor) Fall 2013 – Summer 2014
Department of Environmental & Occupational Health, USF.
Topic: Estimation of emissions and concentrations of air pollution

Daniel Mendoza-Lebrun, Postdoctoral scholar (supervisor/mentor) June 2012 – June 2014

University of South Florida
Topic: Commuter exposure modeling

Patrick Pancras, Postdoctoral research faculty (supervisor) July 2006 – June 2007
Department of Environmental & Occupational Health, USF
Topic: Tampa Bay toxics assessment

Direction of Completed Student Dissertations, Theses, and Other Degree Research Manuscripts
[Name, type (Dr. Stuart's role)]; (ordered by type, then reverse-chronology)

Kayon Barrett, Dissertation (co-major professor) PhD 2017
Department of Environmental & Occupational Health, USF.
Title: The Influence of Tropical Forests and Climate Change on the Fates of Select Organic Pollutants in a Jamaican Watershed
Currently: Lecturer, University of Technology, Jamaica

Ryan Michael, Dissertation (major professor) PhD 2013
Department of Environmental & Occupational Health, USF.
Title: Investigation of mercury use, release, deposition, and exposures in the Tampa Bay area
Currently: Joint CDC-NCAR Postdoctoral Fellowship, Boulder, CO and Atlanta, GA.

Haofei Yu, Dissertation (major professor) PhD 2013
Department of Environmental & Occupational Health, USF.
Title: A modeling investigation of human exposure to select traffic-related air pollutants in the Tampa area: spatiotemporal distributions of concentrations, social distributions for exposure, and impacts of urban design on both
Currently: Assistant Professor, Department of Civil, Environ. Constr. Eng., Univ. of Central Florida.

Jill Sears, Master's Thesis (major professor) MS 2013
Department of Environmental & Occupational Health, USF.
Title: Spatial distribution of nitrogen oxides, benzene, toluene, ethylbenzene, and xylenes in Hillsborough County, Florida: An investigation of impacts of urban forests on ambient concentrations of air pollutants associated with traffic
Currently: Staff EHS Scientist at Golder Associates, Jacksonville, FL.

Merril Putnam, Master's Thesis (co-major professor) MS 2013
Department of Civil and Environmental Engineering, USF.
Title: Insight into the use, perception, and value surrounding domestic water in Peru: envisioning demand management in an intermittent, small-city service context
Currently: Water Resources Engineer, AECOM Technology Corporation, Los Angeles, CA.

Samantha Fridh, Master's Thesis (major professor) MS 2011
Department of Environmental & Occupational Health, USF.
Title: A pilot study of small-scale variations in outdoor benzene concentrations
Currently: Environmental Epidemiologist, Florida Dept. of Health, Hillsborough County, FL.

Amanda Evans, Master's Thesis (major professor) MS 2010
Department of Environmental & Occupational Health, USF.
Title: A pilot study of small-scale spatial variability in aldehyde concentrations in Hillsborough County, FL
Subsequently: ORISE Environmental Health Fellowship, US EPA, Cincinnati, OH.

Ryan Davis, Master's Thesis (co-advisor, advisor in Public Health) MA/MPH 2010
Depts. of Anthropology and Environmental & Occupational Health, USF.
Title: Risk perception and polybrominated diphenyl ethers in Tampa area reclaimed water supply
Currently: Doctoral student, Inst. Resources, Environ. and Sustain., U. of British Columbia, Vancouver.

Ryan Michael, Master's Thesis (major professor) MS 2008
Department of Civil & Environmental Engineering, USF
Title: Fate of volatile chemicals during accretion on wet growing hail

Patricia Leandro, Special Project Report (research advisor) MPH 2017
Department of Environmental and Occupational Health, USF.
Title: Environmental and urban risk factors for poverty increments in Detroit

Colette Nasworthy, Special Project Report (research advisor) MPH 2016
Department of Environmental & Occupational Health, USF.
Title: USF chlorine gas release planning
Currently: Emergency Management Officer, University of South Florida, FL.

Sarah Burns, Special Project Report (research advisor) MPH 2013/ME 2014
Departments of Environmental & Occupational Health, and Civil and Environmental Engineering, USF.
Title: Sensitivity analysis of different temporal and spatial decisions for estimating maternal exposures to benzene and PM2.5 in Florida
Currently: Water/wastewater Engineer, Carollo Engineers, Tampa, FL.

Carol Barrick, Special Project Report (research advisor) MPH 2013
Department of Environmental & Occupational Health, USF.
Title: Reconciling greenhouse gas emissions programs: case study

Teresa Chu, Special Project Report (research advisor) MPH 2013
Department of Environmental & Occupational Health, USF.
Title: Barriers and motivations to physical activity for adults in the Tampa Bay region
Subsequently: Environmental Scientist, Boylan Environmental Consultants, Inc., Fort Myers, FL.

Aisha Turnbull Lawrence, Special Project Report (research advisor) MPH 2011
Department of Environmental & Occupational Health, USF.
Title: A review and analysis on the use of evaluation methods in the USF Laboratory Safety Training program to improve its effectiveness

Harold Hurst, Special Project Report (research advisor) MPH 2011
Department of Environmental & Occupational Health, USF.
Title: Acrolein in urban air - monitoring and health impacts

James Womble, Special Project Report (research advisor) MPH 2009
Department of Environmental & Occupational Health. USF
Title: Development of a passive sampling protocol for pilot study of benzene and 1,3-butadiene concentrations in ambient air

Joe Graham, Special Project Report (research advisor) MPH 2008
Department of Environmental & Occupational Health. USF
Title: Method selection and protocol development for passive measurement of aldehydes in ambient air.
Currently: Environmental Specialist I, Pinellas County Air Quality, Clearwater, FL

Michelle Zeager, Special Project Report (research advisor) MPH 2008
Department of Environmental & Occupational Health. USF
Title: Spatial variation of nitrogen dioxide in Hillsborough County, Florida
Subsequently: Pediatric Environmental Health Fellow, Children's Hospital Boston, MA.
Currently: Asst. Clinical Professor, The Univ. of Texas Rio Grande Valley, Harlingen, TX.

Kayla Peacock, Project Report (project advisor) MA 2016
Patel College of Global Sustainability, USF.
Topic: Effectively engaging faith-based organizations in sustainability and environmental awareness

Somkit Bunchitmongkhon, Special Research Project Report (research advisor) MS 2009
Dept. of Chem. Eng., King Mongkut University of Technology, Thailand (KMUTT); Visiting scholar at USF
Title: Mass balance calculations for mercury cycling in Tampa Bay

Tippawan Dethtada, Special Research Project Report (research advisor) MS 2009
Dept. of Chemical Engineering, KMUTT; Visiting scholar at USF
Title: Urban land use and transportation growth modeling development for air quality

Watcharaphol Traisantikul, Special Research Project Report (research advisor) MS 2009
Dept. of Chemical Engineering, KMUTT; Visiting scholar at USF
Title: Air pollution dispersion modeling for localized exposure in Tampa

Sarntharm Mudhasakul, Special Research Project Report (research advisor) MS 2007
Department of Chemical Engineering, KMUTT; Visiting scholar at USF
Title: Localized air quality and population disparities in Tampa, Florida

Pakornkit Borrisuth, Special Research Project Report (research advisor) MS 2007
Department of Chemical Engineering, KMUTT; Visiting scholar at USF
Title: Mercury atmospheric deposition study for Tampa Bay

Jill Sears, Undergraduate Honor's Thesis (thesis advisor) BS 2011
Honor's College, USF.
Title: Public health implications of marina pollution on recreational beaches

Alexandra Tapper, Undergraduate Honor's Thesis (thesis advisor) BS 2009
Honors College, USF
Title: Mercury from dental amalgams – Routes of exposure and methods of reduction

Chantal Braithwaite, Undergraduate Honor's Thesis (thesis advisor) BS 2006
Honors College, USF
Title: Investigation of air pollution related health disparities in Tampa, Florida

Completed Dissertation and Thesis Committees
[Graduate name, type (Dr. Stuart's role)]; (reverse chronological order)

Jean Paul Tanner, PhD candidate (committee member) PhD 2017
Department of Epidemiology and Biostatistics, USF
Topic: Ambient benzene and $PM_{2.5}$ exposure during pregnancy: examining the impact of exposure assessment decisions on associations between birth defects and air pollution

Shabnam Mehra, Dissertation (committee member) PhD 2017
Department of Environmental & Occupational Health, USF
Title: Estimating the impact of select criteria pollutants on childhood asthma in Florida

Shakira Hadley, Master's Thesis (committee member) MS 2013
Department of Civil and Environmental Engineering, USF
Title: Modified double agar layer method to detect bacteriophage for assessing the potential of wastewater reuse in rural Bolivia

Joanne Sullivan, Dissertation (committee member) PhD 2010
Department of Geography, USF
Topic: Urban heat island and its effects on weather modification in Tampa, FL

Joniqua Howard, Dissertation (committee member) PhD 2010
Department of Civil and Environmental Engineering, USF
Topic: Mercury in the environment – Field sites from Tampa, Bolivia, and Guyana

Trina Halfhide, Master's Thesis (committee member) MS 2009
Department of Geography, USF
Title: Mercury perception, community awareness and sustainability implications for the Tampa Bay Region, Florida

Max Moreno, Dissertation (committee member) PhD 2008
Department of Environmental and Occupational Health, USF
Title: Eutrophication trend of lakes in the Tampa Bay watershed and the role of submerged aquatic vegetation in buffering lake water phosphorous

Son Hong Ho, Dissertation (committee member) PhD 2007
Department of Mechanical Engineering, USF
Title: Numerical simulation of thermal comfort and contaminant transport in air conditioned rooms

Kerstin Kenty, Dissertation (outside chair) PhD 2006
Department of Chemical Engineering, USF
Title: Measurement and modeling of oxides of nitrogen from vehicular contributors

Silvia Calderon, Dissertation (outside chair) PhD 2006
Department of Chemical Engineering, USF
Title: Estimation of the particle and gas scavenging contributions to wet deposition of organic and inorganic nitrogen

Direction of Research by Other Students and Visitors
[Name, type, position or program]; (reverse chronological order)

A. Kaleb Marroquin, undergraduate student — May 2015 – Dec. 2016
Department of Civil and Environmental Engineering, USF.
Topic: Using a route generator to stochastically estimate travel activity

Monica Resto, undergraduate student — May 2014 – Aug. 2016
Department of Civil and Environmental Engineering, University of South Florida (USF)
Topic: Adding exposure factors to a commuter exposure modeling system

Stephen Slinn, undergraduate student — Fall 2015
Civil and Environmental Engineering, USF
Topic: Modeling of traffic-related air pollution in the Tampa area

Travis Ogden, undergraduate student — Spring 2015
Civil and Environmental Engineering, USF
Topic: Evaluation of transportation modeling results

Michael Usowicz, graduate student — Spring 2011 – Spring 2015
Civil and Environmental Engineering, USF
Topic: Cookstove emissions

Melissa Butcher, graduate student — Fall 2012 – Summer 2013
Civil and Environmental Engineering, USF
Topic: Emissions from start-up, shut-down, and malfunction events

Kent Pan, undergraduate student — Summer 2013
Research Experiences for Undergraduates (REU), Visiting Cornell University (Env. Eng.)
Topic: Modeling and measurement of select pollutants in the Tampa area

Joseph McLaughlin, K-12 science teacher — Summer 2013
Research Experiences for Teachers (RET), USF
Topic: Measurements campaign for BTEX concentrations in Hillsborough County

Beth Valentine, K-12 science teacher — Summer 2012, 2013
Research Experiences for Teachers (RET), USF
Topic: Mercury fate and distributions - incorporating research into lesson plans

Paulo Garcia, undergraduate student — Spring 2013
Environmental Science and Policy Program, USF
Topic: Measurement of select pollutants in the Tampa area

Jujhar Khurana, graduate student — Fall 2012 - Spring 2013
Computer Science and Engineering, USF
Topic: Programming support for commuter exposure modeling

Jasmine Dorsey, undergraduate student — Fall 2012
Computer Science and Engineering, USF
Topic: Programming support for commuter exposure modeling

Adib Amini, graduate student — Fall 2012
Civil and Environmental Engineering, USF
Topic: Sustainable transportation systems

C. Henry, Middle school student — Fall 2011 – Spring 2012
Science fair project, Hillsborough County, Florida
Title: What did you have for "Air" today? (Took 3rd Place at Regionals)

Stephen Signore, undergraduate student — Summer 2011
Research Experiences for Undergraduates (REU), Visiting from Florida State Univ (Civil & Env. Eng.)
Topic: Mass based inventory of mercury use and release in the Tampa area

Aiah Yassin, graduate student — Summer 2010
Urban and Regional Planning Program, Department of Geography

Topic: Greenhouse gas emissions from bus rapid transit

Emily Henderson, undergraduate student Summer 2010
Research Experiences for Undergraduates (REU), Visiting from University of Florida (Env. Eng.)
Topic: Spatial allocation and air dispersion modeling of port emissions in Tampa, FL

Eric Francis, undergraduate student Summer 2009
Research Experiences for Undergraduates, College of Engineering, USF
Topic: Air dispersion modeling of 1,3-butadiene in Tampa, FL

Chris Einmo, graduate student 2008 – 2009
Environmental and Occupational Health, Civil and Environmental Engineering, USF
Topic: Biomass burning emissions

Brett Galbraith, graduate student Spring 2007
Department of Civil and Environmental Engineering. USF
Topic: Temporal trends in mercury emissions in Florida

Darlene Martin, graduate student 2006 – 2007
Department of Environmental and Occupational Health, USF
Topic: Aerosolized microorganism survivability, infectivity, detection and modeling

Tanmaykumar Patel, graduate student Spring – Summer 2006
Department of Epidemiology and Biostatistics, USF
Research Topic: Tampa bay air quality affects of respiratory and cardiovascular health

Stacia-Perry Eaton, K-12 science teacher Summer 2006
Research Experiences for Teachers (RET), University of South Florida
Topic: Mapping study of air quality in Tampa, FL

Fritz Breckner, graduate student 2005 – 2006
Department of Environmental & Occupational Health, USF
Topic: Vehicular emissions and air quality in Jakarta, Indonesia

Priya and Meera Bhandari, graduate students Fall 2005
Department of Civil and Environmental Engineering, USF
Topic: Water logging and salinization in Muktsar, India

Academic Advising

MPH, MSPH, and PhD students Spring 2005 – present
Department of Environmental & Occupational Health, University of South Florida (USF)
Degree advising of a few students each semester, with some focus on students interested in joint degrees.

Undergraduate students Sept 1998 – June 2000
Stanford University
Formally advised six undergraduate students with undeclared majors who were interested in science or engineering.

COURSE TEACHING AND CURRICULUM DEVELOPMENT

Instruction of Undergraduate-Level Courses

Numerical and Computer Methods and Tools Spring, 2009 – present
Department of Civil & Environmental Engineering, University of South Florida
Undergraduate lecture and computer laboratory course.

Development of course objectives and curriculum. Selection of content resources. Development and presentation of lecture material. Preparation and facilitation of laboratory sessions. Development of class homework assignments and grading rubrics, laboratory assignments, and exams. Grading of exams and projects. Supervision of TA assignment grading.

Instruction of Graduate-Level Courses

Contract Courses 2005 – present
Departments of Environmental & Occ. Health, and Civil and Environmental Engineering, USF
Independent Study, Directed Research, Special Project, Field Placement, and Thesis courses involving supervision of student research projects or experiences.

Community Air Pollution / Air Pollution Fundamentals Fall, 2005 – present
Depts. of Environmental & Occupational Health and Civil & Environmental Engineering, USF
Master's level lecture and project course.
Development of course objectives and curriculum. Selection of content and activity resources. Preparation and presentation of lecture material. Facilitation of class activities. Development of quizzes, practice assignments, and exams. Development of a course project involving literature review, oral presentation, and paper writing. Development of materials for peer-review of practice assignments and project components, including a writing evaluation rubric and answer keys. Grading of exams, projects, and assignments.

Environmental Research Interdisciplinary Colloquium Spring 2005 – 2008; Fall 2005 – 2015
Department of Environmental & Occupational Health (Public Health Seminar), USF
Department of Civil & Environmental Engineering, USF
(with graduate and undergraduate courses attached in Environmental Science & Policy), USF
Interdisciplinary seminar series.
Founded the series in collaboration with two other faculty members in different colleges. Wrote internal proposals to secure speaker and colloquium funding. Led the organization of seminars for the first few years of the series. Development of course objectives and curriculum. Selection, scheduling, and communication with speakers and student facilitators. Grading of course assignments.

Environmental Modeling Spring 2007, 2010, 2012
Depts. of Environmental & Occupational Health and Civil & Environmental Engineering, USF
Doctoral lecture, discussion, and project course.
Development of course objectives and curriculum. Preparation and presentation of lecture material. Facilitation of class activities. Development of class assignments and exams. Supervision of course projects involving model development or analysis, oral presentation, and paper writing. Grading of assignments and projects.

Sustainability Concepts and Methods Spring 2008, 2009
Depts. of Environmental & Occ. Health, Civil & Environmental Engineering, and Geography, USF
Interdisciplinary graduate course.
Led the development of the course curriculum in collaboration with two other faculty members. Prepared and presented lecture material. Developed assignments and computer laboratory exercises. Co-developed a group course project involving literature review, field chemical sampling, field population survey, system modeling, oral presentation, and paper writing. Co-supervised a course field research trip to Guyana in 2009. Graded assignments and the project.

Environmental Health Research Discussions Fall 2005, 2006
Department of Environmental & Occupational Health, University of South Florida
Doctoral course focused on developing research skills and presentation of research progress.
Developed course curriculum. Prepared and presented lecture material. Facilitated class discussions and student presentations.

Advanced Atmospheric Chemistry Seminar Spring 2004
Department of Atmospheric Sciences, Texas A&M University, College Station, TX
Doctoral lecture and discussion course.
Led a team of four instructors. Designed course structure, general content, lectures, and student projects. Determined specific course content on cloud chemistry topics. Graded course presentations and papers.

Instruction Assistance for Other Courses

Guest Lecturer on air pollution and exposure analysis topics 2005 – present
University of South Florida
Presentation of lectures for several courses including a Certified Hazardous Materials Managers preparation course, the Environmental and Occupational Health core class, Introduction to Environmental Engineering, and the Executive MPH weekend program course.

Substitute Lecturer, Air Pollution Spring 2003
Department of Civil & Environmental Engineering, Stanford University, Stanford, CA
Undergraduate and graduate level lecture course; Instructor: M. Z. Jacobson

Teaching Assistant, Air Pollution Spring 2000
Department of Civil & Environmental Engineering, Stanford University, Stanford, CA
Undergraduate and graduate level course; Instructor: M. Z. Jacobson
Ran weekly lecture-style review sessions. Designed a class project on visibility. Corrected homework assignments and exams. Held weekly office hours to assist students with class material.

Other Curriculum Development and Supervision

Environment Health Graduate Certificate 2008 – present
Department of Environmental & Occupational Health, University of South Florida
Certificate Director
Founded a 12-unit certificate program to serve students in other majors and professionals. Review of certificate program applications for admittance and completion. Development and assessment of certificate outcomes.

Environmental Health Graduate Program 2005 – present
Dept. of Environmental & Occ. Health (EOH), USF
Leading of program curriculum development for the Environmental Health (EH) graduate program. Development of joint curriculum, coursework, and degrees between EH, EWRE in CEE, the Environmental Science and Policy Program, the Dept. of Geography, and the Dept. of Anthropology.

Environmental and Water Studies Program 2005 – present
Civil & Environmental Engineering (CEE), USF
Participate in the development of program curriculum for graduate students.

PROFESSIONAL SERVICE

Journal Manuscript Reviewer (selected)
Aerosol and Air Quality Research
Atmospheric Environment
Atmospheric Pollution Research
Bulletin of the American Meteorological Society
Environmental Science and Technology
International Journal of Environment and Pollution
International Journal of Hygiene and Environmental Health
Journal of the Air and Waste Management Association
Journal of Environmental Engineering
Journal of Environmental Planning and Management
Journal of Geophysical Research – Atmospheres
Journal of Hazardous Toxic and Radioactive Waste
Journal of Professional Issues in Engineering Education and Practice
Maternal and Child Health Journal
Mathematical and Computer Modeling
Monthly Weather Review
PLoS One

Transportation Research Part A
Science of the Total Environment

Grant Proposal Reviewer (selected)

National Science Foundation
US Environmental Protection Agency
National Oceanographic and Atmospheric Administration
US Civilian Research and Development Foundation
University of South Florida New Researcher Grant

Other Service (selected)

Member, Lectures Committee, Association of Environmental Engineering and Science Professors, (June 2013 – present)
Member, Lecture Subcommittee, Air and Waste Management Association/Association of Environmental Engineering and Science Professors (June 2013 – present)
Liaison for students, Florida Air and Waste Management Association (2007 – present)
Leader, Coding Club presentation and workshop, Riverhills Elementary School (2016)
Speaker, Science National Honor Society Induction, Brooks Debartolo Collegiate High School (2016)
Faculty Advisor for middle school science fair student (2015)
Panel Speaker, Physicians for Social Responsibility, Clean Power Plan Press Conference (2014)
Leader, Hour of Code, Greco Middle School (2014)
Faculty Advisor for middle school science fair student (2013)
Chair, Student Awards Committee, Higher Education Division, Education Council, Air and Waste Management Association (2011 – 2013); Vice chair (2008 – 2011)
Organizing committee. AEESP Biennial Conference, Association of Environmental Engineering and Science Professors (2010 - 2011)
Interim Vice Chair, Local Technical Committee for the 2011 Annual Meeting, Air &Waste Management Association (Fall 2009)
Faculty organizer and host, Association of Environmental Engineering and Science Professors Distinguished Traveling Lecture and Poster Session, University of South Florida (2008)
Guest advisor, JCCI Special Air Pollution Research Committee, Jacksonville (2008)
Guest Instructor, Great American Teach-In, Lewis Elementary School (2008)
Radio Interviewee, Florida Matters "Climate Change and the Media", WUSF (Sept. 21, 2007)
Mentor, Student Outreach Activity, World Environmental and Water Resources Institute Congress (May 16, 2007)
Conference co-chair for student posters, FL Air and Waste Management Association Annual Meeting (2005)

SPECIALIZED TRAINING AND WORKSHOPS (SELECTED)

Defining the Role of AEESP in Outreach and Communication. AEESP Research and Education Conference, Ann Arbor, Michigan, June 2017.
Anthropology and Engineering: An Interdisciplinary Approach to Water Infrastructure. Institute of Advanced Study, Durham University, UK, May 22 – 25, 2017.
Academic Assessment Training, College of Public Health, USF, March 2016.
Spatial linear models in R, and Analyzing censored & truncated data in R, Workshops on Data Analysis Methods, University of South Florida, October 21 – 22, 2015.
Copyright on Campus, College of Public Health, USF, October 2015.
Health Impact Assessment Training, Florida Department of Health, June 2014.
Leadership Institute Executive Transformation Program. University of South Florida. Spring 2011 – Spring 2012.
Power Writing Workshop for Faculty, College of Public Health, USF, April 2011.
CALPUFF Training Course, TRC, Tampa, FL, March 10 – 12, 2010.
Transportation Conformity. The National Transit Institute. Center for Urban Transportation Research, USF. January 27–29, 2009.

IDEA Initiative: Funding your Transportation Innovation (Transportation Research Board), Tampa FL. December 9, 2008.
Better Courses, Better Tests, Better Students. College of Public Health, USF. January 31, 2008.
Essential Negotiation Skills for Public Health Professionals: Achieving Quality Agreements While Maximizing Your Leverage. College of Public Health, USF. November 7, 2007.
Community of Science and COS Expertise Networking. College of Public Health, USF. October 5, 2007.
Assessment of Student Learning. Center for 21st Century Teaching, USF. Sept. 20, 2007.
CAREER Proposal Workshop, National Science Foundation / AEESP, Blacksburg, VA. July 29, 2007.
CMAQ Training Course, Community Modeling and Analysis Center, Chapel Hill, NC. July 26 – 27, 2007.
SMOKE Training Course, Community Modeling and Analysis Center, Chapel Hill, NC. July 23 – 25, 2007.
Sustainability Teaching Workshop, Center for Sustainable Engineering, UT - Austin, July 15 – 17, 2007.
Indo-US Collaborative on Environmental & Occupational Health Conference, Atlanta, June 26 – 29, 2006.
Air & Waste Management Assoc. 99th Annual Conf. and Exhibition. New Orleans, June 20 – 23, 2006.
Community-Based Scholarship: A New Faculty Orientation Workshop, USF. October 14, 2005
National Science Foundation (NSF) Regional Grants Conference. USF. October 10 – 11, 2005
Environ. Health Conference, Assoc. of Schools of Public Health, Oklahoma City, June 11 – 14, 2005.
Bringing Students from the Classroom into your Research Enterprise: NSF-Supported Strategies. USF. June 2005.
How to Obtain Peer-Reviewed Federal Funding for Research: A Proposal-Writing Workshop. USF. Summer 2005.
Write Wining Grants. Texas A&M University. Sept. 24-25, 2003.
Summer Policy Colloquium. American Meteorological Society / University Center for Atmospheric Research, June 3 - 12, 2001.

PROFESSIONAL CERTIFICATIONS

Fundamentals of Engineering. Engineering Intern No. 1100011799. Florida Board of Professional Engineers.

John P. Tharakan, Ph.D.
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e-mail:jtharakan@howard.edu; tharakan.j@gmail.com; TEL: [redacted]

Education

B.Tech.1982	Chemical Engineering, Indian Institute of Technology, Madras, India
M.S., 1983	Engineering Science (Chemical Engineering), University of California, San Diego, California
Ph.D., 1986	Biochemical Engineering, University of California, San Diego, California

Professional Positions

Administrative/Advisory

2010 – Present	Member, Board of Scientific Counselor's, UE EPA
2009 – Present	Faculty Leadership Council, Engineers Without Borders-USA
2009 – 2013	Chair, Faculty Performance Evaluation System Committee, College of Engineering, Architecture and Computer Sciences, Howard University.
1994 - Present (Except '02-'05)	Director of Graduate Studies, Department of Chemical Engineering, Howard University, Washington, DC
2009 – 2010	Interim Chair, Department of Chemical Engineering, Howard University
2002 - 2005	Chair, Department of Chemical Engineering, College of Engineering Architecture and Computer Science (CEACS), Howard University.
2002 – Present	Chair, Educational Programs and Policies Assessment Committee, Department of Chemical Engineering, CEACS, Howard University
1990-Present	Director, Biochemical and Bioenvironmental Engineering Research Laboratory, Howard University

Academic

2015 – 2016	Fulbright-Nehru Senior Research Scholar, Cochin University of Science and Technology, Kochi, India
2008 – 2009	CETLA Fellow (Center for Excellence in Teaching, Learning and Assessment), Howard University, Washington, DC, USA
2006 – 2007	Senior Fulbright Research Scholar, The New College, Chennai, India
2001 – Present:	Professor of Chemical Engineering, College of Engineering Architecture and Computer Sciences, Howard University, Washington DC, USA.
2004 – Present	Adjunct Professor of Public Health, College of Medicine, Howard University.
1995 – 2001:	Associate Professor, Chemical Engineering, CEACS, Howard University
1990 – 1995:	Assistant Professor, Department of Chemical Engineering, Howard University, Washington, DC
1982 – 1986:	Teaching Assistant, University of California, San Diego

Research and Technical

1994 – 2000:	Research Collaborator, Brookhaven National Laboratories, LI, NY
1989 – 1990:	Scientist I, American Red Cross, Blood Research Lab, Rockville MD
1986 – 1989:	Visiting Scientist, American Red Cross, Rockville, M.D.
1982 – 1986:	Research Assistant, University of California, San Diego
1981 – 1982:	Research Assistant, Indian Institute of Technology, Madras, India

Professional Service and Society Memberships:

2008 – Present	Editorial Board, *Intl J. Service Learning in Engineering*, USA.
2009 – Present	Editorial Board, *J. Engineering Education,* Pune, India.
2009 – Present	Editorial Board, *Intl. J. Quality Assurance in Engineering and Technology Education*, Australia
1996 – Present	American Society of Engineering Education
2000 – Present	American Association of University Professors
1996 – Present:	Sigma Xi Scientific Society, National & Howard University Chapter
1986 – Present:	American Chemical Society (ACS)
1982 – Present:	American Institute of Chemical Engineers (AIChE)
1998 – Present:	New York Academy of Sciences

Honors, Awards and Other Distinctions

Scientific and Research Awards and Honors:

2015 – 2016	Fulbright-Nehru Senior Scholar to India
2006 – 2007:	Senior Fulbright Research Scholar to India
1997 – 2005:	Consistently Received Faculty Merit Award, Howard University
1996 – 1997	Faculty Sustained Superior Performance Award
1995 – 1996	Faculty University Merit Service Award

Educational Honors and Awards:

2013	Outstanding Contribution to Africa and the African Diaspora, Howard University Faculty Senate Award.
2011	Best Presentation Award, *International Engineering and Technology Education Conference (IETEC 2011),* Kuala Lumpur, January 2011.
2009	Outstanding Teaching Award, Howard University, Faculty Senate
2008	Outstanding Syllabus Award, Howard University, Center for Teaching, Learning and Assessment (CETLA), *Honorable Mention*
2007	Teaching with Technology Award, Howard University, Center for Teaching, Learning and Assessment, *Honorable Mention*
2006	Inspirational Interdisciplinary Project Award, Howard University Faculty Senate
2005	Outstanding Paper Contribution Platinum Award, 8th UNESCO International Center for Engineering Education Conference on Engineering Education, Kingston, Jamaica, February 2005
2004	1st Honorable Mention Award, 1st International Conference on Appropriate Technology, Bulawayo, Zimbabwe, July 2004.
2002	Best Paper Award, Environmental Engineering Division, American Society of Engineering Education, Presented at Annual Meeting, Montreal, Canada, 2002
2001–2002	Outstanding Teaching Award, College of Engineering, Architecture and Computer Sciences, Howard University
1996-1997:	Outstanding Teacher Award, School of Engineering, Howard University

PUBLICATIONS:

Publications in Appropriate Technology, Ethics and Engineering Education

- Tharakan, J., "Indigenous Knowledge Systems and Appropriate Technology Development," *Proc. Int'l. Conf. on Recent Advances in Civil Engineering,* Pawels, R (ed), Cochin University of Science and Technology, Kochi, Kerala, India, January 14-16, 2016.
- Tharakan, J., "Service Learning in Engineering Education – Potential for Capacity Building and Sustainable Development," *Proc. 3rd Int'l Conf. on Transformations in Engineering Education,* Pune College of Engineering, Pune, India, Jan 10 – 12, 2016.
- Tharakan, J., "Service Learning in Engineering Education – Potential for Capacity Building and Sustainable Development," *Proc. Int'l. Conf. on Emerging Trends in Mechanical Engineering*, Biju et al (eds), Kochi, Kerala, India, December 2015.
- Tharakan, J (2015) "Indigenous Knowledge Systems – A Rich Appropriate Technology Resource," *African Journal of Science, Technology, Innovation and Development (AJSTID)*, 7 (1) 52 -57.
- Tharakan, J (2015) "Integrating Indigenous Knowledge into Appropriate Technology Development and Implementation," *African Journal of Science, Technology, Innovation and Development (AJSTID)*, 7 (5) 364 - 370.
- Verharen, C, F. Bugarin, D. Schwartzman, J. Tharakan, B. Gutema, J. FOrtunak and G. Middendorf, "Ethics and Extinction: Micro vs Macro Appropriate Technology," *African Journal of Science, Technology, Innovation and Development (AJSTID)*, 7 (5) 381-385, 2015
- Tharakan, J., "Integration of Indigenous Knowledge Systems into Appropriate Technology Development," *Proc. 6th International Conference on Appropriate Technology, K. Madzima (ed) Policy and Standards Section*; Nairobi, Kenya, November 2014.
- Tharakan, J., (ed) *Proc. 6th Int'l Conference on Appropriate Technology, Water and Sanitation Paper Section*, Kenyatta University, Nairobi, Kenya, November 2014.
- Tharakan, J., (ed) *Proc. 6th Int'l Conference on Appropriate Technology, Green Economy and Innovation Paper Section*, Kenyatta University, Nairobi, Kenya, November 2014.
- Tharakan, J., (ed) *Proc. 6th Int'l Conference on Appropriate Technology, Health Paper Section,* Kenyatta University, Nairobi, Kenya, November 2014
- Verharen, C., B. Gutema, J. Tharakan, F. Bugarin, J. Fortunak, G. Kadoda, M. Liu and G. Middendorf, "African Philosophy: A Key to African Innovation and Development," *African Journal of Science, Technology, Innovation and Development*, DOI: 10.1080/20421338.2014.902565 (2014).
- Tharakan, J., "Pedagogy, Technology and Culture – Using Service Learning and Appropriate Technology for Capacity Building," in Kadoda (ed) *Proc Workshop on Knowledge and Innovation – Technology, Pedagogy and Culture,* Khartoum, Sudan, March 2014.
- Verharen, C, J. Tharakan, G. Middendorf, G. Kadoda, J. Fortunak and F. Bugarin, "Survival Ethics in the Real World – The Research University and Sustainable Development," *J. of Science and Engineering Ethics,* **20, 135-154,** March 2014.
- Tharakan, J., "Service Learning in Engineering Education for Capacity Building and Sustainable Development", *Proc. 2nd Intl. Engineering and Technology Education Conference, November 3-7, 2013*, Ho Chi Minh City, Vietnam.

- Tharakan, J., "Engaging Youth in Appropriate Technology: Service Learning in Engineering Education," Workshop on Appropriate Technology for the 21st century: Sustainable Development in Africa, [Invited Presentation] *Kenyatta University, Nairobi, Kenya*, May 27th, 2013.
- Tharakan, J., "Waste No, Resource Yes: Rethinking Pollution Prevention and Waste Management Paradigms for the 21st Century in Developing Countries," *Proc. Int'l. Conf.on Technologies for Sustainable Waste Management in Developing Countries, pp.11,* Vignan University, Vadlamudi, AP, India, August 2013.
- Tharakan, J, "Service Learning in Engineering Education for Capacity Building In Appropriate Technologies for Sustainable Development," *Proc. Intl Conf on Sustainable Development and Governance: Building Commerce and Communities pp 55- 62,* Amrita University, Coimbatore, India, December, 2012
- Tharakan, J, "Indigenous Knowledge Systems – A Potentially Deep Appropriate Technology Resource," in Trimble et al (eds) *Proc. 5th Int'l Conference on Appropriate Technology pp. 253-260*, (ISBN-978-160725-562-8) Pretoria, Republic of South Africa, November 2012.
- Verharen, C., J. Tharakan, F. Bugarin, J. Fortunak and G. Middendorf, "Survival Ethics in the Real World – A Global Model for Experimental Ethics," in Trimble et al (eds) *Proc. 5th Intl Conf on Appropriate Technology pp. 276-283,* (ISBN-978-160725-562-8)Pretoria, South Africa, November 2012.
- Verharen, C, J. Tharakan, G. Middendorf, G. Kadoda, and M. Castro, "Introducing Survival Ethics into Engineering Education and Practice," *J. of Science and Engineering Ethics,* **13,** December, 2011.
- Tharakan, J, "Potential for Implementing Renewable Energy Projects through Service Learning Engineering Education Experiences," in Momoh, J. (ed) *Proc. Intl. Conf. Power Systems Operation and Planning – Sustainable Energy Development,* pp.178-183, Jomo Kenyatta University of Agriculture and Technology, Nairobi, Kenya, January 2012.
- Tharakan, J., "Indigenous Knowledge Systems and Appropriate Technology – Waiting for Knowledge Management," in Gada et al (eds) *Proc. Workshop on Knowledge Management for Capacity in Africa – Harnessing Tools for Development and Innovation,* pp. 227 – 232, University of Khartoum, January 2012.
- Tharakan, J., "Socially Relevant Computing – The Place of Indigenous Knowledge Systems," *Proc. Socially Relevant Computing Workshop,* University of Pretoria, August 2011.
- Tharakan, J., "Institutionalizing a Student-Centered Community-Based Service Learning Engineering Education Experience," *Proc. Int'l Engineering and Technology Education Conference, IETEC 2011,* Kuala Lumpur, Malaysia, January 2011.
- V Dzidzeniyo, J Fortunak, E Hansen, J Tharakan and J Trimble, (eds), *Proc. 4th Int'l Conference on Appropriate Technology*, Accra, Ghana, November 2010.
- Tharakan, J, "The Critical Need for Appropriate Technology," in Dzidzeniyo et al (eds), *Proc. 4th Int'l Conference on Appropriate Technology*, Accra, Ghana, November 2010, *pp v*.
- Tharakan, J, "Appropriate Technology for Water and Sanitation," in Dzidzeniyo et al (eds), *Proc. 4th Int'l Conference on Appropriate Technology*, Accra, Ghana, November 2010, *pp 5 – 12*.

- Verharen, C and J. Tharakan, "Barefoot Ethics: Social Justice Through An Appropriate Technology Checklist," in Dzidzeniyo et al (eds), Dzidzeniyo et al (eds), *Proc. 4th Int'l Conference on Appropriate Technology*, Accra, Ghana, November 2010, *pp 36 – 42*.
- Tharakan, J and J Trimble, (eds), *Proc. 3rd Int'l Conference on Appropriate Technology*, Kigali, Rwanda, November 2008 (ISBN 978-1-60725-559-8).
- Tharakan, J, "The Relevance of Appropriate Technology," in Tharakan, J. and J. Trimble (eds) *Proc. 3rd Int'l. Conference on Appropriate Technology, Kigali, Rwanda, November 2008(ISBN 978-1-60725-559-8)*, pp. 10 – 13.
- Tharakan, J, M Mitchell, J Moore and G Jenkins, "Design of a Combined Solar Energy System for a Remote Flux Tower and a Rural Community," in Tharakan, J. and J. Trimble (eds) *Proc. 3rd Int'l. Conference on Appropriate Technology, Kigali, Rwanda, November 2008(ISBN 978-1-60725-559-8)*, pp. 51- 58.
- J Tharakan, "Educating Engineers in Appropriate Technology for Development," *World Transactions on Engineering and Technology Education*, 5 (1) 233 – 237, 2006.
- J Tharakan, M Castro, J Trimble, B Stephenson, and C Verharen, "Diversifying Engineering Education: A Seminar Course on Ethics and Philosophy of Appropriate Technology," *Global Journal of Engineering Education,* 9 (2), 2005.

Publications in Environmental Engineering and Biotechnology:

- Tharakan, J., "Cradle to Cradle: Pollution Prevention and Resource Management in the 21st Century," *Workshop on Knowledge Management for Environmental Sustainability: Towards a Sudanese Society that is Environmentally Conscious and Conserving,* DAL Excellence Center, Khartoum, Sudan, June 2013 (Keynote Presentation).
- J Tharakan, "Hollow Fiber Bioreactors: From Biotherapeutics Production to Wastewater Treatment," in Chandra, S (ed) *Proc. Intl.Conf. on the Impact of Physical Sciences on Biology, pp.45 – 52,* Queen Mary's College, Chennai, India, July 2011.
- J Tharakan, "An Investigation of Biotransformation and Bioaccumulation of Polychorinated Biphenyls (PCBs) in Vermicompost Systems with *Eisenia foetida* Earthworms," *Proceedings of the International Conference on Environmental Pollution, Restoration and Management*, Ho Chi Minh City, Vietnam, March 2010.
- J Tharakan, "Potential for Algal Biomass as a Sustainable Resource for Energy Production and Environmental Remediation," in Krishnamurth, V (ed) *Proc. Intl Conf.Algal Biomass, Resources and Utilization (ICABRU 2009) pp 11 – 17;* ***Algal Biomass***, Krishnamurti Institute of Algology, Chennai, India (2010).
- J Tharakan, "Decentralized Renewable Energy Systems as a Core Rural Development Policy," Proceedings *Symposium on Anaerobic Degradation and Renewable Energy Through Microbes,* Birla Institute of Science and Technology, Goa, India, January 13 – 15, 2009.
- J Tharakan (ed), *Proceedings of Symposium on Biological Methods of Waste Treatment and Management in South India,* The New College, Chennai, February 2007.
- J Tharakan, "Biological transformation of PCBs in Hazardous Site Waste Sludge," in *Waste Management and The Environment III*, Popov et al (eds), 427 – 436, WIT Press, Southampton, UK, 2006.

- J Tharakan, D Tomlinson, A Addagada and A Shafagati, "Biotransformation of PCBs in Contaminated Sludge: Potential for Novel biological Technologies," *Engineering in Life Sciences,* 6 (1) 43 – 49, 2006.
- J Tharakan, A Addagada, D Tomlinson, and A Shafagati, "Vermicomposting for the Bioremediation of PCB Congeners in SUPERFUND Site Media," in *Waste Management and The Environment II*, Popov and Itoh (eds), pp. 117, WIT Press, Southhampton, UK, 2004.
- RC Chawla, R Liou, JH Johnson and JP Tharakan, "Biodegradation of PCBs in Aqueous and Soil Systems," in Wise et al., (Eds.) *Remediation of Hazardous Waste Contaminated Soils*, pp. 237 – 264, Marcel Dekker, New York, 2000.
- JP Tharakan and J Gordon, "Cometabolic Transformation of TNT using Aromatic and Non-aromatic Cosubstrates," *Chemosphere*, 38 (6) 1323-1330 (1999).

Publications in Protein Separations and Purification

- JP Tharakan and M Belizaire, "Comparison of Axial and Radial Flow Columns for Immunoaffintiy Chormatography of Factor IX," *Isolation and Purification*, 2, 103-112 (1996).
- JP Tharakan and M Belizaire, "Ligand Efficieny in Axial and Radial Flow Chormatography," *J. of Chromatography*, 702, 191-196 (1995).
- J Tharakan and V Ayers, "Ligand Distribution in Immunoaffinity Chromatography," *International Journal of Biochromatography*, August 1994.
- Tharakan, J and M Belizaire, "Protein Band Dispersion in Radial and Axial Flow Chromatography," *Journal of Liquid Chromatography*, 1994.
- Tharakan, J, and M Belizaire, "Comparison of Axial and Radial Flow Columns for Immunoaffinity Purification of Factor IX," *Isolation and Purification*, 2 (2), 1994.
- J Tharakan, F Highsmith, D Clark and W Drohan,"Physical and Biochemical Characterization of Five Commercial Resins for Immunoaffinity Purification of Factor IX," *J. of Chromatography*, 595, 103-111, 1992.
- FA Highsmith, T Regan, DB Clark, WN Drohan and JP Tharakan, "Evaluation of CNBr, FMP and Hydrazide Resins for Immunoaffinity Purification of Factor IX," *BioChromatography*, 12 (3), 418 (1992).
- C Orthner, RD Madurawe, T Morcol, J Tharakan, FA Highsmith and WH Vellander, "Comparison of Performance of Immunosorbents Prepared by Site-Directed or Random Coupling of Monoclonal Antibodies," *J. of Chromatography*, 558, 55, 1991.
- John Tharakan, David Clark and William Drohan, "Effect of Feed Flow Rate, Antigen Concentration and Antibody Density on Immunoaffinity Purification of Coagulation Factor IX," *J. of Chromatography*, 522, 153 (1990).
- W Velander, C Orthner, J Tharakan, R Madurawe, A Ralston, D Strickland, and W Drohan,"Process Implications for Metal-Dependent Immunoaffinity Interactions," *Biotechnology Progress*, 5, 119 (1989).
- J Tharakan, D Gee and D Clark, "A Semi-Continuous Method for Purification of Factor IX from Human Blood Plasma," *Vox Sanguinis*, 57, 233 (1989).

Publications in Cell Culture and Bioreactors

- JP Tharakan and PC Chau, "Modeling and Analysis of Radial Flow Mammalian Cell Culture," *Biotechnology and Bioengineering*, 29, 657 (1987).
- JP Tharakan, A Lucas, and PC Chau, "Hybridoma Growth and Antibody Secretion in Serum-supplemented and Low-protein Serum-Free Media," *J. of Immunological Methods*, 94, 225 (1986).
- JP Tharakan and PC Chau, "Operation and Pressure Distribution of Immobilized Cell Hollow Fiber Bioreactors," *Biotechnology and Bioengineering*, 28, 1064 (1986).
- JP Tharakan and PC Chau, "A Radial Flow Hollow Fiber Bioreactor for the Large Scale Culture of Mammalian Cells," *Biotechnology and Bioengineering*, 28, 453 (1986).
- JP Tharakan, SL Gallagher and PC Chau, "Hollow Fiber Bioreactors for Mammalian Cell Culture," in *Upstream Processes: Equipment and Techniques*, (*Advances in Biotechnological Processes*, **7**) A. Mizrahi, Ed., June 1988.
- MC Glassey, JP Tharakan and PC Chau, "Serum Free Hybridoma Culture and Monoclonal Antibody Production," *Biotechnology and Bioengineering*, 32, 1015 (1988).

PATENT APPLICATIONS:

- "A Radial Flow Hollow Fiber Bioreactor for High Density Mammalian Cell Culture," US Patent Application 1987 [***Applicant: University of California***]
- "Immunoaffinity Purification Process for High Purity Factor IX," US Patent Application, 1989 [***Applicant: American Red Cross***]

REVIEWED PROCEEDINGS PAPERS, ABSTRACTS AND RESEARCH LETTERS:

Environmental Education and Appropriate Technology

- J. Tharakan, "Student-Centered Community-Based Service Learning – The Experience of Engineers Without Borders Howard University Chapter and Opportunities for Incorporation into Regular Curricula," Oral Presentation, *82nd Annual National Technical Association Conference,* Washington, DC, September, 2010.
- J.Tharakan, "Student-Centered Community-Based Service Learning: Connecting Scholarship, Teaching and Service,", *Faculty Authors Appreciation Keynote Address*, Howard University, Washington, DC, April 2009.
- J. Tharakan, "Appropriate Technology as a Core Engineering Education Outcome," *Proc. 10th UICEE International Conference on Engineering Education,* Bangkok, Thailand, March 2007.
- J.Tharakan, "Appropriate Technologies for Water Use and Conservation in Public Health," *Proc.2nd Intl.Conf.Appropriate Technology, July 2006*, National University of Science and Technology, Bulawayo, Zimbabwe, pp 87 – 92 (2006).
- J. Tharakan, "Educating Engineers in Appropriate Technology for Development," *Proc. 9th UICEE Ann. Conf. Engineering Education,* Muscat, February 2006.
- J. Tharakan, *et al.*, "Broadening Horizons for our Students: An Elective Seminar Course on Ethics and Philosophy of Appropriate Technology," *Proc. 8th UICEE Ann. Conf. Engineering* Education, Z. Pudlowski (ed), pp. 353, UICEE Press, Melbourne, Australia, 2005.

- J. Tharakan, "Appropriate Technology and Water Availability and Use: Impact on, and Implications for, Land Reform," *Proc. 1st Intl. Conf. Appropriate Technology, National University of Science and Technology*, Bulawayo, Zimbabwe, pp.97-104 (2004).
- Chen, Philip and J. Tharakan, "Leveraging the NASA Administrator's Fellowship Program (NAFP) to Enhance Graduate Chemical Engineering Education at Howard University," *Proceedings of the American Society of Engineering Education Annual National Meeting,* Salt Lake City, UT, Session 2470, Paper 4 (2004).
- J.P. Tharakan, "Teaching Environmental Engineering Students Ethics, Law and Policy," *Proceedings American Society of Engineering Education 2002 Annual Meeting*, Albuquerque, New Mexico, June 2001.
- J. Tharakan, "Incorporating Environmental Ethics, Environmental Justice and Environmental Law and Policy into an Elective course on Fundamentals of Environmental Engineering," in F. Padron (ed) *Proceedings of the XVIII InterAmerican Congress on Chemical Engineering*, CD-ROM Publication, San Juan, PR (1998).

Environmental Biotechnology

- UU Moses and JP Tharakan, "An Investigation of Biotransformation and Bioaccumulation of Polychorinated Biphenyls (PCBs) in Vermicompost Systems with Eisenia foetida Earthworms," *Proceedings, 1st International Conference on Environmental Pollution, Restoration and Management,* Ho Chi Minh City, Vietnam, March , 2010.
- J Tharakan, "Biological Transformation Of Polychlorinated Biphenyls (PCBs) In Hazardous Sludge," *American Society of Microbiology, International Workshop on Bioremediation, BITS-Pilani Goa, India*, January 8, 2010.
- UU Moses and JP Tharakan, "An Investigation of Biotransformation and Bioaccumulation of Polychorinated Biphenyls (PCBs) in Vermicompost Systems with Eisenia foetida Earthworms," *Proceedings, 6th International Chemical Engineering Congress and Exhibition* Kish Island FTZ, Iran, *To be Presented: November 16 – 20, 2009.*
- J Tharakan, "Potential for Algal Biomass as a Sustainable Resource for Energy Production and Environmental Remediation," *International Conference on Algal Biomass, Resources and Utilization (ICABRU 2009):*Krishnamurti Institute of Algology, Chennai, India, July 27th to 30th, 2009.
- J Tharakan, "Decentralized Renewable Energy Systems as a Core Rural Development Policy," Proceedings *Symposium on Anaerobic Degradation and Renewable Energy Through Microbes,* Birla Institute of Science and Technology, Goa, India, January 13 – 15, 2009.
- Tharakan, J., and Ismail S., "Biological Methods for Waste Treatment and Management," in Tharakan, J. (ed) *Proceedings of the Symposium on Biological Methods of Waste Treatment and Management in South India*, Chennai, India, February 2007.
- Lashley, L.A., S. Mischke, D.Zhang, C. Rugh, J. Tharakan and S.K. Dutta, "Microbial Community Structure Analysis of Three PCB Contaminated Soils and Alfaalfa Rhizospheres Using High Throughput 16SrDNA T-RFLP Technology," *Proc.Mid-Atlantic Plant Molecular Biology Conf.* Beltsville, MD, July 2006.
- Tharakan, J., "Biological Transformation of PCBs in Hazardous Sludge," *Proc.Envirotech 2006, Int'l Seminar on Environmental Biotechnology,* Chennai, India, July 2006.

- J. Tharakan, "Application of Microbes and Earthworms for the Biological Remediation of Polychlorinated Biphenyl Contaminated Sludge," *Proc. Jordan International Chemical Engineering Conference, 2005 (JCIEC05)*, Amman, Jordan, September 2005.
- J. Tharakan, D. Tomlinson, A. Addagada and A. Shafagati, "Biotransformation of PCBs in Contaminated Sludge: Use of Novel biological Technologies," *Proc. 1st Intl. Conf.Env.Sci.Tech.,*, New Orleans, LA, American Academy of Science Press, January 2005.
- D. Tomlinson, A. Addagada, A. Shafagati and J. Tharakan, "Biotransformation of a SUPERFUND Site's PCB-Contaminated Sludge Using Cycling Anaerobic-Aerobic Bioreactors," *Proceedings of the Fourth International Conference, Remediation of Chlorinated and Recalcitrant Compounds*, Monterey, CA, May 2004.
- J.P.Tharakan, E.Sada, R. Liou and R.C.Chawla, "Transformation of Aroclor by Indigenous and Inoculated Microbes in Slurry Reactors," in Alleman and Leason (eds) *In Situ and On Site Bioremediation:The Fifth International Symposium Proceedings*, Batelle, Columbus OH (1999).
- J.P.Tharakan, and J. Gordon, "Effect of Structurally Similar and Non-Aromatic Cosubstrates on the Cometabolic Biotransformation of TNT," in Suri and Christensen (Eds.) *Proceeding of the 30th Mid-Atlantic Industrial and Hazardous Waste Conference*, Technomic Publishing Co., Lancaster, PA, 142-150 (1998).
- Sada, E., R.C. Liou, J.P. Tharakan, and R.C. Chawla, "Cometabolic Biotransformation of PCBs in Soil-Slurry Reactors Using Terpenes and Biphenyl as Cosubstrates with *C.testosteroni* and *R.erythropolis*," in Suri and Christensen (Eds.) *Proceeding of the 30th Mid-Atlantic Industrial and Hazardous Waste Conference*, Technomic Publishing Co., Lancaster, PA, 167-176 (1998).
- R.Liou, J.H.Johnson, and J.P.Tharakan, "Anaerobic Dechlorination and Aerobic Biodegradation of PCBs in Soil Columns and Slurries," in Boardmen (Ed.) *Proceedings of the 29th Mid-Atlantic Industrial and Hazardous Waste Conference*, Technomic Publishing Co., Lancaster, PA, 414-423 (1997).
- B.S.Reis, J.P.Tharakan, and R.C. Chawla, "Investigation of the Use of Terpenes as Cosubstrates in the Cometabolic Biodegradation of PCBs,"*Proc.29th Mid-Atlantic Ind.Haz.Was.Conf. July 1997*, Technomic Publishing Co., Lancaster, PA (1997).
- J.Tharakan, B.Y.Philpot, and R.C. Chawla, "Biphenyl Supported Cometabolic Biodegradation of PCBs by *Commonas testosteroni*," in G. Boardman (ed) *Proc.29th Mid-Atlantic Ind.Haz.Was.Conf. July 1997*, Technomic Publishing Co., Lancaster, PA (1997).
- J. Tharakan, G. Welsh and J. Johnson, "Investigation of the Biotransformation of TNT by a *Rhodococcus sp.*" *Proc. 27th Mid-Atlantic Hazardous Waste Symposium*, Technomic Publishing, Lancaster, PA 203-213 (1995).

Protein Separation and Purification

- Tharakan, J.P**.** and W. Drohan,"Immune Adsoprtion Chromatography for Protein Purification," *Proceedings of the 17th International Symposium on Blood Transfusion*, Kluwer Academic Publishers, Boston, September, 1992.
- F.A. Highsmith, T. Regan, D.B. Clark, W.N. Drohan and J.P. Tharakan, "Evaluation of CNBr, FMP and Hydrazide Resins for Immunoaffinity Purification of Factor IX," *BioChromatography*, 12 (3), 418 (1992).

- J.P. Tharakan, S.I. Miekka, H.E. Behre, B.D. Kolen, D.M. Gee, W.N. Drohan and D.B. Clark, "Large Scale Process Development for Immunoaffinity Purification of Factor IX," *Throm. Haem.*, 62, 56, (1989).
- J.P. Tharakan, S.I. Miekka, H.E. Behre, B.D. Kolen, D.B. Clark, and W.N. Drohan, "Quantitation of Mouse IgG and Its Removal from Immunoaffinity Purified Human Coagulation Factor IX," *Throm. Haem.*, 62, 214, (1989).

Cell Culture and Bioreactors

- J. Young, D-W. Zhang, J. Tharakan, L. Jenkins, R. Collins, and W. Drohan,"Human Plasma Derived Media Supplement Supports Antibody Production by Hybridoma Cells," *J. of Tissue Culture Methods*, 14 (1), 39, 1992.
- J.P. Tharakan, S.L. Gallagher and P.C. Chau, "Hollow Fiber Bioreactors for Mammalian Cell Culture," in *Upstream Processes: Equipment and Techniques*, (*Advances in Biotechnological Processes*, **7**) A. Mizrahi, Ed., June 1988.
- S.L. Gallagher, J.P. Tharakan, and P.C. Chau, "An Intercalated-Spiral Wound Hollow Fiber Bioreactor for the Culture of Mammalian Cells," *Biotechnology Techniques*, 1, 91 (1987).
- J.P. Tharakan and P.C. Chau, "IgG Production Kinetics in Serum-Free Media," *Biotechnology Letters*, 8, 529 (1986).
- J.P. Tharakan and P.C. Chau, "Serum Free Fed Batch Production of IgM," *Biotechnology Letters*, 8, 457 (1986).
- J.P. Tharakan and P.C. Chau, "Production of IgG and IgM from Murine Hybridomas Adapted to Newborn Calf Serum," *Biotechnology Letters*, 8, 85 (1986).
- J.P. Tharakan and P.C. Chau, "Cell Number Estimation via Fluorescence Measurement," *Biotechnology Letters*, 6, 793 (1984).

EXAMPLES OF RECENT THESES DIRECTED AND CO-ADVISED:

- "Investigation of the Biotransformation of PCBs Using Eisenia Foetida Earthworm Species," Moses Ucheoma, Thesis Advisor, December 2014.
- "Bioremediation of PCB Contaminated SUPERFUND Site Media with Anaerobic/Aerobic Cycling Bioreactors," Dave Tomlinson, Thesis Advisor, MSChE May 2005.
- "Vermicomposting for Bioremediation of PCB Contaminated SUPERFUND Site Media," Anuradha Addagada, Thesis Advisor, MSChE December 2004.
- "Design of Poly (Lactide-Co-Ethylene Glycol) Copolymers for Delivery of Bioactive Agents," O. Elizabeth Alabi, Thesis Committee Chair; MSChE May '04.
- "Adsorption of Cu (II), Zn (II) and Pb (II) Ions by a Bioretention Soil Media," J. Bissouma Saquiequois, Thesis Committee Chair; MSChE May '04.
- "Surface Interactions of THP-1 Monocytes/macrophages with Polymethylsiloxane," Sakhile Moyo Ross, Thesis Committee Chair, Defended December 2003.
- "Stimulation of Denitrification During Organic Carbon Oxidation by Heterotrophic Bacteria," Odoe Kanayo, Thesis Committee Chair; MSChE August '04.
- "Increasing Rejection in Nanofiltration Membranes by Ion Implantation," J. Femi Abitoye, Thesis Committee Chair; MSChE August '04.
- "Cometabolic Biotransformation of TNT," Janice Gordon, Thesis Advisor, MSChE

September 1997.

- "Cometabolic Biotransformation of PCBs by *Comomonas Testosteroni*, VP 44", Brigette Philpot, M.E. Civil Engineering, Thesis Advisor, December 1997.

EXAMPLES OF COURSES DEVELOPED AND OFFERED

- Blackboard Use for Engineering and Technology Faculty
- Philosophy and Ethics of Appropriate Technology
- Fundamentals of Hazardous Waste Treatment I: Biological Processes
- Fundamentals of Hazardous Waste Treatment II: Applications of Biological Processes
- Bioprocess Engineering
- Environmental Justice
- Kinetics and Reactor Design – Undergraduate and Graduate
- Introduction to Chemical Engineering Design
- Introduction to Engineering
- Chemical Engineering Material Balances
- Chemical Engineering Energy Balances
- Chemical Engineering Thermodynamics
- Fundamentals of Environmental Engineering

COLLABORATORS AND CO-EDITORS.

1. Arun Patil, Editor in Chief, *International Journal of Quality Assurance in Engineering and Technology Education (IJQAETE) (Editorial Board Member)*
2. Dzidzeniyo, Vcitor, Fortunak, Joseph, Hansem Ed, Trimble, John (All of Howard University, Co-Editors) *Proc. 4th Int'l Conference on Appropriate Technology*, Accra, Ghana, November 2010.
3. V. Sivasubramanian, *International Conference on Algal Biomass, Resources and Utilization (ICABRU 2009):*Co-Author, Krishnamurti Institute of Algology, Chennai, India
4. S. Murti, (Birla Institute of Science and Technology, Goa, India) *Symposium on Anaerobic Degradation and Renewable Energy Through Microbes,* January 2009.
5. Verharen, C (Howard University, Co-Author) "Barefoot Ethics: Social Justice Through An Appropriate Technology Checklist," 2010. Various papers on Science and Engineering Ethics.
6. John Trimble, (Co-editor), *Proc. 3rd Int'l Conference on Appropriate Technology*, Kigali, Rwanda, November 2008 (ISBN 978-1-60725-559-8), Pretoria, South Africa, November 2012 (ISBN – 978-160725-562-8).
7. Sultan Ismail (The New College, Chennai, India) Co-Editor/Co-PI, *Proceedings of Symposium on Biological Methods of Waste Treatment and Management in South India,* February 2007.
8. P.C. Chau, (University of California, San Diego) Co-Author, P.I.

SYNERGISTIC ACTIVITIES

- Demonstration of high density culture of mammalian cells in a unique radial flow hollow fiber bioreactor (Pao Chau, University of California, San Diego, co-author and PI – **University of California Regents Patent Application**)
- Development of immunoaffinity processes for the sequential purification of individual blood proteins/factors from human plasma. (Dave Clark and William Drohan, American Red Cross, Co-PI's; **American Red Cross Patent Application**)
- Development of bioremediation strategy for polychlorinated biphenyl contaminated sludges using cycling microbial cycling anaerobic-aerobic biodegradation process. (Ramesh Chawla and James Johnson, Howard University, Co-PI's)
- Conducting Series of International Conferences on Appropriate Technology (*2004, Zimbabwe; 2006, Zimbabwe; 2008 Rwanda; 2010, Ghana; 2012 Republic of South Africa; 2014 Kenya, 2016 Zimbabwe)* (John Trimble, Charles Verharen, Howard University, Co-PIs, Co-Editors and Co-Authors on Peer-Reviewed Edited Proceedings for each)
- Development of Independent Study Courses based on Appropriate Technology Service projects for students (Best Presentation/Paper Award,*Int'l Engineering and Technology Education Conference,* January 2011).
- Growing graduate research in Biotechnology at The New College, Chennai (Sultan Ismail, Former Head of the Post Graduate Department of Biotechnology).
- Collaborations with Cochin University of Science and Technology on Appropriate and Sustainable Technology, Kochi (Madhu Gopal, Dean, School of Engineering).
- Collaborations with SCMS College of Engineering and Technology, Karutty, Kerala (Sunny George, Professor and Head of Department of Environmental Engineering).

Curriculum Vitae

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University of Illinois at Chicago
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Educational Background

Ph.D. (Environmental Engineering), University of Notre Dame
Dissertation title: "The Stabilization of Ferrous Iron by Natural Organic Compounds in Oxygen-Rich Environments" Advisor: Dr. Philip C. Singer

M.S. (Environmental Health Engineering), University of Notre Dame

B.S. (Civil Engineering), University of Notre Dame

Professional Societies

American Society of Civil Engineers
American Chemical Society, Member, Division of Environmental Chemistry
Association of Environmental Engineering and Science Professors
International Society for Industrial Ecology
American Association for the Advancement of Science
Chi Epsilon
Sigma Xi
Tau Beta Pi

Registration

Registered Professional Engineer, State of Indiana (PE60017316)

Honors/Distinctions/Professional Activities

Chair, 9th Biennial Conference of the International Society for Industrial Ecology, 2017
Member, USEPA Chartered Science Advisory Board (2003-2009)
Member, USEPA Science Advisory Board, Environmental Engineering Committee (2000-2003), Consultant (1998-2000).
Editorial Board, Environmental Justice (2008-present)
Guest Editor, Challenges in Industrial Ecology (2012-2013)
Keynote Speaker, NitroEurope Annual Conference (2009)
Gordon Research Conference, Industrial Ecology, invited speaker (2008)
Council Member, International Society for Industrial Ecology (2007-2010)
Board of Directors, World Water Watch (2005-present)
Diplomate Environmental Engineer, American Association of Environmental Engineers, Election by Eminence (2002)

Journal of Environmental Engineering, Editor (1994-1996), Associate Editor, (1987-1994), Past Editor (1996-1998)
Albert D. Merrill Award, Dept. of Civil and Environmental Engineering, Clarkson University (1993)
Chapter Honor Member, Chi Epsilon (1999)
Editorial Board, *Environmental Technology* (1989-1994)
Editorial Board, *Journal of Contaminant Hydrology* (1990-2005)
Editorial Board, *Issues in Environmental Science and Technology* (1998-2000)
Invited Participant, "Diversity in the New Millennium", AIChE Meeting, Dallas, TX (October 1999)
Invited Participant, "Workshop on Environmental Engineering Education, Universidad Nacional Del Litoral, Santa Fe, Argentina (June 1998)
Symposium Organized, "Urban Biosolids Management," 1998 National Conference on Environmental Engineering, Chicago, IL (1998)
Organizing Committee, 70th Colloid and Surface Science Symposium (1996)
Dept. of Energy University Research Instrumentation Program Review Panel (1985), Chairman Biomedical and Environmental (1987, 1988)
Chairman, American Geophysical Union Symposium, "Coupling of Geochemical and Hydrologic Models for Subsurface Solute Transport," Baltimore, MD (1985)
Member, Electric Power Research Institute Solid Waste Review Committee (1981-1982)
Member, Waste Combustion Working Group, New York State Solid Waste Combustion Institute (1989-1992)
Member, Technical Advisory Panel, Monroe County, NY (1991-1992)
Member, Trace Inorganic Research Committee, American Water Works Association (1980-1990)
Member, Environmental Protection Agency Chemistry and Physics Proposal Review Panel (1980-1999)
Member, USEPA Exploratory Research Centers Review Panel and Site Review Team (1991, 1996)
Member, Groundwater Committee, American Geophysical Union (1984-1986)
Invited Participant, Scientific Committee on Problems in the Environment (SCOPE) Workshop on Groundwater Contamination (1989)
Member, Review Panel USEPA Distinguished Visiting Scientist Program (1986-1987)
Federal Water Quality Administration Pre-Doctoral Fellow (1970-1972)

Reviewer of Proposals: Dept. of Energy, National Science Foundation, U.S. Environmental Protection Agency, New York State Center for Hazardous Waste Management, National Research Council (Canada)

Manuscript Reviewer: World Resources Institute, *Journal of Industrial Ecology*, *Journal of Cleaner Production*, *Water Research*, *J. Environmental Engineering*, *Environmental Science and Technology*, *Journal Water Environment Federation*, *Soil Science Society of America Journal*, *Advances in Chemistry Series* (ACS), *Journal of Environmental Quality*, *Journal of Colloid and Interface Science*, *Chemical Speciation and Bioavailability*, *Industrial and Engineering Chemistry Research*, *Journal of Contaminant Hydrology*

Book Reviewer: John Wiley & Sons, National Academy of Engineering

Professional Experience

January, 2002—present, Director, Institute for Environmental Science and Policy, and Professor of Civil and Materials Engineering, University of Illinois at Chicago, Chicago, IL

July, 1999 – December, 2001, Bayard D. Clarkson Distinguished Professor, Clarkson University, Potsdam, NY.

July, 1999 – December, 2001, Director, Center for Environmental Management, Clarkson University, Potsdam, NY.

July, 1996 – June, 1999, Chair, Department of Civil and Environmental Engineering, Clarkson University, Potsdam NY.

January, 1985 – June, 1999, Professor of Civil and Environmental Engineering, Clarkson University, Potsdam, NY.

August, 1988 – December, 1988, Visiting Professor, School of Civil and Environmental Engineering, Cornell University, Ithaca, NY.

May, 1979 – December, 1984, Associate Professor of Civil Engineering, University of Notre Dame, Notre Dame, IN.

September, 1983 – June, 1984, Visiting Fellow, Dept. of Civil Engineering, Princeton University, Princeton, NJ.

August, 1980 – December, 1984, Institutional Director, U.S. EPA Industrial Waste Elimination Research Center, A Consortium of the University of Notre Dame and Illinois Institute of Technology.

August, 1973 – May, 1979, Assistant Professor of Civil Engineering, University of Notre Dame, Notre Dame, IN.

Summer, 1978, Faculty Research Participant, Analytical Chemistry Division, Oak Ridge National Laboratory, Oak Ridge, TN.

September, 1970 – August, 1972, Federal Water Quality Administration pre-doctoral fellow.

June, 1969 – August, 1970, Federal Water Quality Administration trainee.

February, 1969 – May, 1969, Teaching Assistant, Department of Civil Engineering, University of Notre Dame.

June, 1968 – February, 1969, Associate Engineer of Structural Technology, Boeing Corporation, Vertol Division, Philadelphia, PA.

Service to the University

Member, Faculty Senate, ND, 1974-77, 1980-83, CU, 1985-88, 1991-92.
Member, Graduate Council, ND, 1981-84.
Member, Committee on Appointments and Promotions, Dept. of Civil Engineering, ND, 1979-1982.
Member, University Committee on Education for Justice, ND, 1980-82.
Chairman, Environmental Science and Engineering Matrix Group, CU, 1987-88.
Member, Undergraduate Committee, Dept. of Civil and Environmental Engineering, CU, 1989-91.
Member, University Graduate and Research Committee, CU,1989-92, 1995-96.
Chairman, Graduate Committee, Dept. of Civil and Environmental Engineering, CU,1991-96.
Member, Dean of Engineering Search Committee, UIC, 2004
Member, Committee on Centers and Institutes, UIC, 2004.

Courses Taught

Undergraduate: Sustainability and Policy, Environmental Engineering Systems, Environmental Engineering Design, Water Quality Engineering, Hazardous Waste Management.

Graduate: Industrial Ecology, Environmental Systems Analysis, Introductory and Advanced Aquatic Chemistry, Contaminant Transport in Groundwater, Biogeochemical Cycles in Natural Waters, Environmental Physico-Chemical Systems.

Consulting (Major Activities Only)
Oak Ridge National Laboratory
West Virginia University
Electric Power Research Institute
Clyde E. Williams and Associates
Ten-Ech Environmental Consultants
Indiana University
TRC Environmental Consultants
Allied Corporation
Dames and Moore, Inc.
IBM Corporation
Atlantic Environmental Services
U.S. Environmental Protection Agency, Regions II and V
Eastern Utilities
Gas Research Institute
Malcolm Pirnie, Inc.
Remediation Technologies, Inc.
Baltimore Gas and Electric Company
Occidental Chemical Company
Enthone/OMI, Inc.
Wisconsin Electric Power Company
Alcoa
DuPont

Research Experience
Principal Investigator, "The Fifth Symposium on Industrial Ecology for Young Professionals: Science in Support of Sustainable and Resilient Communities", National Science Foundation, February 1, 2017-January 31, 2018, $50,000.

Co-Principal Investigator (with P. Westerhoff, H. Fairbrother, J. Hutchison, D. Plata, and J. Zimmerman), "NCCLC: Life Cycle of Nanomaterials", US Environmental Protection Agency, September 1, 2013-August 31, 2018, $5,000,000.

Co-Principal Investigator (with I. Cruz, N. Ai, S. Derrible, and S. Dorevitch), "CyberSEES: Type 2: Data Integration for Urban Metabolism", National Science Foundation, September 1, 2013-September 30, 2017, $600,000.

Co-Principal Investigator (with S. Kaplan), "Identifying Best Management Practices and Providing Technical Assistance for Sustainable Brownfields Redevelopment," US Environmental Protection Agency, October 1, 2008-December 31, 2013, $900,000.

Principal Investigator, "NSF-EPA Workshop on Life Cycle Aspects of Nanoproducts, Nanostructured Materials, and Nanomanufacturing: Problem Definitions, Data Gaps, and Research Needs, August 1, 2009-July 31, 2010, $80,000.

Co-Principal Investigator, "Regional Socioeconomic and Environmental Impacts of Alternative Biofuel Pathways", Energy Biosciences Institute, University of Illinois, August 16, 2007-August 15, 2010, $315,924.

Principal Investigator, “Life Cycle Assessment of Nanomanufacturing Technologies” National Science Foundation, October 1, 2006-September 30, 2009, $200,000.

Principal Investigator, “Life Cycle Analysis of Biolubricants for Aluminum Rolling,” Environmental Protection Agency, Technology for a Sustainable Environment Program, November 1 2003-October 31, 2006, $250,000.

Principal Investigator, “Life Cycle and Economic Impacts of Bio-based Production,” National Science Foundation, BES-0329359, August 31, 2003—August 30, 2004, $99,691.

Principal Investigator, “Comparative Life Cycle Impacts of Bio- and Petro-based Lubricants,” National Science Foundation, PREMISE Phase II Program, July 1, 2004--June 30, 2008, $599,600.

Principal Investigator, “Comparative Life Cycle Impacts of Bio- and Petro-based Lubricants,” National Science Foundation, DMI-0225912 (Premise Phase I), August 31-2002— August 30, 2003, $99,452.

Principal Investigator, “Symposium on Sustainability,” National Science Foundation, BES-0105321, March 15, 2001-February 28, 2002, $20,000.

Principal Investigator, “Environmental Manufacturing Management,” National Science Foundation Integrative Graduate Education Research and Training Program (IGERT), DGE-9870646, July1, 1998 – June 30, 2005, $1,949,201.

Principal Investigator, “Investigation of Methods for Perchlorate Destruction in Aqueous Streams,” American Water Works Research Foundation, January 15, 1999 – May 15, 2001, $100,000.

Principle Investigator, “Identification of Cyanide Species in MGP Purifier Materials”, Ishinc, April 1, 2000-August 31, 2001, $27,000.

Principal Investigator, “A Thermodynamic Basis for LCA and Optimization of Industrial Processes for Environmental Performance,” National Science Foundation (Lucent Fellowship), October 1, 1998 – September 30, 2000, $99,781.

Principal Investigator, “Optimization Studies of Oil Recovery and Groundwater Treatment at the Spring Gardens Site,” Electric Power Research Institute/Baltimore Gas and Electric Company, June 1, 1998 – December 31, 1999, $93,100.

Principal Investigator, “Comparison of Cyanide Analysis Methods,” Electric Power Research Institute,” June 1, 1998 – December 31, 1998, $8,866.

Co-Principal Investigator, “Cyanide Formation and Fate in Complex Effluents and Its Relation to Water Quality,” Joint Project with Malcolm Pirnie, Carnegie Mellon University, Alcoa, EPRI, GRI, Michigan Consolidated Gas Co., Metropolitan Water Reclamation District of Greater Chicago, Massachusetts Water Resources Authority, East Bay Municipal Utility District, City of Sunnyvale, and the City of Phoenix, funded by the Water Environment Research Foundation, July1, 1998 – June 30, 2001, $1,449,700.

Co-Principal Investigator, “Acquisition of Analytical Equipment for the Analysis of Aqueous Contaminants,” National Science Foundation, August 1, 1995 – July 31, 1998, $165,956.

Co-Principal Investigator, “Controlling Contaminant Mobility During Cleanup,” Great Lakes Protection Fund, September 1, 1995 – August 31, 1998, $377,000.

Principal Investigator, “Photochemical Treatment of Cyanide in Aluminum Pot-Lining Leachates,” Alcoa Technical Center, May 1, 1995 – June 30, 1997, $80,000.

Principal Investigator, “Optimization Studies of the BG&E Spring Gardens Groundwater Oil Recovery/Remediation Facility,” Baltimore Gas and Electric Co., Electric Power Research Institute, January 1, 1995 – June 30, 1997, $197,951.

Co-Principal Investigator, “Energy Conservation Technology Assistance and Technology TransferProgram,” New York State Energy Research and Development Authority, January 1, 1995 – July 31, 1997, $150,000.

Principal Investigator, “Photocatalytic Treatment of Iron Cyanides,” New York State Science and Technology Foundation, Centers for Advanced Technology Program, July 1, 1992-June 30, 1996, $75,140.

Co-Principal Investigator, “Subsurface Flow Wetland Treatment System,” New York State Energy Research and Development Authority, October 1994 – October 1996, $362,633.

Co-Principal Investigator, “Pelletization and Incineration of Kraft Process Pulp and Paper Sludge: Operational Feasibility and Chemical Mass Balance,” New York State Energy Research and Development Authority/James River Corp., November 3, 1993 – October 31, 1996, $344,973.

Principal Investigator, “Field Demonstration of Thermal Desorption for the Remediation Of Manufactured Gas Plant Sites,” New York State Center for Hazardous Waste Management and Niagara Mohawk Power Corp., August 1, 1993 – January 31, 1995, $91,481.

Principal Investigator, “Biotechnology of Metal Ion Biosensors,” Grant N00014-91-5-1520, Office of Naval Research, June 1, 1994 – August 31, 1995, $47,707.

Principal Investigator, “Long Term Fate of Land Applied Wastewater Sludge,” New York State Energy Research and Development Authority, August 1, 1992 – December 31, 1996, $660,785.

Co-Principal Investigator, “Influence of Dynamic Fluid-Particle Interactions on Contaminant Phase Partitioning in Aqueous Systems,” Grant. R-818952, U.S. Environmental Protection Agency, September 15, 1992 – September 14, 1995, $458,011.

Principal Investigator, “Cyanide Characterization in Pot-Lining Wastes and Leachates,” Alcoa Technical Center, January 1 – December 31, 1994, $45,586.

Principal Investigator, “Studies on the Environmental Characteristics of Purifier Wastes at Manufactured Gas Plant Sites,” Gas Research Institute, June 1, 1992 – December 31, 1993, $20,000.

Co-Principal Investigator, “Anaerobic Pretreatment of Sewage: Optimization Studies,” New York State Energy Research and Development Authority, June 1, 1991 – February 28, 1995, $493,022.

Principal Investigator, “Studies on the Treatment of Cyanide-Bearing Wastes at Manufactured Gas Plant Sites,” Institute of Gas Technology, August 1992 – June 30, 1994, $92,740.

Co-Principal Investigator, “Precipitation and Colloidal Properties of Ammonium Fluoride Mixed Precipitates as Applied to Semiconductor Wastewaters,” New York State Center For Hazardous Waste Management, July 1, 1992 – June 30, 1993, $90,385.

Principal Investigator, “Measurement, Characterization, and Treatment of Cyanide-Bearing Wastes at Manufactured Gas Plant Sites,” New York State Center for Hazardous Waste Management/Gas Research Institute, July 1, 1990 – June 30, 1992, $156,940.

Principal Investigator, “Field Analysis of Soils for PAH Concentrations Using UV-Fluorescence Spectroscopy,” Gas Research Institute, May 1, 1990 – December 31, 1992, $77,961.

Principal Investigator, “Characterization of Leachates from Municipal Incinerator Ash Materials,” New York State Solid Waste Combustion Institute, June 1, 1989 – June 30, 1992, $218,657.

Principal Investigator, “Development of Oxides of Iron as Sorbents for the Control, Separation, and Recovery of Inorganic Hazardous Waste Components,” New York State Center for Hazardous Waste Management, January 1, 1989 – December 31, 1989, $52,278.

Principal Investigator, “Development of Oxides of Iron as Sorbents for the Control, Separation and Recovery of Inorganics Contained in Industrial Process and Waste Streams,” Industrial Waste Elimination Research Center, February 1, 1987 – December 31, 1991, $172,904.

Principal Investigator, “Iron Oxide Adsorbents: Design Optimization Studies,” Cornell National Supercomputer Facility, July, 1989 – November 1991, 20 Service Units.
Principal Investigator, “Iron Oxide Separation Media,” Alcoa Technical Center, April 1987 – March 1989, $20,000.

Co-Principal Investigator, “Knowledge-Base Expert Systems in Water Utility Operation and Management,” AWWA Research Foundation, December 1, 1987 – March 31, 1989, $32,573.

Co-Principal Investigator, “Flux and Exposure of In-Place Contaminants Due to Resuspension,” Univ. of California, Santa Barbara, #VB54899, July1, 1988 – June 30, 1991, $57,500.

Co-Principal Investigator, “Exposure and Biological Effects of In-Place Pollutants: Adsorption/Desorption Kinetics of Detroit River In-Place Pollutants,” U.S. EPA Project CR812570, October 1, 1985 - September 30, 1987, $150,000.

Co-Principal Investigator, “Groundwater Chemistry,” Clarkson University, Division of Research, $9,500.

Principal Investigator, “Multi-Solute Subsurface Transport Modeling for Energy Solid Wastes,” Dept. of Energy #DE-AC02-79EV10253, January 1, 1982 – August 31, 1986, $506,119.

Principal Investigator, “Hydrodynamic and Chemical Modeling of Heavy Metals in Ash Pond Leachates,” DOE# DE-AC02-79EV10235, July 1, 1979 – December 31, 1981, $240,262.

Principal Investigator, “Reaction Pathway of Sorbed Species at Solid/Aqueous Boundaries,” Industrial Waste Elimination Research Center – U.S. EPA Project 5-54688-ND-8302, January 1, 1984 - February 28, 1986, $52,632.

Principal Investigator, “The Effect of Speciation on the Sorptive Behavior of Metal Ions,” Industrial Waste Elimination Research Center – U.S. EPA Project #8203, January 1, 1992 – December 31, 1983, $173,776.

Co-Principal Investigator, “Potential for Coal-Related Groundwater Contamination in the Coastal Plain Soils of Maryland,” State of Maryland, Dept. of Natural Resources, September 1, 1982 – December 31, 1983, $79,854.

Principal Investigator, “Speciation of Transition Metals in Multi-Phase Environments,” Industrial Waste Elimination Research Center – U.S. EPA Project #8007, November 15, 1980 – November 14, 1981, $28,546.

Principal Investigator, “Biological Oxidation of Iron(II) by T. *ferrooxidans* in a Sequencing Batch Reactor,” U.S. Dept. of the Interior (Bureau of Mines), Project J0100079, May 1, 1980 – December 15, 1982, $130,271.

Principal Investigator, “Analysis and Assessment of Incinerated Municipal Sludge Ashes,” Environmental Protection Agency, EPA Grant R-806690-01, August 1, 1979 – December 31, 1980, $86,614.

Principal Investigator, “The Contamination of Groundwater by Heavy Metals from the Land Disposal of Fly Ash,” DOE Grant EY-76-02-2727, June 1, 1975 – September 30, 1979, $140,000.
Principal Investigator, “Interdisciplinary Evaluation of Eutrophic Lake Reclamation,” EPA Grant R-801245-02, June 1, 1976 – December 1977, $77,684.

Co-Principal Investigator, “Interdisciplinary Evaluation of Eutrophic Lake Reclamation,” EPA Grant R-801245-05-2, June 1, 1974 – May 31, 1976.

Principal Investigator, “The Use of Metal-Bearing Industrial Wastes for the Precipitation of Phosphorus in Tertiary Treatment Systems,” Office of Research and Sponsored Programs, University of Notre Dame, June 1, 1975 – May 31, 1976, $2,500.

Principal Investigator, “The Aqueous Chemistry of Polycyclic Aromatic Carcinogenic Agents, Office of Research and Sponsored Programs, University of Notre Dame, March 7, 1977 – April 30, 1978, $500.

Co-Principal Investigator, “Career Facilitation Training for Women to Enter Graduate Programs in Environmental Health Engineering and Science, “National Science Foundation Grant SMI76020449, September 1976 - August, 1978.

Principal Investigator, “Comparative Stability of Heavy Metals in Wet Oxidation Sludge,” Whirlpool Corporation Design Project Task #18, June 1, 1977 – September 1 1977, $10,000.

Project Consultant, “Joint Training Environmental Engineering and Law,” EPA Grant T-900065-0, 1973 – 1975.

Principal Investigator, “Iron-Organic Matter Interactions in Natural Waters,” FWQA Research Fellowship #1-F1-WP-26, 602, 01, September 1, 1970 – August 1, 1972, $11,000.

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Grimes-Casey, H., T. Seager, C. Ruebeck, T. Theis, and A. Berardy (2010). “A Game-theoretic Model for Investigating Packaging Life Cycle Policy”, *Journal of Industrial Ecology* (submitted).

Khodadoust, A.P., P. Naithani, T.L. Theis, and I.P. Murarka (2011). “Leaching Characteristics of Arsenic from Aged Alkaline Coal Fly Ash Using Column and Sequential Batch Leaching”, *Industrial and Engineering Chemistry Research,* 50(4): 2204 – 2213.

Klein-Banai, C., and T.L. Theis (2011). An Urban University's Ecological Footprint and the Effect of Climate Change" *Ecological Indicators*, 11:857-860.

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Theis, T.L., B. Bakshi , R. Clift, D. Durham , V. Fthenakis , T. Gutowski , J. Isaacs , T. Seager , and M.R. Wiesner (2011). "A Life Cycle Framework for the Investigation of Environmentally Benign Nanoparticles and Products", *Physica Status Solidi* RRL **5** (9):312–317.

Galloway, J.N., T.L. Theis, O. Doering, V. Aneja, E. Boyer, K.G. Cassman, E.B. Cowling, R.R. Dickerson, W. Herz, D.L. Hey, R. Kohn, J.S. Lighty, W. Mitsch, W. Moomaw, A. Mosier, H. Paerl, B. Shaw, and P. Stacey (2011). U.S. Environmental Protection Agency Science Advisory Board. *Reactive Nitrogen in the United States: An Analysis of Inputs, Flows, Consequences, and Management Options - A Report of the EPA Science Advisory Board*. EPA-SAB-11-013, U.S. EPA Science Advisory Board, Washington, DC.

Brecheisen, T., and T.L. Theis (2013). "The Chicago Center for Green Technology: Life-cycle Assessment of a Brownfield Redevelopment Project", *Environ. Res. Lett.* **8**:015038.

Hicks, A., and T.L. Theis (2014). "Residential Energy Efficient Lighting Adoption Survey", *Energy Efficiency*, 7:323-333.

Hicks, A., and T.L. Theis (2014). "An Agent Based Approach to the Potential for Rebound Resulting from Evolution of Residential Lighting Technologies", *The International Journal of Life Cycle Assessment,* 19(2), 370-376.

Brecheisen, T., and T. Theis (2015) "Life-cycle Assessment as a Comparative Analysis Tool for Sustainable Brownfield Redevelopment Projects: Cumulative Energy Demand and Greenhouse Gas Emissions", Chapter 10 in *Assessing and Measuring Environmental Impact and Sustainability,* J. Klemes and H. Cabezas editors, Elsevier pp. 323-361.

Erisman, J.W., G. Brasseur, P. Ciais, N. van Eekeren, and T. L. Theis (2015). "Put People at the Centre of Global Risk management", *Nature*, 519:151-153 (12 March 2015).

Hicks, A.L., L.M. Gilbertson, J.S. Yamani, T.L. Theis, and J.B. Zimmerman (2015). "Life Cycle Payback Estimates of Nano-silver Enabled Textiles under Different Silver Loading, Release, and Laundering Scenarios Informed by Literature Review", *Environmental Science and Technology* 49 (13): 7529–7542.

Hicks, A., M. Zellner, and T. Theis (2015). "Emergent Effects of Residential Lighting Choices: Prospects for Energy Savings", *Journal of Industrial Ecology* 19(2): 285-295.

Galloway, J.N., T.L. Theis, and O.C. Doering (2015). "Managing Nitrogen Pollution in the US: a Success, a Challenge and an Action Plan", *Air and Waste Management Association: Environmental Management*, September 2015, 6-11.

Hicks, A.L., and T.L. Theis (2015). "A Comparative Life Cycle Assessment of Commercially Available Household Silver Enabled Polyester Textiles" *International Journal of Life Cycle Assessment* (accepted for publication).

Hicks, A.L., R.B. Reed, T.L. Theis, D. Hanigan, H. Huling, T. Zaikova, J.E. Hutchison, and J. Miller (2016). "Environmental of reusable nanoscale silver-coated hospital gowns compared to single -use, disposable gowns" *ES:Nano* (accepted for publication).

Chopra, S., and T.L. Theis (2017). "Comparative Cradle-to-Gate Energy Assessment of Indium Phosphide and Cadmium Selenide Quantum Dot Displays", *Environmental Science: Nano*, 4, 244-254.

Other Publications

Thomas, M.J., and T.L. Theis, (1975) "Colloid Chemical Properties of Chrome Hydroxides Applied to Metal Finishing Wastes*," Proc. 30th Industrial Waste Conference*, Purdue University, pp.1-34 (1975).

Theis, T.L., "An Evaluation of the Use of Fly Ash for Control of Phosphorus in an Eutrophic Lake," *Proc. Lake Management Conference,* Water Resources Research Center, Purdue University, pp.70-85 (1975).

Theis, T.L., (1975) "The Potential Trace Metal Contamination of Water Resources Through the Land Disposal of Fly Ash," 2nd National Conference on Complete Water Reuse, AIChE, pp.219-224.

Theis, T.L., J.J. Marley, and R.O. Richter, (1976) "Sorbitive Characteristics of Heavy Metals in Fly Ash-Soil Environments," *Proc. 31st Industrial Waste Conference*, Purdue University, pp.312-324.

Hayes, T.D., T.L. Theis, (1976) "Effects and Fate of Selected Heavy Metals on Anaerobic Digestion," *Proc. 31st Industrial Waste Conference*, Purdue University, pp. 157-173.

Theis, T.L., (1985) "Equilibrium and Kinetic Descriptions of Sorption Reactions on Hydrous Oxide Surfaces," pp. 60-100, *Proc. Seminar on Adsorption*, U.S. Environmental Protection Agency, EPA/600/85/122, Cincinnati, OH.

Theis, T.L., (1986) "Discussion Paper: Heavy Metals Removal, Pilot Scale Research on the Advanced Mexico Precipitation Process," in *Proc. International Symposium on Metal Speciation , Separation and Recovery*, pp. VII-93, Industrial Waste Elimination Research Center, Chicago, IL.

Theis, T.L., (1979) "Physical and Chemical Treatment of Lake Sediments," *Proc. National Conference on Lake Restoration,* Environmental Protection Agency, EPA-440/5-9-001, pp.115-120.

Theis, T.L., J.A. Ripp, and J.F. Villaume, (1989) "Physical and Chemical Characteristics of Unsaturated Pore Water and Leachate at a Dry Fly Ash Disposal Site," *Proc. 43rd Industrial Waste Conference*, Purdue University, pp. 161-172, Lewis Publishers.

Theis, T.L., (1989) "Transport of Trace Elements and Species in Groundwater," *Proc. International Symposium on processes Governing the Movement and Fate of Contaminants in the Subsurface Environment,* Stanford University, Stanford, CA.

Theis, T.L., A.G. Collins, P.J. Monsour, S.G. Pavlostathis, and C.D. Theis, (1991) "Analysis of Total Polyaromatic Hydrocarbon Using Ultraviolet-Fluorescent Spectrometry," pp. 805-809 in 2nd Int. Symposium on Field Screening Methods for Hazardous Wastes and Toxic Chemicals, USEPA Environmental Monitoring Systems Laboratory, Las Vegas, NV.

Theis, T.L., B.J. Alderman, and A.G. Collins, (1994) "Optimization Studies of Anaerobic Expanded Bed Pretreatment of Domestic Wastewater," *Proc. of the 1994 National Conference on Environmental Engineering,* ASCE, ed. by J.N. Ryan and M. Edwards, 289-296.

Invited Lectures

Purdue University, Water Resources Institute, Lake Management Meeting, 1975.
Michigan Lake and Stream Association, Annual Meeting, 1977.
Oak Ridge National Laboratory Analytical Chemistry Division, 1977; Environmental Sciences Division, 1980.
Syracuse University, Department of Civil Engineering, 1977, 1986.
Clarkson University, Department of Civil and Environmental Engineering, 1977, 1983.
Northwestern University, The Technological Institute, Department of Civil Engineering, 1978, 2003.
Corvallis Environmental Research Laboratory, U.S. EPA, 1978.
Electric Power Research Institute, Environmental Workshop, 1978
Swiss Federal Institute for Water Pollution Control, 1978.
Environmental Protection Agency, National Meeting on Lake Restoration, 1978.
West Virginia University, Department of Civil Engineering, 1978.
Washington State University, Department of Civil and Environmental Engineering, 1978.
Batelle Pacific Northwest Laboratories, 1978.
University of Wisconsin, Water Chemistry Program, 1978, 1981, 1984, 1993, 1998, 2013.
Indiana University at South Bend, Department of Chemistry, 1978, 1982.
University of Tennessee, Department of Civil Engineering, 1979.
The Ohio State University, Department of Civil Engineering, 1981.
Los Alamos National Laboratory, 1982.
Princeton University, Dept. of Civil Engineering, 1984.
Drexel University, Dept. of Civil Engineering, 1984.
University of Ottawa, Dept. of Civil Engineering, 1986.
University of Arizona, Dept. of Hydrology and Water Resources, 1986.
Alcoa Technical Center, 1986.
Association of Environmental Engineering Professors Workshop, Purdue University, 1987.
Workshop on Metal Speciation, U.S. EPA Office of Exploratory Research, Jekyll Island, Ga., 1987.
Lehigh University, Dept. of Civil Engineering, 1988.
Cornell University, School of Civil and Environmental Engineering, 1988, 1998.
Stanford University, International Symposium on Processes Affecting the Movement and Fate of Contaminants in the Subsurface Environment, 1989.
Cornell University, Center for Environmental Research, 1989.
University of Quebec, INRS-Eau, 1990.
Rensselaer Polytechnic Institute, 1990.
Workshop on Metal Speciation and Contamination of Soil, Jekyll Island, Ga.,1991.
Wastewater Technology Center, Burlington, Ont.,1992.
University of California, Riverside, 1992.
Case Western Reserve University, 1992.
State University of New York, Potsdam,1993.
Blasland, Bouck and Lee, Engineers,1993.
Purdue University,1995, 2006.
Parsons-Engineering Science,1995.
State University of New York at Buffalo, Dept. of Civil and Environmental Engineering,1995.
Metropolitan Water Reclamation District of Greater Chicago,1996, 2008.
University of North Carolina at Charlotte,1998.
ALCOA, Environmental Technology Advisory Board,1998, 2005, 2014.
University of Florida, Dept. of Environmental Engineering Sciences,1999.
Columbia University, Earth and Environmental Engineering,1999.
New Jersey Institute of Technology,2000.
Duke University, Department of Civil and Environmental Engineering, 2001.
Duke University, Center for the Environmental Implications of Nanotechnology, 2010.
University of Illinois, Chicago, Department of Civil and Materials Engineering, 2001.
University of Illinois Urbana Champaign, 2009, 2010, 2011.
United States Department of Agriculture, National Center for Agricultural Utilization Research, 2003.

Gordon Research Conference *Industrial Ecology*, 2008.
Clemson University, 2009.
NitroEurope Conference Keynote Speaker, 2009
US-Japan Conference on Sustainable Infrastructure, 2009.

Major Presentations: Over 300 presentations before professional meetings and conferences

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August 2005

Education

9/81-9/86 Cornell University, Ithaca, NY: Ph.D. in Theoretical High Energy Physics

9/77-5/81 Swarthmore College, Swarthmore, PA: B.A. in Physics, Mathematics minor. (High Honors, Phi Beta Kappa)

Professional History

8/05 - Anderson Interface Associate Professor of Natural Systems, School of Industrial and Systems Engineering and School of Public Policy. Georgia Institute of Technology.

9/04 – 8/05 American Physical Society Congressional Science Fellow. Office of Representative Rush Holt.

6/88 – 6/05 Princeton University. Research Scientist (from 12/97), Princeton Environmental Institute. Lecturer, Woodrow Wilson School of Public and International Affairs. Member of the Research Staff (7/91 to 12/97); Research Associate (5/88 to 6/91).

10/86-5/88 Research Fellow, Dept. Engineering and Public Policy, Carnegie Mellon Univ.

9/81-9/86 Research Assistant, Theoretical High Energy Physics; Teaching Assistant (TA), graduate and undergraduate physics, Cornell University.

Awards and Honors

Fellow of the American Physical Society, since 1999.

AT&T Industrial Ecology Fellow, 1997-99, 1993-95.

Award for Faculty Research Excellence, New Jersey Commission on Science and Technology, Multi-Lifecycle Engineering Research Center, 1999.

Excellence in Review Award, *Environmental Science and Technology*, 2005.

Professional Activities

US EPA Science Advisory Board:
Board Member 2003-2006.

Environmental Engineering Committee Member, 2000-2003.
Panel on Valuing Protection of Ecological Systems and Services, 2003 – present
Chair, Metals Action Plan Review Panel, 2002.
Subcommittee on Industrial Ecology. Co-chair, 2001.
Dioxin Reassessment Panel, 2000.
Review of Residual Risk Case Study (for Clean Air Act residual risk assessments), 2000.
Integrated Risk Project. Human Exposure and Health, and Steering Committee, 1996-99.
Review of EPA's Report to Congress on Mercury. Chair, sources working group, 1997.
Review of EPA Dioxin Reassessment: Exposure Panel, 1995.

Basel Convention Mobile Phone Partnership Initiative (MPPI) (Mobile Phone manufacturers' voluntary initiative under the Basel Convention, United Nations Environment Program). Member, Working Group 4.1A.

Gordon Conference on Industrial Ecology. Vice-Chair, 2004. Chair, 2006.

Co-organizer (with T. Graedel of Yale) of "Reinventing the Use of Materials," a workshop to develop a research agenda for the National Science Foundation. February 2002.

Chair of US EPA Dioxin Inventory External Peer Review. May 1998.

US Director, Russian Lead Project. Participants from a range of Russian NGO, scientific, industry, and governmental organizations. 1997-2000.

New Jersey Comparative Risk Project, NJ Department of Environmental Protection (DEP): Ecosystem Technical Working Group, and Project Team. 1999-2001.

Member of New Jersey Task Force on Mercury, NJ DEP, 1998-00.

Consultant to Environmental Defense, on vehicle emissions, 2000.

Co-Organizer (with R. Socolow and C. Andrews). NSF-sponsored Workshop on Industrial Ecology and Policy, White House Conference Center, April 1998.

Technical Expert to US Delegation, OECD Workshop on Lead Products, Toronto, Sept. 1994.

Council Member, Federation of American Scientists, 1990-93.

Organizing Committee, International Summer Schools on Science and World Affairs, 1991: Moscow; 1992: Shanghai; 1993: Boston. Co-Organizer, 1990 International Summer School on Science and World Affairs, Princeton University, August 6-16, 1990.

Observer, NRDC/Soviet Academy of Sciences "Black Sea Experiment," on nuclear SLCM warhead detection, Yalta, USSR, July 1989.

Courses Taught

The Use of Science in Environmental Policy (formerly called Methods in Science, Technology, and Environmental Policy), Fall 2003, 2001. Core course of the graduate program in Science, Technology and Environmental Policy, Woodrow Wilson School of Public and International Affairs.

Environmental Studies 302: Perspectives on Environmental Studies: Policy and Values. Co-Instructor, Spring 1996 (Core Course of the Environmental Studies Program).

Environmental Studies 301: Perspectives on Environmental Studies: Science and Engineering. Co-Instructor, Fall 1995 (Core Course of the Environmental Studies Program).

Science, Technology and Public Policy. Princeton University, Woodrow Wilson School of Public and International Affairs, 1988 and 1990 (Preceptor).

Arms Control and Disarmament. Department of Engineering and Public Policy, Carnegie Mellon University, 1987.

Quantum Mechanics. Physics 572. Department of Physics, Cornell University. Teaching Assistant.

Classical Electrodynamics. Physics 561. Department of Physics, Cornell University. Teaching Assistant.

Introductory Quantum Mechanics. Physics 443. Department of Physics, Cornell University. Teaching Assistant.

General Physics. Physics 101and 102. Department of Physics, Cornell University. 1982. Teaching Assistant.

Selected Talks

"Information Technology for Product Lifecycle Management," Green Chemistry Conference, Washington DC, June 24, 2005.

"Gasoline Oxygenates: Toward Fewer Mistakes in Environmental Assessment," Green Chemistry Conferences, June 23, 2005, Washington DC.

"Toward Trash That Thinks," EPA Millenium Lecture, Januaary 5, 2005, US EPA Headquarters, Washington DC.

"How We Get Rid of Things: Product Self-Management and the Economics of Second-Hand Markets," School of Natural Resources and Environment, University of Michigan, November 2002.

"A Theoretical Foundation for Industrial Ecology," Gordon Conference on Industrial Ecology, June 2002.

"Implementing Industrial Ecology at the US EPA," US EPA Industrial Ecology Workshop, November 1999.

"Why Resources Aren't Scarce and Emissions Aren't a Problem," Gordon Conference on Industrial Ecology, June, 1998.

"Industrial Ecology of Lead," Workshop on Materials Flows, National Research Council, January 26, 1998.

"Elimination of Leaded Gasoline in Russia," Workshop Sponsored by the Center for Russian Environmental Policy, the Natural Resources Defense Council (NRDC), and the Russian Ministry of Fuels and Energy. Moscow, Russia. December 14, 1995.

"Sources and Risks of Exposure to Lead," National Security Council of the Russian Federation, Interagency Commission on Ecological Security, The Kremlin, Moscow, Russia. May 22, 1995.

"World Use of Lead in Gasoline, and the Barriers to Lead Phase-Out," United Nations Commission on Sustainable Development, United Nations, New York. April 12, 1995.

PUBLICATIONS

Articles in Refereed Journals, Books, and Book Chapters

"Toward Intelligent Recycling: A Proposal to Link Bar Codes to Recycling Information," S. Saar, M. Stutz, and V. M. Thomas. *Resources, Conservation, and Recycling* **41**(1):15-21, 2004.

"Research Issues in Sustainable Consumption: Toward an Analytical Framework for Materials and the Environment," V. M. Thomas and T. E. Graedel. *Environmental Science and Technology* **37** (23) 5383 – 5388, 2003.

"Product Self-Management: Evolution in Recycling and Reuse," V. M. Thomas. *Environmental Science and Technology* **37** (23) 5297 – 5302, 2003.

"Demand and Dematerialization Impacts of Second-Hand Markets: Reuse or More Use?" V. M. Thomas. *Journal of Industrial Ecology* **7**(2), 65-78, 2003.

"Theoretical Calculation of Product Contents: Battery and Cathode-Ray Tube Examples." *Environmental Science and Technology,* **37**, 2016-2019, 2003.

"Toward Trash That Thinks: Product Tags for Environmental Management," S. Saar and V. Thomas. *Journal of Industrial Ecology*, **6**(2):133-146, 2003.

"Industrial Ecology: Policy Potential and Research Needs." V. Thomas, T. Theis, R. Lifset, D. Grasso, B. Kim, C. Koshland, and R. Pfahl. *Environ. Engineering Science* **20**(1):1-9, 2003.

"No Evidence of Dioxin Cancer Threshold," D. Mackie, J. Liu, Y.-S. Loh, and V. Thomas. *Environmental Health Perspectives* **111** (9):1145-1147, 2003.

"Ethanol as a Lead Replacement: Phasing Out Leaded Gasoline in Africa," V. M. Thomas and A. Kwong.*Energy Policy* **29**:1133-1143, 2001.

"Assessing Mercury Vapor Exposure from Cultural and Religious Practices," D. M. Riley, C. A. Newby, T. O. Leal-Almeraz, and V. M. Thomas. *Environmental Health Perspectives* **109**(8):779-784, 2001.

"Soviet and Post-Soviet Environmental Management: Lessons from a Case Study of Lead Pollution," V. M. Thomas and A. O. Orlova. *Ambio* **30**(2):104-111, 2001. Russian language version also available.

"Response to Comments on 'Effects of Reducing Lead in Gasoline: An Analysis of the International Experience,'" V. M. Thomas, R. H. Socolow, J. J. Fanelli, and T. G. Spiro. *Environ. Science and Technol.* **34**(19):4254, 2000.

"Effects of Reducing Lead in Gasoline: An Analysis of the International Experience," V. M. Thomas, R. H. Socolow, J. J. Fanelli, and T. G. Spiro. *Environ. Science and Technol.*, **33**(22):3942-3947, 1999.

"Dioxin and Related Compounds," E. K. Silbergeld and V. M. Thomas, pp. 1185-1198 in *Environmental and Occupational Medicine*, W. Rom, ed., 3rd ed., Lippincott-Raven, 1998.

"Dioxin Emissions Inventories," V. Thomas and T. Spiro, pp. 1359 - 1365 in *Encyclopedia of Environmental Analysis and Remediation*, R. A. Meyers, ed. Wiley Publishers, 1998.

"Bromine Emissions from Leaded Gasoline," V. M. Thomas, J. A. Bedford and R. J. Cicerone. *Geophysical Research Letters* **24** (11):1371-1374, 1997.

"The Industrial Ecology of Lead and Electric Vehicles," R. H. Socolow and V. M. Thomas. *Journal of Industrial Ecology* 1(1):13-36, 1997. Re-published in *Managing a Material World: Perspectives in Industrial Ecology*. P. Vellinga, F. Berkhout, J. Gupta, eds., Kluwer Academic, Dordrecht, 1998. Also republished in *The Future of the Electric Vehicle*, H. A. Kukcuk, ed., Informationen zur Elekrizitat, Frankfurt, 1997, pp. 230 - 241.

"The US Dioxin Inventory: Are There Missing Sources?" V. M. Thomas and T.G. Spiro. *Environmental Science and Technology* 30(2):82A-85A, 1996.

"Pilot Study of Sources of Lead Exposure in Moscow Russia," A. O. Orlova, D. I. Bannon, M. R. Farfel, V. M. Thomas, L. V. Aleschukin, V. V. Kudashov, J. P. Shine, G. I. Kruchkov. *Environmental Geochemistry and Health* **17**:200-210, 1995.

"The Elimination of Lead in Gasoline." V. M. Thomas, *Annual Review of Energy and the Environment*, **20**:301-324, 1995.

"An Estimation of Dioxin Emissions in the United States," V. M. Thomas and T.G. Spiro. *Toxicological and Environmental Chemistry* **50**(1/2):1-37, 1995.

Industrial Ecology and Global Change, R. Socolow, C. Andrews, F. Berkhout and V. Thomas, eds. Cambridge Univ. Press, 1994. Co-author of the following chapters:

"Emissions and Exposure to Metals: Cadmium and Lead," V. Thomas and T. Spiro.
"The Industrial Ecology Agenda," C. Andrews, F. Berkhout and V. Thomas.
"Soil as a Vulnerable Environmental System," J. Schnoor and V. Thomas.
"Industrial Ecology in the Manufacturing of Consumer Products," W. France and V. Thomas.

"Verification of Limits on Long-Range Nuclear SLCMs," V. M. Thomas, *Science and Global Security*, 1(1/2):27-56, 1989.

"Sensitivity of Oscillating Chemical Reactions 1. The Period of the Oregonator," D. Edelson and V. Thomas. *The Journal of Physical Chemistry*, 85:1555, 1981.

Other Publications: Reports, Letters, and Conference Proceedings

"GPS and Radio Tracking of End-of-Life Products," J. A. Lee and V. M. Thomas, *Proc. IEEE International Symposium on Electronics and the Environment*, 2004, pp. 309-312.

"Linking Bar Codes to Recycling Information," M. Stutz, V. M. Thomas, S. Saar. *Proc. IEEE International Symposium on Electronics and the Environment*, 2004, pp. 313-316.

Guidance: Environmentally Sound Management of End-of-Life Mobile Phones. Project 4.1A. Awareness Raising and Training. Design. Mobile Phone Partnership Initiative, The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal. UNEP. 2004.

"A Strategy to Phase-Out Lead in African Gasoline," G. Hodes, V. Thomas, and A. Williams, *Renewable Energy for Development* **16**(3), 2003. Stockholm Environment Institute.

Electric Tag for Product Life Cycle Management. V. Thomas, S. Saar, M. Stutz. 8/13/2003. *IP.com Prior Art Database*. http://ip.com/pubView/IPCOM000018813D

"Good Intentions Not Enough When It Comes to Lead Ban," G. Hodes and V. Thomas*, Business Day* (Johannesburg), January 29, 2003.
http://www.bday.co.za/bday/content/direct/1,3523,1272102-6078-0,00.html
Also published in AllAfrica.com, January 29, 2003.
http://allafrica.com/stories/200301290305.html (See also response, "Green Rubbish," Philip Lloyd Industrial & Petrochemical Consultants, *Business Day*, January 30, 2003)
http://www.bday.co.za/bday/content/direct/1,3523,1273521-6078-0,00.html .

"Reinventing the Use of Materials." V. Thomas and T. Graedel. In 2003 NSF Design Service and Manufacturing Grantees and Research Conference Proceedings, R. G. Reddy, ed. Birmingham, AL, January 2003.

"SAB Review of the Metals Action Plan," US EPA Science Advisory Board (Chair, V. Thomas) www.epa.gov/sab. October 2002.

"Life-Cycle Analysis," V. M. Thomas, *Macmillan Guide to Pollution*, 2002. Stapleton, R. M., ed. New York: Macmillan.

"Industrial Ecology: A Commentary by the EPA Science Advisory Board." (Chair, V. Thomas) 2002. www.epa.gov/sab

"Technology, Markets and Moral Restraint," V. Thomas. Paper presented at the Inaugural Conference of the Kuyper Center for Public Theology, *Theology, Technology, and Environmentalism*. Princeton Theological Seminary. February 2002.

"Advanced Product Tags for Recycling," S. Saar and V. Thomas. *Proc. IEEE Int'l. Symp. Electronics and Environment* 2002, pp. 254-256.

"Ethanol as a Replacement for Gasoline Lead in Developing Countries" V. Thomas. *Ethanol, Climate Protection, Oil Reduction Newsletter.* Environmental and Energy Study Inst., Nov. 2001.

"Optimization of Inductive RFID Technology for Product Management," S. C. Q. Chen and V. Thomas. *Proc. IEEE Int'l. Symp. Electronics and Environment* , pp. 82-87, May 2001.

"Fuel Additives," E. K. Silbergeld and V. M. Thomas, *Encyclopedia of Public Health*, Macmillan, 2000.

"Lead, Mercury and Cadmium in Electronics Products," V. Thomas. PU/CEES Working Paper No. 141, January 2000.

"Mercury Pollution: Sources, Consequences, and Remedies" D. M. Riley and V. M. Thomas. *PU/CEES Working Paper No. 140*. September 1999.

"Information Technology and Product Lifecycle Management," V. Thomas, W. Neckel, and S. Wagner. *Proc. IEEE Int'l. Symp. Electronics and Environment* 1999, pp. 54-57.

"Understanding the Real Impact of DFE Guidelines: A Case Study of Four Generations of Telephones," H. Al-Okush, R. J. Caudill, V. Thomas. *Proc. IEEE Int'l. Symp. Electronics and Environment* 1999.

"Linking Industrial Ecology to Public Policy: Report of a Workshop." C. Andrews, D. Rejeski, R. Socolow, V. Thomas PU/CEES Report No. 310, 1998.

"Marginal Emissions and Variation Across Models: Life-Cycle Analysis of a Television," V. Thomas, R. Caudill and D. Badwe. *Proc. IEEE Int'l. Symp. Electronics and Environment* 1998, pp. 48-53.

"Rejoinder to Lave, Hendrickson and McMichael," R. H. Socolow and V. M. Thomas, *J. Industrial Ecology* 1(2):39-40, 1997.

Review of "Industrial Ecology: Towards Closing the Materials Cycle" (by R. U. Ayres and L. W. Ayres), V. M. Thomas, *Journal of Industrial Ecology* 1(2):149-151, 1997.

"International Use of Lead in Gasoline," V. Thomas, App. 5.1 in *Air Pollution from Motor Vehicles: Standards and Technologies for Controlling Emissions*, A. Faiz, C. S. Weaver, and M. P. Walsh, eds., World Bank, 1997.

"The Global Warming Impact of Liquid Crystal Displays," V. Thomas, S. Wagner and S. Sherman. *Digest of Technical Papers,* Society for Information Display (SID) 1996 Display Manufacturing Technology Conference, February 1996, pp. 127-128.

Review of "The Greening of Industrial Ecosystems" (by B. R. Allenby and D. J. Richards), V. Thomas. *Society and Natural Resources*, 9(4):440-442, 1996.

"Anthropogenic Dioxin: A Reply to R. A. Carpenter," T. G. Spiro and V. M. Thomas. *Ecol. Applications* 5(2):309, 1995.

"Assessing Heavy Metals Loading in Sewage," with C. Andrews and R. Socolow. Final Report, Emission Reduction Research Center, New Jersey Institute of Technology, 1995.

"Sources of Dioxin," T. G. Spiro and V. M. Thomas. *Science* 266:349, 21 October 1994.

"Summary of PCDD/PCDF Emissions in the United States: History and Relationship to Chlorine in Combusted Material," V. Thomas, T. Spiro. *Organohalogen Compounds* 20:367-372, 1994.

"Nuclear Warhead Detection: The Black Sea Experiment," V.Thomas, in *Verification Report 1991*, edited by J. B. Poole, New York: Apex Press, 1991.

"Reducing Tactical Nuclear Weapons," V. Thomas, in *Science and International Security*, edited by Eric H. Arnett. Washington: American Association for the Advancement of Science, 1990.

"Verification of Sea-Launched Cruise Missiles," V. Thomas, in *Verification of Arms Reductions: Nuclear, Chemical and Conventional*, J. Altmann, J. Rotblat, eds. [Berlin: Springer-Verlag, 1989]

"Verification of Limitations on Land-Based Missiles," Levi, Hafemeister, and Thomas, in *The Future of Land-Based Strategic Missiles*, B. G. Levi, M. Sakitt, A. Hobson, eds. AIP, 1989.

"Nuclear Weapon," V. Thomas, *Academic American Encyclopedia*, Danbury: Grolier, 1990.

"Reductions in Tactical Naval Nuclear Weapons," V. Thomas, *FAS Public Int. Rep.*, May 1990.

"Monitoring of Solid-Fueled Missile Production," V. Thomas, *Physics & Society*, Jan. 1988.

"Aspects of Two-Dimensional Quantum Field Theories," V. Thomas, Ph.D. Thesis, Cornell University, 1986.

CURRICULUM VITAE

(conforms to the UI College of Public Health format)

Peter S. Thorne, MS, PhD
Professor and Head
Department of Occupational and Environmental Health
Director, Environmental Health Sciences Research Center

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I. EDUCATIONAL AND PROFESSIONAL HISTORY

A. Education

1974-1978	B.S. Chemical Engineering	University of Wisconsin-Madison
1978-1980	M.S. Biomedical Engineering	University of Wisconsin-Madison
1980-1984	Ph.D. Environmental Toxicology	University of Wisconsin-Madison
1984-1987	Post-doc Immunotoxicology	University of Pittsburgh

B. Professional and Academic Appointments

1976	Engineering Intern, Automotive Research Assoc., Inc, Madison, WI
1977	Engineering Intern, Dept. of Mechanical Engineering, University of Wisconsin, Madison, WI
1978-1980	Research Assistant, Dept. of Veterinary Science, University of Wisconsin, Madison, WI
1980-1981	Teaching Assistant, Dept. of Chemical Engineering, University of Wisconsin, Madison, WI
1980-1982	Research Assistant, Environmental Toxicology Center, University of Wisconsin, Madison, WI
1982-1984	National Research Service Award Trainee, Environmental Toxicology Center, University of Wisconsin, Madison, WI
1984-1987	Faculty Associate, Immunotoxicology, Graduate School of Public Health, University of Pittsburgh, Pittsburgh, PA
1987-1988	Assistant Professor, Industrial Environmental Health Sciences, Graduate School of Public Health, University of Pittsburgh, Pittsburgh, PA
1988-1992	Assistant Professor of Toxicology and Industrial Hygiene, Dept. of Preventive Medicine and Environmental Health, College of Medicine, University of Iowa, Iowa City, IA
1992-1997	Associate Professor, Toxicology and Industrial Hygiene, Dept. of Preventive

	Medicine and Environmental Health, College of Medicine, University of Iowa, Iowa City, IA
1997-present	Professor of Toxicology and Environmental Health, University of Iowa, Iowa City. IA
	(1997-1999) Dept. of Preventive Medicine and Environmental Health, College of Medicine
	(1999-present) Dept. of Occupational and Environmental Health, College of Public Health
1997-present	Professor of Environmental Health, Dept. of Civil and Environmental Engineering, University of Iowa, Iowa City, IA (Secondary Appointment)
2001-present	Center Director, Environmental Health Sciences Research Center, University of Iowa, Iowa City, IA
2005-present	Associate Director, Interdisciplinary Program in Human Toxicology, University of Iowa, Iowa City, IA
Aug 1, 2009-May 31,2010	Acting Head, Dept. of Occupational and Environmental Health, University of Iowa, Iowa City, IA
June 1, 2010-present	Head, Dept. of Occupational and Environmental Health, University of Iowa, Iowa City, IA

Professor Appointments at Other Universities

1998	Environmental and Occupational Health, Wageningen Agricultural University, Netherlands, Jan-July 1998
2006-2007	The Institute for Risk Assessment Sciences, Utrecht University, Netherlands, Aug 2006-Jul 2007
2007	Department of Environmental and Occupational Medicine, University of Aarhus, Denmark, Feb, Jun, Sept 2007

C. Honors, Awards, Recognitions, Outstanding Achievements

1977 & 1978	Dean's Honor List, College of Engineering, University of Wisconsin
1978	Dean's High Honor List, College of Engineering, University of Wisconsin
1978	Graduate with Honors, College of Engineering, University of Wisconsin
1981-1982	Vilas Graduate Fellowship Recipient, University of Wisconsin
1982-1984	National Institute for Environmental Health Sciences (NIEHS), National Research Service Award Trainee, University of Wisconsin
1998	Developmental Leave Award, 6 month, University of Iowa
2001	Chair, NIH, CSR, Safety and Occupational Health Study Section
2001-present	Director, Environmental Health Sciences Research Center, University of Iowa

2003	Whitehead Memorial Lectureship, 2003 Visiting Scholar, Children's Hospital of Pittsburgh, Pittsburgh, PA
2003-2006	National Advisory Environmental Health Sciences (NAEHS) Council, NIH
2004	The Thomas Bedford Memorial Prize, British Occupational Hygiene Society (with Drs. Dick Heederik and Gert Doekes)
2006-2007	Developmental Leave Award, 12 month, University of Iowa
2009	College of Public Health Research Award, University of Iowa
2009-2010	Academic Leadership Program Fellow, Committee on Institutional Cooperation (A Big 10 Universities Consortium)
2010	Elected to Delta Omega Honorary Public Health Society
2010	John Doull Award, Central States Chapter of the Society of Toxicology

D. Formal Training in Academic Leadership

CIC ALP – Committee on Institutional Cooperation Academic Leadership Program, 2009-1010

- Seminar I – Issues and Ideas
  - Michigan State University - September 24-26, 2009
- Seminar II – People and Relationships
  - University of Illinois-Urbana Champaign - January 28-30,2010
- Seminar III – Resources; Behind the Scenes; Creating the University
  - Purdue University - April 8-10, 2010
- CIC ALP Meetings at the University of Iowa
  - Meeting with Associate Provost Susan Johnson – September 11, 2009
  - Meeting with Associate Provost Susan Johnson – November 17, 2009
  - Meeting with Associate Provost Tom Rice – January 14, 2010
  - Meeting with Vice President Jordan Cohen – February 23, 2010
  - Meeting with Vice President Doug True and staff – March 26, 2010
  - Meeting with President Sally Mason - April 26, 2010

DEO Programs Attended at the University of Iowa

- DEO Overview of the Year – September 14, 2009
- Time Management – Balancing Tasks and Time as a DEO – October 15, 2009
- DEO University Budget Workshop – November 3, 2009
- Departmental Level Budgeting and Financial Management – April 2, 2010
- Advancing Iowa: U.I. Foundation and You – April 14, 2010

DEO First Friday Discussion Group

- Embrace Your Fate – September 4, 2009
- Know Your Colleagues – October 2, 2010
- Negotiation – November 6, 2010
- Complaints – December 4, 2010
- Bullies – February 17, 2010
- When Not to Improvise – March 5, 2010
- Violations – April 2, 2010

II. TEACHING AT THE UNIVERSITY OF IOWA AND ELSEWHERE

A. Teaching Assignments

Years	Course	Sem Hrs	# Stud-ents	Role	% taught
TEACHING AT THE UNIVERSITY OF IOWA					
1980 Summer	ChE 562: Trans. Phen in Living Systems				
	63:280 Occup. & Environmental Health Seminar				
1989 Spring		1	10	Director	100
1989 Fall		1	15	Director	100
	63:193 Industrial Hygiene				
1989 Fall		2	3	Co-Director	50
1990 Fall		2	4	Co-Director	50
1991 Fall		2	3	Co-Director	50
	63:232 Industrial Hygiene II				
1993 Spring		3	6	Lecturer	30
1994 Spring		3	6	Lecturer	5
	63:191 Occupational Health				
1989 Fall		3	12	Lecturer	10
1990 Fall		3	15	Lecturer	15
1991 Fall		3	11	Lecturer	15
1992 Fall		3	16	Lecturer	5
1993 Fall		3	7	Lecturer	5
	63:109 Preventive Medicine				
1990 Fall		3	150	Lecturer	5
1991 Fall		3	150	Lecturer	5
1992 Fall		3	150	Lecturer	5
1993 Fall		3	150	Lecturer	5
1994 Fall		3	170	Lecturer	5
1995 Fall		3	170	Lecturer	5
	175:260 (previously 63:260) **Environmental Toxicology**				
1989 Fall		3	16	Co-Director	50
1991 Spring		3	15	Co-Director	50
1992 Spring		3	15	Co-Director	50
1993 Spring		3	16	Co-Director	50
1994 Spring		3	17	Co-Director	50
1995 Spring		3	8	Co-Director	50
1996 Spring		3	12	Co-Director	50
1997 Spring		3	12	Co-Director	50
1999 Spring		3	30	Co-Director	50
2000 Spring		3	5	Co-Director	50

2001 Spring		3	18	Co-Director	50
2002 Spring		3	14	Co-Director	50
2003 Spring		3	15	Co-Director	50
2004 Spring		3	13	Co-Director	30
2005 Spring		3	17	Co-Director	30
2006 Spring		3	14	Co-Director	30
2008 Spring		3	10	Co-Director	30
2009 Spring		3	15	Instructor	25
2010 Spring		3	19	Instructor	20
2011 Spring		3	15	Instructor	15
	175:270 (previously 63:270)				
	Special Topics in Toxicology - Murder, Magic & Medicine				
1990 Spring		2	8	Director	100
1992 Spring		2	2	Director	100
1993 Spring		2	2	Director	100
1995 Fall		2	1	Director	100
1996 Spring		2	4	Director	100
2000 Spring		2	5	Director	100
2002 Spring		2	5	Director	100
	175:197 (previously 63:202)				
	Environmental Health				
1990 Spring		3	22	Lecturer	10
1991 Fall		3	33	Lecturer	10
1992 Fall		3	25	Lecturer	10
1993 Fall		3	26	Director	30
1994 Fall		3	41	Director	65
1995 Fall		3	40	Director	65
1996 Fall		3	45	Director	65
1997 Fall		3	33	Director	65
1998 Fall		3	30	Director	65
1999 Fall		3	34	Director	65
2000 Fall		3	28	Director	65
2001 Fall		3	30	Director	65
2002 Fall		3	31	Director	65
2003 Fall		3	18	Director	65
2004 Fall		3	33	Director	65
2005 Fall		3	35	Director	65
2007 Fall		3	48	Director	60
2008 Fall		3	44	Director	60
2009 Fall		3	41	Director	60
2010 Fall		3	43	Director	65
	44:227				
	Environ. Quality: Science, Tech. & Policy				
1995 Fall		3	20	Lecturer	10
	91:366				
	Toxic Substances Litigation				
2001 Spring		1	29	Instructor	10
	175:101				
	Health, Work and Environment				
2004 Spring		3	20	Lecturer	5
2005 Spring		3	25	Lecturer	5
2006 Spring		3	35	Lecturer	2
2008 Spring		3	35	Lecturer	2

2009 Spring		3	45	Lecturer	2
2010 Spring		3	22	Lecturer	2
	175:220 Environmental & Occup. Epidemiology				
2005 Spring		3	12	Lecturer	2
2006 Spring		3	10	Lecturer	2
2008 Spring		3	6	Lecturer	2
2009 Spring		3	3	Lecturer	2
	175:195 Global Environmental Health				
2005 Spring		3	20	Lecturer	
2006 Spring		3	20	Lecturer	2
2007 Spring		3	20	Lecturer	2
	175:265 Advanced Toxicology				
2007 Fall		4	9	Co-Director, Module 3	20
2008 Fall		4	6	Co-Director, Module 3	20
2010 Fall		4	11	Co-Director, Module 3	20
	096:153 Community/Public Health Nursing Theory				
2009 Winter		3	44	Lecturer	4

TEACHING AT OTHER UNIVERSITIES

1985-1987	IEHS 205 University of Pittsburgh Industrial Environmental Health Laboratory	3	25	Lecturer	20
1985-1987	IEHS 207 University of Pittsburgh Industrial Environ. Health Colloquium	3	25	Lecturer	20
1986	IEHS 276 University of Pittsburgh Respiratory Physiology	3	25	Lecturer	20
1987-1988	IEHS 279 University of Pittsburgh Immunotoxicology	3	20	Lecturer	40
1997 Nov 3-5	Pulmonary Toxicology International Institute for Rural & Environmental Health, Bratislava, Slovak Republic	24 hr	18	Co-Director	50
1998 Sep. 9-11	Biological Agents Wageningen University, Netherlands	24 hr	20	Lecturer	20
1999 Aug 30-Sep 3	Biological Agents: Exposure Assessment and Risk Evaluation, Wageningen University, Netherlands	36 hr	12	Lecturer	25

2001 Sep 10-12	Biological Agents in the Work and Home Environment: Exposure Assessment and Health Risk Evaluation. Utrecht University, Netherlands	24 hr	25	Lecturer	25
2002 Apr 8-10	Respiratory Inflammation & Allergic Diseases with Respect to Environment Institute of Preventive and Clinical Medicine`, Bratislava, Slovak Republic	24 hr	28	Co-Director	40
2003 Sep. 22-25	Biological Agents: Exposure Assessment and Health Risk, Utrecht University, Netherlands	32 hr	15	Lecturer	25
Nov 2006- Feb 2007	BMW31605 Utrecht University Milieu, Arbeid en Gezondheid [Environment, Work and Health]	3	40	Lecturer	10
Nov 2006- Feb 2007	BMB500603 Utrecht University Exposure Assessment	3	40	Lecturer	10
2006 Fall	Advanced Course in Occupational Hygiene Catholic University Leuven, Belgium	40 hr	16	Lecturer	10
2007 11-15 June	Occupational and Environmental Airborne Contaminants: Assessment of Exposures and Health Outcomes, University of Aarhus, Århus, Denmark	40 hr	23	Co-Director	40

B. Students Advised

Post-Doctoral Fellows

Alzbeta Kaiglova, DVM	1996
Jeffrey L. Lange, PhD	1996-1997
Katarina Kulhankova, MD	1998-2001
Caroline Duchaine, PhD	1998-2000
Karen Hastings Bartlett, PhD	1999-2000
Terri Pearce, PhD	1999-2001
Carol Hodne, PhD	2001-2003
Suzana Hađina, DVM, PhD	2004-2007; 2008-2011
Sune Straszek, MD	2006
Melanie Conrad, PhD	2007

Doctoral Students

William G. Jones, MS *Design and calibration of a multi-purpose aerosol sampler*	PhD Hygiene University of Pittsburgh 1985-1988	Co-Major Professor
Paul Hewett, MS *A study of the physical and chemical characteristics of welding fumes*	PhD Hygiene University of Pittsburgh 1988	Member Dissertation Committee
Gregory J. Kullman, MS *Occupational exposures to organic dusts from dairy farming and respiratory symptoms among farmers*	PhD Preventive Medicine & Environmental Health University of Iowa 1991-1995	Major Professor
Jeffrey L. Lange, MS *Bioaerosols: molecular techniques for assessment and determinants of exposure in agriculture*	PhD Preventive Medicine & Environmental Health University of Iowa 1993-1996	Major Professor
Sean M. Mahar, MS *Worker health and environmental exposures in two refuse derived fuel plants*	PhD Preventive Medicine & Environmental Health University of Iowa 1993-1996	Member Thesis Committee
Chad Roy, MPH *Exposures and pulmonary toxicity of Sclerotinia sclerotiorum, β(1→3)-glucans, endotoxins and particulates*	PhD Preventive Medicine & Environmental Health University of Iowa 1996-1999	Major Professor
Erik Svendsen, MS *Determinants of allergen and irritant exposures in a rural childhood asthma cohort*	PhD Preventive Medicine & Environmental Health University of Iowa 1996-2001	Major Professor
Jan-Paul Zock, MSc *Organic dust exposure and respiratory health in the potato processing industry*	PhD Occup. Hygiene University of Wageningen, Netherlands 1998	Opponent
Laura Beene-Freeman, MS *Arsenic exposure, artificial tanning and melanoma in Iowa*	PhD Epidemiology University of Iowa 1999-2003	Member Thesis Committee
Inge Wouters, MSc *Man and his waste: bio-aerosol exposure and respiratory health effects in waste management*	PhD Environmental and Occupational Health, Univ. of Utrecht, Netherlands 1998-2003	Promoter
Linda Mueller-Anneling, MS *Environmental risk factors for childhood asthma*	PhD Occupational & Environmental Health University of Iowa 2000-2004	Major Professor

Aaron Peck, MS *Sources, fate and transport of persistent organic pollutants in Iowa air: the role of air-surface exchange*	PhD Civil and Environmental Engineering University of Iowa 2000-2004	Member Thesis Committee
Jakob Bønløkke. MD *Organic dust and inflammatory markers. Relations between respiratory symptoms, lung function and inflammation of the airways*	PhD Environmental and Occupational Medicine Univ. of Aarhus, Denmark 2004-2005	Opponent
Joung Ae Lee, MS *Evaluation of air quality in wastewater treatment plants and monitoring health status of the workers*	PhD Occupational & Environmental Health University of Iowa 2000-2006	Member Thesis Committee
Katarina Kulhankova, MD, MS *Effects of early life endotoxin inhalation on murine hyperresponsiveness in adulthood*	PhD Occupational & Environmental Health University of Iowa 2002-2006	Major Professor
Alicia Quella, MPAS *Rural environmental exposures and asthma in school-age children*	PhD Epidemiology University of Iowa 2003-2006	Grad Research Assistant Advisor
Jelena Bogdanović, MSc *Measurement of flour and bakery enzyme allergens in the occupational environment*	PhD Environ. Epidemiology Utrecht Univ., Netherlands 2002-2006	Opponent
Brian Curwin, MSc *Bringing Work Home : Pesticide Exposure Among Farm Families*	PhD Environ. Epidemiology Utrecht Univ., Netherlands, 2004-2006	Opponent
Suzanne Spaan, MSc Topic: *Towards a Harmonized Protocol for Endotoxin Exposure Assessment*	PhD Environ. Epidemiology Utrecht Univ., Netherlands, 2006-2008	Co-promoter
Haitske Graveland, MSc Topic: *Transmission of Multi-drug Resistant Staphylococcus aureus (MRSA) in livestock facilities*	PhD Environ. Epidemiology Utrecht Univ., Netherlands, 2006-2007	Mentor
Ilka Noss Topic: *New Methods for Exposure Assessment to Environmental Allergens*	PhD Environ. Epidemiology Utrecht Univ., Netherlands 2006-2010	Co-promoter
Ingunn Skogstad Riddervold Topic: *The HIPWOODS study: Human Health Effects of Inhaled Wood Smoke*	PhD Environ. Occup. Med., University of Aarhus, Denmark, 2006-2007	Mentor
Andres Martinez Topic*: Fate of Polychlorinated Biphenyl Congeners in a Contaminated Harbor and Canal*	PhD Civil and Environmental Engineering University of Iowa 2006-2010	Committee Member
Yufang Zhang Topic: *Multilevel Repeated Measures Exposure Data in a Cohort of Rural Asthmatic Children*	PhD Statistical Genetics University of Iowa 2007-2009	Mentor

Jung Song Kim Topic: *Lung Toxicity of Transition Metal Manufactured Nanomaterials*	PhD Human Toxicology University of Iowa 2007-present	Major Professor
Xin Hu Topic: *Toxicity of Inhaled Semi-Volatile PCB Mixtures Resembling the Chicago Airshed*	PhD Human Toxicology University of Iowa 2007-present	Major Professor
Kerry Leedom Topic: *Methicillin-resistant Staphylococcus aureus (MRSA) in Swine Workers*	PhD Occup Environ Health 2008-2010	Member Thesis Committee
Sarah Spencer Perry Topic: *Statistical approaches for left-censored data analysis*	PhD Biostatistics 2008-present	Member Thesis Committee
Kimberley Hoppe Topic: *Endotoxin Exposure Assessment in the Indoor Environment*	PhD Occupational & Environmental Health 2008-present	Major Professor
Brita Kilburg Topic: *Passive monitoring approaches for vapor and particle exposure assessment*	PhD Human Toxicology University of Iowa 2009-present	Major Professor

Interdisciplinary Program in Human Toxicology (3-month Rotations)

Jong Song Kim	PhD, 2008	Project Mentor
Xin Hu	PhD, 2008	Project Mentor
Zheng Wang	PhD, 2009	Project Mentor
Brita Kilburg	PhD, 2009	Project Mentor
Fabian Grimm	PhD, 2010	Project Mentor
Sabine Vorrink	PhD, 2010	Project Mentor

Masters Students

Julie A. Hillebrand *Development of immunoassays for the detection of antibodies by class to a specific antigen*	MS Industrial Hygiene 1985-1988	Member Thesis Committee
Ruth A. Kaufman *Evaluation of FT-IR spectrometry as a method for the determination of crystalline silica in respirable dust samples*	MS Industrial Hygiene 1987	Member Thesis Committee
Khaldoun H. Kawar *The effect of relative humidity on the adsorption of selected water-miscible organic vapors by activated carbon*	MS Industrial Hygiene April 1987	Member Thesis Committee

John F. Seibert *Diminution and longitudinal splitting of carbon fibers due to grinding*	MS Hygiene 1987	Member Thesis Committee
Mark E. Bennedsen *Separation and identification of immunoglobulin E from guinea pig serum*	MS Hygiene 1988	Member Thesis Committee
Sue Ellen Hosch *Laboratory animal allergy: assessment of aeroallergen exposure and resulting clinical manifestations*	MS Preventive Medicine & Environmental Health 1988-1990	Major Professor
Jeannine A. LeVasseur *The assessment of bioaerosols in sick and healthy buildings*	MS Preventive Medicine & Environmental Health 1990-1992	Major Professor
Peggy D. Bloebaum *Field evaluation of endotoxin collection, extraction and assay methods*	MS Preventive Medicine & Environmental Health 1991	Major Professor
Lois A. Etre *Tritium analysis of ground and surface water*	MS Preventive Medicine & Environmental Health 1991	Member Thesis Committee
Jeffrey L. Lange *Field evaluation studies for assessment of bioaerosols in agricultural buildings*	MS Preventive Medicine & Environmental Health 1991-1993	Major Professor
Shari A. Bleuer *Development of a murine model for endotoxin and corn dust-induced airway inflammation*	MS Preventive Medicine & Environmental Health 1991–1994	Major Professor
Michael D. Boyer Non-thesis option	MS Preventive Medicine & Environmental Health 1992	Major Professor
Karen Allnutt *Personal radon dosimetry versus stationary radon dosimetry exposure extrapolation*	MS Preventive Medicine & Environmental Health 1992	Member Thesis Committee
Binny M. D. Padanilam *Evaluation of a sampling strategy for aldehydes using dinitrophenylhydrazine-coated glass fiber filters*	MS Preventive Medicine & Environmental Health 1992-1994	Major Professor
Chih-Mei Chin *The respiratory effects of soybean dust in the guinea pig*	MS Preventive Medicine & Environmental Health 1993-1995	Major Professor
Xiaoji Zhang *Soybean dust-induced immunologic reactions in guinea pigs*	MS Preventive Medicine & Environmental Health 1993-1995	Major Professor
Tricia S. Howe *Endotoxin and adenoviral vector-induced early pulmonary inflammation and chemotherapeutic interventions*	MS Preventive Medicine & Environmental Health 1994-1996	Major Professor

Peter N. Svebakken *The use of immunoassay to measure the enzyme ISPTOL in environmental samples*	MS Preventive Medicine & Environmental Health 1995	Member Thesis Committee
Linda Mueller-Anneling *Ehrlichiosis in Iowa: an emerging tick-borne disease of public and environmental health concern*	MS Preventive Medicine & Environmental Health 1995-1998	Major Professor
Mary J. Hauner *Efficiencies of various denuder coatings for the collection of ammonia*	MS Civil & Environmental Engineering 1996	Member Thesis Committee
Leslie Cronkhite *Summary of risk assessment*	MS Preventive Medicine & Environmental Health 1996	Member Exam Committee
Elizabeth A. Croteau *Inter-laboratory comparison of endotoxin assays*	MS Preventive Medicine & Environmental Health 1995-1997	Member Thesis Committee
Helen D. Feltovich *Female reproductive disorders associated with occupational exposure to xenobiotics*	MS Preventive Medicine & Environmental Health 1996-1997	Major Professor
Shelley P. Kirychuk *Oil/water sprinkling intervention in a swine confinement unit*	MS Preventive Medicine & Environmental Health (IH) 1997-1999	Member Thesis Committee
Jill Gassman *Inflammatory potency of bacteria and their cellular components in the lung*	MS Occupational & Environmental Health 1998-2000	Major Professor
Felice E. Tebbe *The printmaking studio: solvents and corrosives*	MA Art 1999-2000	Member Thesis Committee
Katarina Kulhankova, MD *The United States national survey of endotoxin in housing*	MS Occupational & Environmental Health 1999-2001	Major Professor
Anne Ansley *Assessment of airborne contaminants inside and downwind from two types of confined animal feeding operations*	MS Occupational & Environmental Health 2000-2002	Major Professor
Brad Lester *Offsite transmission of gaseous and particulate contaminants from CAFOs*	MS Occupational & Environmental Health 2000-2003	Major Professor
Angela Schroeder Practicum: *Repeated electronic peak flow monitoring in an environmental intervention among asthmatic children in rural Iowa*	MPH Occupational & Environmental Health 2003 – 2005	Major Professor

Jeffrey T. Lynch Practicum: *The Feasibility of Using Subject-Collected Dust Samples in Epidemiological and Clinical Studies of Indoor Allergens*	MPH College of Public Health 2003 – 2006	Member Practicum Committee
David M. Neyens Practicum: Policy Recommendations for a Mandatory Minor Bicycle Helmet Law and Driving Following a Traumatic Brain Injury	MPH College of Public Health 2007 – 2008	Major Professor
Nor Rahmah Binti Nor Hashim *Laboratory Correlation Study and Field Application of Passive Samplers for Environmental Monitoring of Ammonia and Hydrogen Sulfide*	MS Occupational & Environmental Health (Industrial Hygiene) 2007-2008	Member Thesis Committee
Marya Sheikh Rashid *An Epidemiology View on Flooding in South Central Asia*	MSc Epidemiology, Utrecht University, The Netherlands 2010-2011	Thesis Co-Advisor

C. Other Advising/Mentoring

Faculty Mentoring

Patrick O'Shaughnessy, PhD, Assistant Professor	1997-1999
Shannon Marquez, PhD, Assistant Professor	2000-2002
Caroline George, MD, Assistant Professor	2001-2006
Gabriele Ludewig, PhD, Assistant Professor	2002-2007
Jennifer Fiegel, PhD, Assistant Professor	2011-present

Other Student Mentoring

Carren Wang *Efficacy of CTI-1217 treatment on mice exposed to inhaled lipopolysaccharide*	Iowa Secondary Student Training Program	1998
Zeynab Moradi *Exposure of mice to endotoxin and Saccharopolyspora rectivirgula*	Iowa Secondary Student Training Program	1999
Christina Carpino *Augmentation of the murine response to Saccharopolyspora rectivirgula by co-exposure to endotoxin*	Iowa Secondary Student Training Program	1999
Kristen Flaherty *Validation of a whole blood assay in a mouse inflammation model*	Iowa Secondary Student Training Program	2000
Andrea Adamčaková *Inhalation Toxicology of Bioaerosols*	Fogarty Trainee, Slovakia	2000

Catrina Rorke *A biomonitoring assay for the assessment of organic dust induced inflammation*	Iowa Secondary Student Training Program	2001
Andrea Treszl *PCR-based Bioaerosol Exposure Assessment*	Fogarty Trainee, Hungary	2001
Brian Bensema *Ambient Exposures in the Vicinity of Livestock Confinement Operations*	MS Student	2003
Marcin Cyprowski *Endotoxin Analysis of Environmental Samples*	Fogarty Trainee, Poland	2005
Johannes Klösener *Uptake and Distribution of Inhaled PBDEs*	Visiting Scholar, Netherlands	2007
Sheila Novak *Global Climate Change Impacts on Respiratory Diseases*	Environmental Studies Student Project	2010

D. Other Contributions to Institutional Programs

Institutional Conferences, Grand Rounds, Journal Club

1987	Immunology of the Skin	Industrial Environmental Health Sciences Colloquium, University of Pittsburgh, Pittsburgh, PA
1987	Pulmonary Hypersensitivity	Industrial Environmental Health Sciences Colloquium, University of Pittsburgh, Pittsburgh, PA
1987	Computer Digitization and Processing of Analog Signals from Pulmonary Function Studies	Toxicology Special Seminar, University of Pittsburgh, Pittsburgh, PA
1987-1988	Immunotoxicology Journal Club	University of Pittsburgh, Pittsburgh, PA
1988	Pulmonary Hypersensitivity Responses to Industrial Aerosols	Special Preventive Medicine and Environmental Health Seminar, University of Iowa, Iowa City, IA
1989	In Vivo and In Vitro Models of Allergic Contact Dermatitis	Occupational and Environmental Health Seminar, Univ. of Iowa, Iowa City, IA
1989	A Case Study of Hypothermia and Hypoxia: The “Poor Boys” Ascent of Mt. Mckinley	Occupational and Environmental Health Seminar, University of Iowa, Iowa City, IA
1989	Indoor Air Pollution – Is it Safer Inside?	Graduate Seminar in Environmental Engineering, Univ. of Iowa, Iowa City, IA
1989	Development of Animal Models for Pulmonary Hypersensitivity and Hyperreactivity	Department of Internal Medicine, Allergy-Immunology Seminar, University of Iowa, Iowa City, IA

1990	A Guinea Pig Inhalation Model for Pulmonary Hypersensitivity and Airway Reactivity	Occupational and Environmental Health Seminar, University of Iowa, Iowa City, IA
1990	Of Mice and Ears: Testing Weak Contact Sensitizers	Occupational and Environmental Health Seminar, Univ. of Iowa, Iowa City, IA
1990	The Rehnians Versus the Apocalyptics: the Assessment and Perception of Risk	Dept. of Preventive Medicine & Environmental Health Epidemiology Seminar, University of Iowa, Iowa City, IA
1991	Environmental Measurements in Agricultural Settings	NIEHS Environmental Health Sciences Research Center Seminar Series, University of Iowa, Iowa City, IA
1991	Indoor Air Pollution: The State-of-the-Art	Liberal Arts Student Association Seminar Series, University of Iowa, Iowa City, IA
1991	Inhalation Animal Models for Grain Dust-Induced Pulmonary Disease	Department of Internal Medicine, Pulmonary Division Seminar, University of Iowa, Iowa City, IA
1991-1994	Immunotoxicology Journal Club	Preventive Medicine and Environmental Health, University of Iowa, Iowa City, IA
1992	Experimental Exposures to Grain Dust	National Institute of Environmental Health Sciences, Center Directors Annual Meeting, University of Iowa, Iowa City, IA
1992	Assessment of Bioaerosol Exposures in Dairy Barns	Occupational and Environmental Health Seminar, Univ. of Iowa, Iowa City, IA
1993	Fumonisin and Supercritical Fluid Extraction	Occupational and Environmental Health Seminar, Univ. of Iowa, Iowa City, IA
1993	Indoor Air Quality: Health Impact of an Engineering Problem	Department of Mechanical Engineering Seminar Series, University of Iowa, Iowa City, IA
1994	Of Mites and Molds	Department of Mechanical Engineering Seminar Series, University of Iowa, Iowa City, IA
1994	Indoor Air Pollution in Homes	Occupational and Environmental Health Seminar, Univ. of Iowa, Iowa City, IA
1994	Hazardous Agents in Agricultural Dust	Occupational and Environmental Health Seminar, Univ. of Iowa, Iowa City, IA
1994	Cytokine Expression by Neutrophils And Macrophages In Vivo	Occupational and Environmental Health Seminar, Univ. of Iowa, Iowa City, IA
1994	Aerosol Generation and Analysis	Pulmonary Division Fellows Seminar, University of Iowa, Iowa City, IA

1995	Indoor Air Pollution	Department of Internal Medicine Allergy/Immunology Grand Rounds, University of Iowa, Iowa City, IA
1995	Longitudinal Estimates of Pulmonary Function Decline in Grain Workers	Occupational and Environmental Health Seminar, Univ. of Iowa, Iowa City, IA
1995	Effects of Acute Endotoxin-Induced Inflammation on Gene Therapy Using Adenoviral Vectors	Cystic Fibrosis Center Seminar, University of Iowa, Iowa City, IA
1996	An Overview of the U.I. Environmental Health Sciences Research Center	Occupational and Environmental Health Seminar, University of Iowa, Iowa City, IA
1996	Respiratory Health Effects of Machining Fluids	Pulmonary Biology Research Seminar, University of Iowa, Iowa City, IA
1996	Murder, Magic and Medicine	Occupational and Environmental Health Seminar, Univ. of Iowa, Iowa City, IA
1996	Early Inflammatory Responses to Adenoviral Vectors In Vivo	Cystic Fibrosis Center Seminar, University of Iowa, Iowa City, IA
1996	Inflammatory Responses and Bacterial Clearance in Wild-Type and ΔF508 Mice	Cystic Fibrosis Center Seminar, University of Iowa, Iowa City, IA
1998-1999	Bioaerosols Journal Club	Preventive Medicine and Environmental Health, University of Iowa, Iowa City, IA
1999	Source Separated Organic Waste: A Public and Occupational Health risk?	Environmental Health Sciences Research Center Seminar, University of Iowa, Iowa City, IA
2000	Research in Childhood Asthma	Iowa Secondary Student Training Program Seminar Series, University of Iowa, Iowa City, IA
2001	Environmental Factors that Induce Asthma	Environmental Studies Seminar Series, University of Iowa, Iowa City, IA
2001	Environmental Risk Factors for Childhood Asthma	Environmental Engineering Seminar Series, University of Iowa, Iowa City, IA
2001	Environmental Intervention Against Risk Factors for Childhood Asthma	Pediatric Grand Rounds, Department of Pediatrics, Univ. of Iowa, Iowa City, IA
2005	Domestic Endotoxin Exposure and Asthma: Atopics Too	Grand Rounds, Department of Pediatrics, Allergy & Pulmonary Division, Univ. of Iowa, Iowa City, IA
2006	Animal Models for Pulmonary Diseases in the Pulmonary Toxicology Facility	University of Iowa Environmental Health Sciences Research Center Retreat, Iowa City, Iowa

2007	Environmental Health Impacts of Concentrated Animal Feeding Operations: Anticipating Hazards, Searching for Solutions	University of Iowa Toxic Talk Series, Project on the Rhetoric of Inquiry (POROI), Iowa City, Iowa
2008	Endotoxin: Friend and Fiend	University of Iowa Graduate Program in Human Toxicology Seminar, Iowa City, Iowa
2008	Endotoxin: a Classic PAMP	Dept/ Chemical & Biochemical Engineering, University of Iowa, Iowa City, IA
2010	The U.I. Environmental Health Sciences Research Center	Interdisciplinary Health Group Meeting, U.I. Public Policy Center, Iowa City, IA

Teaching Committees

1987-1988	Curriculum Committee, Dept. of Industrial Environmental Health Sciences
1988-1991	Curriculum Planning Activities, Div. of Occupational and Environmental Health
1989-1990	Curriculum Committee, Dept. of Preventive Medicine and Environmental Health
1990-1991	Curriculum Committee, Dept. of Preventive Medicine and Environmental Health
1991-1993	MS Examination Committee, Dept. of Preventive Medicine and Environmental Health
1993-1996	College of Medicine, Prizes, Awards, and Fellowships Committee
1994-1996	Admissions Committee, Division of Occupational and Environmental Health
1996-1999	Student Training Committee, Division of Occupational and Environmental Health
1997	Chair, Teaching and Training Strategic Planning Committee, Division of Occupational and Environmental Health
1998-1999	Masters of Public Health Implementation Task Force, Department of Preventive Medicine and Environmental Health
1999-2004	Chair, Curriculum Committee, College of Public Health
2001-2002	Post Doctoral Education Advisory Committee, University of Iowa
2001-2002	Enhancement of the Post Doctoral Experience Subcommittee, University of Iowa
2002-2003	Co-Chair, College of Medicine/College of Public Health Research Week Committee, University of Iowa
2006	Chair, Review of the CPH Program in Public Health Genetics
2006-present	Member, Interdisciplinary Graduate Program in Human Toxicology Admissions Committee
2007-2009	Member, Admissions Committee Biosciences Graduate Programs
2008	Member, Sustainability Curricula Task Force, Office of the President

Formal Study to Improve Teaching Abilities

1998	Wageningen University, Netherlands	Dutch Language A1: Reading, Writing, Listening and Speaking (12 week course, 72 hours) (To help me teach Dutch students while on sabbatical)
1999	University of Iowa	New Technologies in the Learning Environment (5 day course)
2000	University of Iowa	Interactive Distance Education (5 day course)
2005	University of Iowa	New Experiences with Teaching Technology (2 day course)
2006	James Boswell Institute, Utrecht University, Netherlands	Dutch Language A2: Reading, Writing, Listening and Speaking (6 week course, 72 hours) (To help me teach Dutch students while on sabbatical)

E. Course Materials Developed

Development of a course in Department of Industrial Environmental Health Sciences, University of Pittsburgh: IEHS:279 - Immunotoxicology, 1987 (with Dr. Meryl Karol)

Development of two new courses in Department of Preventive Medicine and Environmental Health, University of Iowa:
63:270 - Special Topics in Toxicology, 1989
63:193 - Industrial Hygiene, 1989

Major restructuring of core course in Department of Preventive Medicine and Environmental Health, University of Iowa:
63:202 - Environmental Health, 1994-1995

Modification of core course for delivery via distance learning Department of Occupational and Environmental Health, University of Iowa:
175:197 – Environmental Health, 2002

Development of a new course in Department of Occupational and Environmental Health, University of Iowa: 175:101 – Health, Work and Environment, 2004 (Effort led by David Osterberg).

Development of a new PhD and Post-graduate course module at Katholiek Universiteit Leuven, Belgium *Biologishe agentia: Schimmels* [Biological agents: Molds]

Development of a new PhD and Post-graduate course - 40 contact hours. Occupational and Environmental Airborne Contaminants: Assessment of Exposures and Health Outcomes. University of Aarhus, Århus, Denmark. Instructors: Drs. Peter Thorne, Torben Sigsgaard, Vivi Schlünssen.

Development of a new course in Department of Occupational and Environmental Health, University of Iowa: 175:195 – Sustainability and Global Environmental Health, 2008.

Development of an Undergraduate Certificate in Sustainability, University of Iowa, 2008-2009.

SCHOLARSHIP

A. Publications or Creative Works

Peer Reviewed Papers

1. Thorne PS, Lightfoot EN, Gonder JC, Will JA. Animal chamber for *in vivo* testing of toxic gases. Lab Anim Sci 33:476-480, 1984.
2. Lightfoot EN, Thorne PS, Stoll LL. Dimensionless presentation of performance data for fans and blowers. Am Inst Chem Engrg J 30:341-345, 1984.
3. Thorne PS, Lightfoot EN, Albrecht RM. Physicochemical characterization of cryogenically ground, size separated, fibrogenic particles. Environ Res 36(1):89-110, 1985.
4. Fischer JJ, Ellakkani M, Thorne PS, Weyel D, Alarie Y, Karol MH. Endotoxin activity and microbial study of cotton dust particles of known sizes. In: Jacobs RR, Wakelyn PJ, editors. Cotton Dust: Proceedings of the Ninth Cotton Dust Research Conference 144-145, 1985.
5. Thorne PS, Hillebrand J, Magreni C, Riley EJ, Karol MH. Experimental sensitization to subtilisin: 1. production of immediate-onset and late-onset pulmonary reactions. Toxicol Appl Pharmacol 86(1):112-123, 1986.
6. Jones WG, Thorne PS, Clere JL. Low cost polarized light microscopy. Appl Ind Hyg 1:191-195, 1986.
7. Thorne PS, Hillebrand JA, Lewis GR, Karol MH. Contact sensitivity by diisocyanates: potencies and cross-reactivities. Toxicol Appl Pharmacol 87(1):155-165, 1987
8. Olaniran N, Thorne PS, Ellakkani M, Karol MH. Serologic evaluation of guinea pigs exposed during twelve months to cotton dust. In: Wakelyn PJ, Jacobs RR, editors. Cotton Dust: Proceedings of the Tenth Cotton Dust Research Conference 134-137, 1986.
9. Cockrell B, Ellakkani M, Thorne PS, Karol MH. Histopathology of guinea pigs exposed for 12 months to cotton dust. In: Wakelyn PJ, Jacobs RR, editors. Cotton Dust: Proceedings of the Tenth Cotton Dust Research Conference 138-139, 1986.
10. Karol MH, Thorne PS, Hillebrand J. The immune response as a biological indicator of exposure. Proceedings of the International Symposium on Biochemical & Cellular Indices of Human Toxicity in Occupational Environmental Medicine, Occupational & Environmental Chemical Hazards Ch. 6:86-90, 1987.
11. Lightfoot EN, Thorne PS, Jones RL, Hansen JL, Romine RR. Laboratory studies on mechanisms for the degradation of aldicarb, aldicarb sulfoxide, and aldicarb sulfone. Environ Toxicol Chem 6(5):377-94, 1987.
12. Hillebrand JA, Thorne PS, Karol MH. Experimental sensitization to subtilisin. 2. Production of specific antibodies following inhalation exposure of guinea pigs. Toxicol Appl Pharmacol 89(3):449-456, 1987.
13. Thorne PS, Yeske CP, Karol MH. Monitoring guinea pig core temperature by telemetry during inhalation exposures. Fundam Appl Toxicol 9(3):398-408, 1987.
14. Thorne PS, Karol MH. Assessment of airway reactivity in guinea pigs: Comparison of methods employing whole body plethysmography. Toxicology 52(1-2):141-163, 1988.
15. Karol MH, Hillebrand JA, Thorne PS. Characteristics of weekly pulmonary hypersensitivity responses elicited in the guinea pig by inhalation of ovalbumin aerosols. Toxicol Appl Pharmacol; 100(2):234-246, 1989.
16. Thorne PS, Karol MH. Association of fever with late-onset pulmonary hypersensitivity responses in the guinea pig. Toxicol Appl Pharmacol 100(2):247-258, 1989.
17. Thorne PS, Hawk C, Kaliszewski SD, Guiney PD. The noninvasive mouse ear swelling assay: I. refinements for detecting weak contact sensitizers. Fundam Appl Toxicol 17(4):790-806, 1991.

18. Thorne PS, Hawk C, Kaliszewski SD, Guiney PD. The non-invasive mouse ear swelling assay: II. testing the contact sensitizing potency of fragrances. Fundam Appl Toxicol 17:807-820, 1991.

19. Thorne PS, Kiekhaefer MS, Whitten P, Donham KJ. Comparison of bioaerosol sampling methods in barns housing swine. Appl Environ Microbiol 58(8):2543-2551, 1992.

20. Schmidt LE, Thorne PS, Watt JL, Schwartz DA. Is an abbreviated bronchial challenge with histamine valid? Chest 101(1):141-145, 1992.

21. Thorne PS. The noninvasive mouse ear swelling assay. Reply. Fundamental Applied Toxicology 19:157-158, 1992.

22. Thorne PS. Sump additives as a source of bioaerosols in a school building. Vet Hum Toxicol 35(2):141-143, 1993.

23. Clapp WD, Thorne PS, Frees KL, Zhang X, Lux CR, Schwartz DA. The effects of inhalation of grain dust extract and endotoxin on upper and lower airways. Chest 104(3):825-830, 1993.

24. Lacey J, Auger P, Eduard W, Norn S, Rohrbach MS, Thorne PS. Tannins and mycotoxins. Am J Ind Med 25(1):141-144, 1994.

25. Thorne PS. Experimental grain dust atmospheres generated by wet and dry aerosolization techniques. Am J Ind Med 25(1):109-112, 1994.

26. Donham KJ, Thorne PS. Agents in organic dust: Criteria for a causal relationship. Am J Ind Med 25(1):33-39, 1994.

27. Clapp WD, Becker S, Quay J, Watt JL, Thorne PS, Frees KL, Zhang X, Koren HS, Lux CR, Schwartz DA. Grain dust-induced airflow obstruction and inflammation of the lower respiratory tract. Am J Respir Crit Care Med 150(3):611-617, 1994.

28. Schwartz DA, Thorne PS, Jagielo PJ, White GE, Bleuer SA, Frees KL. Endotoxin responsiveness and grain dust-induced inflammation in the lower respiratory tract. Am J Physiol 267(5):L609-617, 1994.

29. Thorne PS, Lange JL, Bloebaum P, Kullman GJ. Bioaerosol sampling in field studies: Can samples be express mailed? Am Ind Hyg Assoc J 55(11):1072-1079, 1994.

30. Thorne PS. Book review. *Arsenic in the Environment*. Chem Engineering Sci 50(4):741-742, 1995.

31. Kiekhaefer MS, Donham KJ, Whitten P, Thorne PS. Cross seasonal studies of airborne microbial populations and environment in swine buildings: Implications for worker and animal health. Ann Agric Environ Med 2:37-44, 1995.

32. DeKoster JA, Thorne PS. Bioaerosol concentrations in noncomplaint, complaint, and intervention homes in the Midwest. Am Ind Hyg Assoc J 56(6):573-580, 1995.

33. Schwartz DA, Thorne PS, Yagla SJ, Burmeister LF, Olenchock SA, Watt JL, Quinn TJ. The role of endotoxin in grain dust-induced lung disease. Am J Respir Crit Care Med 152:603-608, 1995.

34. Thorne PS. Book review. *Patty's Industrial Hygiene and Toxicology.* Chem Engineering Sci 50(11):1846-1847, 1995.

35. Subramanian P, Teesch L, Thorne PS. Degradation of 3,5-dimethyl-tetrahydro-2H-1,3,5-thiadiazine-2-thione in aqueous aerobic media. Environ Toxicol Chem 15(4):503-513, 1996.

36. Fuortes LJ, Weih LA, Jones M, Burmeister L, Thorne PS, Pollen S, Merchant JA. Epidemiologic assessment of laboratory animal allergy among university employees. Am J Ind Med 29(1):67-74, 1996.

37. Blaski CA, Watt JL, Quinn TJ, Thorne PS, Schwartz DA. Nasal lavage cellularity, grain dust, and airflow obstruction. Chest 109(4):1086-1092, 1996.

38. Jagielo PJ, Thorne PS, Watt JL, Frees KL, Quinn TJ, Schwartz DA. Grain dust and endotoxin inhalation challenges produce inflammatory responses in normal subjects. Chest 110(1):263-270, 1996.

39. Jagielo PJ, Thorne PS, Kern JA, Quinn TJ, Schwartz DA. The role of endotoxin in grain dust induced lung inflammation in mice. Am J Physiol 270(6):L1052-L1059, 1996.

40. Blaski CA, Clapp WD, Thorne PS, Quinn TJ, Watt JL, Frees KL, Yagla SJ, Schwartz DA. The role of atopy in grain dust induced airway disease. Am J Resp Crit Care Med 154:334-340, 1996.

41. Sprince NL, Palmer JA, Popendorf W, Thorne PS, Selim MI, Zwerling C, Miller ER. Dermatitis among automobile production machine operators exposed to metal-working fluids. Am J Ind Med 30(4):421-429, 1996.

42. Thorne PS, DeKoster JA, Subramanian P. Environmental assessment of aerosols, bioaerosols, and airborne endotoxins in a machining plant. Am Ind Hyg Assoc J 57(12):1163-1167, 1996.

43. Thorne PS, DeKoster JA, Subramanian P. Pulmonary effects of machining fluids in guinea pigs and mice. Am Ind Hyg Assoc J 57(12):1168-1172, 1996.

44. Subramanian P, Reynolds S, Thorne PS, Donham K, Stookesberry J, Thu K. Assessment of airborne ammonia in a swine farming environment by the fluorimetric enzyme method. Intl J Environ Anal Chem 64:301-312, 1996.

45. Popendorf WJ, Miller ER, Sprince NL, Selim MI, Thorne PS, Davis CS, Jones ML. The utility of preliminary surveys to detect the cause of acute metalworking fluid hazards. Am J Ind Med 30:744-749, 1996.

46. The Iowa Persian Gulf Study Group, Thorne PS. Self-reported illness and health status among Gulf War veterans: A population-based study. JAMA 277(3):238-245, 1997.

47. Deetz DC, Jagielo PJ, Thorne PS, Bleuer SA, Quinn TJ, Schwartz DA. The kinetics of grain dust-induced inflammation of the lower respiratory tract. Am J Respir Crit Care Med 155(1):254-259, 1997.

48. Thu K, Donham K, Ziegenhorn R, Reynolds S, Thorne PS, Subramanian P, Whitten P, Stookesberry J. A control study of the physical and mental health of residents living near a large-scale swine operation. J Agric Safety Health 3(1):13-26, 1997.

49. Thorne PS, Subramanian P, Sutphin JE, O'Neill ME, Rautiainen R, Reynolds SJ, Merchant JA. Ocular trauma from ballast fluid after a tractor tire explosion. J Agric Safety Health 3(1):41-54, 1997.

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51. Lange JL, Thorne PS, Lynch N. Application of flow cytometry and fluorescent *in situ* hybridization for assessment of exposures to airborne bacteria. Appl Environ Microbiol 63(4):1557-1563, 1997.

52. Reynolds SJ, Etre L, Thorne PS, Whitten P, Selim M, Popendorf WJ. Laboratory comparison of vacuum, OSHA, and HUD sampling methods for lead in household dust. Am Ind Hyg Assoc J 58(6):439-446, 1997.

53. Schwartz DA, Quinn TJ, Thorne PS, Sayeed S, Yi A-K, Krieg AM. CpG motifs in bacterial DNA cause inflammation in the lower respiratory tract. J Clin Invest 100(1):68-73, 1997.

54. Reynolds SJ, Donham KJ, Stookesberry J, Thorne PS, Subramanian P, Thu K, Whitten P. Air quality assessments in the vicinity of swine production facilities. J Agromedicine 4:37-45, 1997.

55. Thorne PS, Reynolds SJ, Milton DK, Bloebaum PD, Zhang X, Whitten P, Burmeister LF. Field evaluation of endotoxin air sampling assay methods. Am Ind Hyg Assoc J 58(11):792-799, 1997.

56. Lange JL, Thorne PS, Kullman GJ. Determinants of viable bioaerosol concentrations in dairy barns. Ann Agric Environ Med 4:187-194, 1997.

57. Fuortes LJ, Weih L, Pomrehn P, Thorne PS, Jones J, Burmeister L, Merchant JA. Prospective epidemiologic evaluation of laboratory animal allergy among university employees. Am J Ind Med 32:665-669, 1997.

58. Kullman GJ, Thorne PS, Waldron PF, Marx JJ, Ault B, Lewis DM, Siegel PD, Olenchock SA, Merchant JA. Organic dust exposures from work in dairy barns. Am Ind Hyg Assoc J 59(6):403-413, 1998.

59. Kline JN, Waldschmidt TJ, Businga TR, Lemish JE, Weinstock JV, Thorne PS, Krieg AM. Cutting edge: Modulation of airway inflammation by CpG oligodeoxynucleotides in a murine model of asthma. J Immunol 160:2555-2559, 1998.

60. Reynolds SJ, Chao DY, Thorne PS, Subramanian P, Waldron PF, Selim M, Whitten PS, Popendorf WJ. Field comparison of methods for evaluation of vapor/particle phase distribution of ammonia in livestock buildings. J Agric Safety Health 4(2):81-93, 1998.

61. Schenker MB, Christiani D, Cormier Y, Dimich-Ward H, Doekes G, Doman J, Douwes J, Dowling K, Enarson D, Green F, Heederik D, Husman K, Kennedy S, Kullman G, Lacasse Y, Lawson B, Malmberg P, May J, McCurdy S, Merchant J, Myers J, Nieuwenhuijsen M, Olenchock S, Saiki C, Schwartz D, Sieber J, Thorne PS, Wagner G, White N, XuX, Chan-Yeung M. Respiratory health hazards in agriculture. Am J Respir Crit Care Med. 158:S1-S76; 1998.

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63. Thorne PS, McCray PB, Howe TS, O'Neill MA. Early-onset inflammatory responses *in vivo* to adenoviral vectors in the presence or absence of LPS-induced inflammation. Am J Respir Cell Molec Biol; 20(6):1155-1164,1999.

64. Reynolds SJ, Black DW, Breuer G, Burmeister LF, Fuortes LJ, Smith TF, Stein M, Subramanian P, Thorne PS, Whitten P. Indoor environmental quality in large office buildings in the Midwest U.S. In: Measurement of Toxic and Related Air Pollutants, Proceedings of a Specialty Conference Cosponsored by the Air & Waste Management Association and the U.S. Environmental Protection Agency's National Exposure Research Laboratory, Volume 1: 207-223; September 1-3, 1998.

65. Chun DT, Chew V, Bartlett K, Gordon T, Jacobs RR, Larsson B, Larsson L, Lewis DM, Liesivuori J, Michel O, Milton DK, Rylander R, Thorne PS, White EM, Brown ME. Preliminary report on the results of the first phase of a round robin endotoxin assay study using cotton dust. In: Dugger P, Richter DA, editorial coordinators. 1998 Proceedings of the Beltwide Cotton Conferences; Jan 5-9; San Diego, CA. National Cotton Council of America, Memphis, TN. 1:195-198, 1998.

66. McCray PB, Zabner J, Jia HP, Welsh MJ, Thorne PS. Efficient killing of inhaled bacteria in ΔF508 mice: role of airway surface liquid composition. Am J Physiol (Lung Cell. Mol. Physiol.)277(1):L183-L190, 1999.

67. Nonnenmann MW, Rautiainen RH, Donham KJ, Kirychuk SP, Reynolds SJ, O'Shaughnessy PT, Thorne PS. Vegetable oil sprinkling as a dust reduction method in a swine confinement. Proceedings of the International Symposium on Dust Control in Animal Production Facilities, Århus, Denmark, 271-278, May 30-Jun 2, 1999.

68. Kirychuk S, Donham K, Reynolds S, Burmeister L, Barber E, Thorne P, Senthilselvan A, Rautiainen R. Oil/water sprinkling intervention in a swine building. Proceedings of the International Symposium on Dust Control in Animal Production Facilities, Århus, Denmark, 335-342, May 30-Jun 2; 1999.

69. Mahar S, Reynolds SJ, Thorne PS. Worker exposures to particulates, endotoxins, and bioaerosols in two refuse-derived fuel plants. Am Ind Hyg Assoc J 60(5):679-683, 1999.

70. Chun DT, Chew V, Gordon T, Jacobs RR, Larsson B-M, Larsson L, Lewis DM, Liesivuori J, Michel O, Milton DK, Rylander R, Thorne PS, White EM, Brown M. A quick summary of the highlights of parts 1 and 2 of the first round robin endotoxin assay study and a brief preview of the next round. In: 1999 Proceedings of the Beltwide Cotton Conferences; Vol. 1, Jan 3-7; Orlando, FL, pages 132-138, (Paul Dugger, Deborah A. Richter, Editorial Coordinators). National Cotton Council of America, Memphis, TN, pp. 1-754; 1999.

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73. Wouters IM, Douwes J, Doekes G, Thorne PS, Heederik DJJ. Increased levels of markers of microbial exposure in homes with indoor storage of organic household waste. Appl Environ Microbiol 66(2):627-631, 2000.

74. Chun DT, Chew V, Bartlett K, Gordon T, Jacobs RR, Larsson B-M, Larsson L, Lewis DM, Liesivuori J, Michel O, Milton DK, Rylander R, Thorne PS, White EM, Brown ME. Preliminary report on the results of the second phase of a round-robin endotoxin assay study using cotton dust. Appl Occup Environ Hyg 15(1):152-157, 2000.

75. Mueller-Anneling L, Gilchrist MJ, Thorne PS. Ehrlichia chaffeensis antibodies in white-tailed deer, Iowa 1994 & 1996. Emerg Infect Dis 6(4):397-400, 2000.

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88. Wouters IM, Douwes J, Thorne PS, Heederik D, Doekes G. Inter- and intraindividual variation of endotoxin- and β(1→3) – glucan-induced cytokine responses in a whole blood assay. Toxicol Ind Health. 18(1):15-27, 2002.

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93. Roy CJ, Thorne PS. Exposure to particulates, microorganisms, β(1-3)-glucans and endotoxins during soybean harvesting. Am Ind Hyg Assoc J 64(4): 487-495, 2003.

94. Thorne PS. Exposures of Kuwait oil fires and their association with asthma and bronchitis among Gulf War veterans. Response. Environ Health Perspec 111(9):A452, 2003.

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241. Thorne PS and Metwali N. Enzyme Immunoassay (EIA) for Bacterial Peptidoglycan (PGN) Assessment in Air and House Dust Samples. European Respiratory Society Annual Congress, Amsterdam, Netherlands, September 2011.

242. Thorne PS, Kim JS, Adamcakova-Dodd A. Copper Nanoparticles (Cu NP) Generate Reactive Oxygen Species (ROS) After Air Delivery to Alveolar Type-II Cells *In Vitro*. European Respiratory Society Annual Congress, Amsterdam, Netherlands, September 2011.

243. Thorne PS, Hoppe KA, Hadina S, Adamcakova-Dodd A, Weiss JP. Bioactivity of ^{14}C-Labeled Endotoxin in Aggregates, Shed Blebs and Whole Bacteria: Potency Comparison in the LAL Assay, Cell Cultures, and Mouse Bioassays. European Respiratory Society Annual Congress, Amsterdam, Netherlands, September 2011.

B. Areas of Research Interest

1. Environmental risk factors for asthma
2. Exposure assessment strategies and methodologies for bioaerosols and aeroallergens
3. Animal inhalation toxicology models of pulmonary diseases
4. Mechanisms of bioaerosol-induced lung inflammation
5. Toxicity of manufactured nanomaterials
6. Indoor air quality – endotoxins, aeroallergens, molds and mites
7. Environmental exposures to semi-volatile PCBs

C. Grants Received

University of Iowa Pilot Grants

Source, Title, P.I.	% Effort for Thorne	Direct Funds Funding Period
College of Medicine Research Committee: Development of a Guinea Pig Inhalation Model for Hypersensitivity Pneumonitis Induced by Micropolyspora Faeni PS Thorne, PI	10%	$5,000 1989-90
CDC/NIOSH: Center for Agriculture Disease and Injury Research, Education, and Prevention – Pilot Project: Pulmonary Toxicity Induced by Inhalation of Fusarium Mycotoxins PS Thorne, PI	5%	$10,000 1990-91
Center for Health Effects of Environmental Contamination: Assessment of Exposures to Bioaerosols in “Sick” and “Healthy” Buildings PS Thorne, PI	5%	$15,000 1991-92
Environmental Health Sciences Research Center, Pilot Grant Program: Investigation of Vapor/Particle Phase Distribution of Ammonia in Enclosed Livestock Buildings SJ Reynolds, PI PS Thorne, Co-Investigator	2%	$10,000 1991-92
Environmental Health Sciences Research Center, Pilot Grant Program: Neutrophil Activating Cytokines in the Lung Disease of Grain Handlers RB Fick, PI PS Thorne, Co-Investigator	2%	$10,000 1991-92
Environmental Health Sciences Research Center, Pilot Grant Program: Endotoxin Assays and Correlates in Agricultural Environments PS Thorne, Co-PI	5%	$9,500 1992-93
Center for Health Effects of Environmental Contamination: Comparison of Sampling Methods for Lead in Dust SJ Reynolds, PI PS Thorne, Co-Investigator	2%	$14,386 1992-93
Center for Health Effects of Environmental Contamination: Air Quality Studies and Health Assessments of Individuals Living in the Vicinity of Swine Confinement Operations KJ Donham, PI PS Thorne, Co-Investigator	5%	$15,000 1993-94
Center for Health Effects of Environmental Contamination: Assessment of Exposures to Bioaerosols Among Midwest Farmers PS Thorne, PI	10%	$15,000 1993-94

Environmental Health Sciences Research Center, Pilot Grant Program: Development of Physiologic Monitoring for a Two Strain Inhalation Toxicology Mouse Model PS Thorne, PI	10%	$9,000 1993-94
Center for International Rural and Environmental Health: Pulmonary Health Effects of Wheat Threshing PS Thorne, PI	5%	$5,000 1995
CDC/NIOSH: Great Plains Center for Agricultural Health: Assessment of Ammonia Vapor/Particles in Agricultural Aerosols SJ Reynolds, PI PS Thorne, Investigator	2%	$13,699 1995-96
Environmental Health Sciences Research Center, Pilot Grant Program: Development of Bioaerosol Sampling Methods Using Molecular Biology and Biochemistry Techniques PS Thorne, PI	5%	$ 15,000 1995-96
Center for Health Effects of Environmental, Contamination: Respiratory Health Effects of Soybean Fungal Bioaerosols PS Thorne, PI	10%	$14,999 1997-98
Environmental Health Sciences Research Center, Pilot Grant Program: Factors Influencing Surface Sampling of House Dust Mite Allergens from Worn Carpets PS Thorne, PI	5%	$20,000 4/1/99-3-31/00
Environmental Health Sciences Research Center, Pilot Grant Program: Quantification of Airborne Bacteria by Direct Most Probable Number-Polymerase Chain Reaction C Duchaine, PI PS Thorne, Co-PI	5%	$20,000 4/01/99–3/31/00
Cystic Fibrosis Center: Development of a Chronic Infection Model for Testing the Efficacy of Synthetic Anti-microbial Peptides PS Thorne, PI	2%	$5,000 2000
Center for Health Effects of Environmental Contamination: Enhancing Bioaerosol Exposure Assessment: A Comparison of Three Commercially Available Impingers TA Pearce, Co-PI PS Thorne, Co-PI	5%	$20,000 2000-01
Environmental Health Sciences Research Center, Pilot Grant Program: Impact of Placental Contamination on Th1/Th2 Cytokine Secretion in Cord Blood and Allergy Development in Children PS Thorne, PI	5%	$5,000 4/01/00-3/31/01
Center for Health Effects of Environmental Contamination: Exploratory GIS Studies of the Association of Rural Ambient Air Quality with Asthmatic Children of a Small Area Cohort G Ruston, PI PS Thorne, Investigator	5%	$17,999 2000-01

Environmental Health Sciences Research Center, Pilot Grant Program: Subchronic Endotoxin Lung Injury as a Model to Study Airway Wall Remodeling C George, PI PS Thorne Co-Investigator	5%	$20,000 6/1/01-4/01/02
Environmental Health Sciences Research Center, Pilot Grant Program: Arsenic Exposure and Melanoma In Iowa LK Dennis, PI PS Thorne Co-Investigator	5%	$20,000 6/1/01-4/01/02
Environmental Health Sciences Research Center, Pilot Grant Program: Worker Exposure to Airborne Bacteria and Endotoxin in Wastewater Treatment Plants S Reynolds, PI PS Thorne Co-Investigator	5%	$20,000 6/01/01-4/01/02
Environmental Health Sciences Research Center, Pilot Grant Program: Effects of Early Life Endotoxin Inhalation on Murine Hyperresponsiveness in Adulthood C George, PI PS Thorne, Co-Investigator	0%	$20,000 7/01/02-6/30/03
Environmental Health Sciences Research Center, Pilot Grant Program: Understanding Selenium Levels in Iowa and Their Association with Prostate Cancer LK Dennis, PI PS Thorne, Co-Investigator	0%	$20,000 7/01/02-6/30/03
Environmental Health Sciences Research Center, Pilot Grant Program: The Role of Neonatal and Juvenile Inhalation Exposures on Pulmonary Hyperesponsiveness and Lung Growth K Kulhankova, PI; PS Thorne, Co-PI	5%	$20,000 10/01/04-09/31/05
Environmental Health Sciences Research Center, Pilot Grant Program: The Role of MD-2 in Endotoxin Responsiveness *In Vivo* S Hađina, PI; PS Thorne, Co-PI	5%	$20,000 10/01/04-09/31/05
Environmental Health Sciences Research Center, Pilot Grant Program: Transformations of Metal-Containing Aerosols upon Exposure to Atmospheric Gases and Its Impact on Toxicity. VH Grassian, PI; PS Thorne, Co-I, J Baltrusaitis, Co-I	10%	$30,000 03/30/10-03/29/11
Environmental Health Sciences Research Center, Pilot Grant Program: Role of Agglomeration State of Engineered Nanomaterials on Pulmonary Cell Fate and Toxicity. J Fiegel, PI; T Peters, Co-I; PS Thorne, Co-I	5%	$30,000 03/30/10-03/29/11

External Funding

Source, Title, P.I.	% Effort for Thorne	Direct Funds Funding Period
NIEHS 2R01 ES01532: Respiratory Anaphylaxis to Industrial Chemicals MH Karol, PI PS Thorne, Co-Investigator	100%	$916,964 1986-1991
NIH/NIAID: Epidemiological Assessment of Laboratory Animal Allergy, Project IV – Asthma and Allergic Disease Center JA Merchant, PI PS Thorne, Co-Investigator	5%	$653,010 1987-1992
S. C. Johnson & Son, Inc. : Development and Validation of a Mouse Model for Allergic Contact Dermatitis PS Thorne, PI	20%	$21,490 1989-90
UAW/Chrysler National Joint Committee on Health and Safety: Control Approaches to Reducing Cutting Fluid Exposures PS Thorne, Co-PI	10%	$550,000 1990-93
CDC/NIOSH: Center for Agricultural Disease and Injury Research, Education and Prevention – Industrial Hygiene Core PS Thorne, Associate Director	10%	$306,809 1990-95
CDC/NIOSH: Iowa Farm Family Health Surveillance Project WJ Popendorf, PI PS Thorne, Investigator	5%	$1,343,222 1990-95
CDC/NIOSH: Iowa Occupational Safety and Health Training Program JA Merchant, PI PS Thorne, Mentor	5%	$1,764,613 1990-95
NIEHS 5 P30 ES05605: Environmental Health Sciences Research Center JA Merchant, Center Director -Environmental Measurements Facility PS Thorne, Facility Director	 10%	$5,034,400 1990-95 $361,036 1990-95
U.S. Dept. of Veterans Affairs: Grain Dust-Induced Airway Disease: A Longitudinal Study DA Schwartz, PI PS Thorne, Co-Investigator	10%	$500,000 1990-95
CDC/NIOSH: Center for Agricultural Disease of Injury Research, Education and Prevention - Project III - Assessment of Respiratory Disease Among Dairy Farmers PS Thorne, Co-PI	10%	$602,736 1990-95
CDC/NIOSH: Center for Agricultural Disease and Injury Research, Education, and Prevention - Experimental Exposures to Grain Dust PS Thorne, PI	10%	$659,313 1990-95

Johnson's Wax Fund Fellowship Program: Assessment of Pulmonary Responses to Preservatives in Pump Spray-Delivered Products PS Thorne, PI	5%	$35,000 1991-94
University of California – Davis: Dust Exposure in Grape and Citrus Workers M Schenker, PI PS Thorne, Investigator	2%	$40,000 1992-93
UAW/GM National Joint Committee on Health and Safety: Acute Respiratory Health Effects of Machining Fluids PS Thorne, PI	10%	$401,000 1992-95
NIEHS: Environmental Health Sciences Research Center Supplement - Inhalation Toxicology Facility PS Thorne, Facility Director	10%	$150,000 1993-95
Cystic Fibrosis Foundation: Aerosol Delivery of Liposome/DNA Complexes to the Airway Epithelium of Neonatal Rats PS Thorne, Co-PI	10%	$90,000 1994-95
CDC: Health Assessment of Persian Gulf War Veterans from Iowa DA Schwartz, PI PS Thorne, Investigator	10%	$1,539,000 1994-96
CDC/NIOSH: Great Plains Center for Agricultural Health: Interlaboratory Comparison of Endotoxin Assays PS Thorne, Co-PI	2%	$20,548 1995-96
CDC/NIOSH: Great Plains Center for Agricultural Health, Industrial Hygiene Core SJ Reynolds, PI PS Thorne, Associate Director	2%	$23,839 1995-96
NIEHS 5 P30 ES05605: Environmental Health Sciences Research Center JA Merchant, Center Director		
-Administrative Core PS Thorne, Associate Center Director	5%	$203,665 1995-96
-Inhalation Toxicology Facility PS Thorne, Facility Director	10%	$131,971 1995-96
EPA: Indoor Air Quality in Large Office Buildings in the Midwest SJ Reynolds, PI PS Thorne, Investigator	10%	$533,349 1995-98
NIEHS: Biological Determinants of Environmental Airway Injury DA Schwartz, PI PS Thorne, Co-Investigator	8%	$937,793 1995-00
NIH/Fogarty International Center: International Training Program for Rural and Environmental Health BC Kross, PI PS Thorne, Mentor	3.8%	$887,832 1995-00

FIC/NIH: 5 D43 TW00621 Iowa International Research and Training in Environmental & Occupational Health TM Cook, PI	0%	$3,311,976 9/30/95-09/29/01
CDC/NIOSH: Great Plains Center for Agricultural Health: Bioaerosols Research for Agricultural Environments PS Thorne PI	10%	$36,430 1995-96
Cystic Fibrosis Foundation: Early Inflammatory Responses to Adenoviral Vectors: *In Vivo* and *In Vitro* Studies PS Thorne, PI	10%	$100,000 1996-97
CDC/NIOSH: Great Plains Community Intervention Projects KJ Donham, PI PS Thorne, Investigator	2%	$146,080 1996-97
CDC/NIOSH: Iowa Farm Family Health Hazard Surveillance Project C Zwerling, PI PS Thorne, Investigator	2%	$270,269 1996-00
CDC/NIOSH: Iowa Occupational Safety and Health Training Program NL Sprince, PI PS Thorne, Mentor	2%	$375,000 1996-00
CDC/NIOSH: Great Plains Center for Agricultural Health, Toxicology Core PS Thorne, Core Director	10%	$366,457 1996-01
NIEHS 5 P30 ES05605: Environmental Health Sciences Research Center JA Merchant, Center Director; PS Thorne, Deputy Director		$5,184,707 04/01/96-03/31/01
- Administrative Core PS Thorne, Deputy Director	15%	$1,745,587
- Clinical Exposure Facility JN Kline, Facility Director PS Thorne, Facility Co-Director	15%	$703,484
- Environmental Assessment Facility SJ Reynolds, Facility Director PS Thorne, Facility Investigator	5%	$581,509
- Inhalation Toxicology Facility PS Thorne, Facility Director	15%	$650,620
NIH/NIEHS: Childhood Agricultural Safety and Health Research JA Merchant, PI PS Thorne, Co-Investigator	2%	$458,803 9/30/97–9/29/00
Netherlands Ministry of Agriculture: International Fellowship in Environmental and Occupational Health PS Thorne, PI	NA	$6,000 1998

NIEHS T32 ES007314: Environmental Health Sciences Training Program PS Thorne, PI	0%	$554,945 7/1/98-6/30/04
Dept. of Defense/National Center for Manufacturing Sciences: Influence of Dynamic Changes in Chemical and Microbiological Characteristics on Metal Working Fluid Toxicology PS Thorne, PI	10%	$23,053 8/01/98-7/31/99
NIH–NIEHS and U.S. EPA: The Etiology and Pathogenesis of Airway Disease in Children from Rural Communities G Hunninghake, Center PI		$2,660,847 10/1/98–9/30/03
Project 1: Rural Childhood Asthma Study E Chrischilles, Project PI PS Thorne, Investigator	5%	$1,422,585 10/1/98–9/30/03
Project 2: D Schwartz, Project PI PS Thorne, Investigator	5%	$1,147,718 10/1/98–9/30/03
Canada-Alberta Hog Industry Development Fund: Air Quality and Exposure Assessment of Career Pig Barn Workers in Alberta S Hrudey, PI PS Thorne, Investigator	2%	$155,094 1999-2000
NIOSH Special Emphasis Research Career Award: Ventilation Control to Reduce Airborne Contaminants PT O'Shaughnessy, PI PS Thorne, Investigator and Mentor	2.5%	$147,626 4/01/99–3/31/02
Medical Research Council of Canada: MRC Fellowship (Health Research) KH Bartlett, Fellow PS Thorne, Mentor	5%	$99,000 9/01/99-8/31/02
NIH/NIEHS: Ambient Endotoxin Measurements in Southern California – University of Iowa Component PS Thorne, PI	5%	$17,005 11/1/99-10/31/00
Center for Health Effects of Environmental Contamination, and the Leopold Center: Environmental Exposures in Hoop Structures and Conventional Confinement Swine Barns PS Thorne, PI	5%	$71,978 1/01/00-3/31/01
NIEHS 7R01ES07498: Biological Determinants of Environmental Airway Injury DA Schwartz, PI PS Thorne, Investigator	10%	$358,400 7/01/00-6/30/01
CDC/NIOSH T42 OH008491: Occupational Safety and Health Training Grant – Heartland Education and Research Center NL Sprince, PI Industrial Hygiene Training Program PS Thorne, Professor, Toxicology	5%	$2,266,726 7/1/00-6/30/03

US Dept of Housing and Urban Development T02-C-OPC-21356: National Survey of Allergens and Endotoxin in Housing PS Thorne, PI	5%	$37,500 8/24/00-8/23/02
Metal Working Fluid Product Stewardship Group: Toxicity Changes in Metalworking Fluids over Time PS Thorne, PI	7%	$56,000 9/15/00–9/14/01
HRSA A1012-21/21: U.S. Centers for Public Health Preparedness: Iowa Center for Public Health Preparedness JA Merchant, PI PS Thorne, Co-Investigator	5%	$1,395,109 10/01/00-9/30/03
NSF SBTT0080569: A Microsensor for Rapid Detection of Airborne Endotoxin RD Mileham, PI PS Thorne, Consultant	0%	$499,929 12/1/00-11/30/02
NIEHS 5 P30 ES05605: Environmental Health Sciences Research Center PS Thorne, Center Director		$3,999,279 4/1/01-3/31/04
- Administrative Core PS Thorne, Center Director	30%	$1,373,328
- Inhalation Toxicology Facility Core (ITF) PS Thorne, Facility Director	10%	$469,986
- Community Outreach & Education Core PS Thorne, Steering Committee	1%	$364,244
UAW–Daimler Chrysler National Training Center: Health Hazards from Microbial Growth in Metal Working Fluids PS Thorne, PI	12.5%	$199,578 5/21/01-5/20/03
Iowa Department of Natural Resources Iowa Concentrated Animal Feeding Operations Air Quality Study J Merchant, PI	5%	$24,964 07/01/01-02/31/02
FIC/NIH: 5 D43 TW00621 Iowa International Research and Training in Environmental & Occupational Health TM Cook, PI	0%	$3,311,976 9/30/01-04/30/07
NIEHS: R01 ES11392 Exposure Intervention in a Rural Pediatric Asthma Cohort: Louisa Environmental Intervention Project PS Thorne, PI	20%	$1,450,000 9/30/01-7/31/06
CDC: 5 U50 OH07548-02 Great Plains Center for Agricultural Health J Merchant, PI		$979,288 09/30/01-09/29/06
Evaluation of Organic Dust Aerosols PT O'Shaughnessy, PI; PS Thorne, Investigator	5%	$95,329
NIH: PO273-MH-201114 Iowa Town Meeting on Concentrated Animal Feeding Operations PS Thorne, PI	5%	$50,000 10/16/01-10/16/02

Danish Health and Environment: Danish Allergy Research Centre – University of Aarhus, T Sigsgaard, PI PS Thorne, PI of UI Subcontract for Endotoxin and Allergen Assay	0%	$50,000 4/01/02
Swedish Health and Environment Fund: DBH Healthy House Project – University of Aarhus, T Sigsgaard, PI PS Thorne, PI of UI Subcontract for Endotoxin and Allergen Assay	0%	$50,000 4/01/02
NIEHS: P01 ES011627 Environmental and Genetic Determinants of Asthma Incidence – USC, R McConnell, PI PS Thorne, PI of UI Subcontract for Exposure Assessment of Allergens and Endotoxin	2%	$57,092 4/01/02-05/31/07
NIEHS R01 ES011377: Peer Evaluation in Pregnancy Study - UIC V Persky, PI PS Thorne, PI of UI Subcontract for Exposure Assessment of Allergens and Endotoxin	1%	$100,000 4/18/02-01/31/09
Safer Pest Control: 2-5-34361 Safer Pest Control Study of Pregnant Women - UIC V Persky, PI PS Thorne, PI of UI Subcontract for Allergen Measurements,	1%	$42,810 9/01/02-08/31/07
NIEHS: R01 ES010906 Adult Asthma: Biology, Society, and Environment Exposure PD Blanc, PI, PS Thorne, PI of UI Subcontract for Endotoxin & Glucan Exposure Analysis	1%	$30,000 10/01/02–9/30/04
NIEHS P01 ES009581 LA CASA Study of Childhood Asthma - USC C Jones, PI PS Thorne, PI of UI Subcontract for Allergen Analysis	4%	$71,425 11/01/02-10/31/04
University of Northern Iowa: PO16356 Tier 1 Assays for Four Soy Based Machining Fluids PS Thorne, PI	5%	$16,514 2/05/03-06/30/03
NIEHS R01 ES008977: Environmental Health in a Cohort of Minority Women/Infants – Columbia University F Perera, PI PS Thorne, PI of UI Subcontract for Exposure assessment of allergens and endotoxin	1%	$14,103 2/19/03-03/31/07
NIEHS 5 P30 505605-13S1 (EHSRC Supplement) Environmental Health Impact of CAFO's Workshop PS Thorne, PI	0%	$50,000 4/01/03-03/31/04
NCI R03 CA099524: Trace Elements Among Iowa Pesticide Applicators L Dennis, PI PS Thorne, Co-Investigator	2%	$100,000 07/01/03-06/30/05

Iowa Department of Economic Development University of Iowa, Iowa State University 478-40-10 Science-Based Risk Assessment for Approval of Genetically Engineered Non-Food Crops PS Thorne, PI	15%	$78,900 10/10/03-06/30/05
NIEHS: 5 P30 ES05605 Environmental Health Sciences Research Center PS Thorne, Center Director		$2,100,000 04/15/04-03/31/07
- Administrative Core PS Thorne, Center Director	30%	$840,000
- Community Outreach & Education PS Thorne, Core Member	3%	$225,000
- Inhalation Toxicology Facility PS Thorne, Facility Director	10%	$336,0000
NIAID: R37 AI024616 H. Influenzae: Los and Biofilms in Pathogenesis M. Apicella, PI Subproject: Xylitol Toxicology Assessment PS Thorne, PI	2%	$118,090 07/01/04-02/28/09
U.S. EPA RD 83171701 Impacts of Manufactured Nanomaterials on Human Health and the Environment – A Focus on Nanoparticulate Aerosol and Atmospherically Processed Nanoparticulate Aerosol V Grassian, PI, PS Thorne, Investigator	5%	$237,287 09/01/04-08/30/08
NIAID R01 AI059618: Study of Allergen, Genetics and Endotoxin C Rose, PI PS Thorne, PI of UI Subcontract for Exposure Assessment for Mouse Allergen	1%	$1,250,000 5/01/05-12/31/10
Pella Corporation Pella Window Allergen and Endotoxin Accumulation Study PS Thorne, PI	0%	$25,000 10/01/05-2/28/06
University of Aarhus Research Foundation, University of Aarhus, Århus, Denmark Visiting Scholar Award PS Thorne, PI	--	$37,000 10/01/06-10/01/07
NIEHS P42 ES013661 Superfund Basic Research Program: Semi-volatile PCBs: Sources, Exposures, Toxicities LW Robertson, PI		$8,992,619 4/01/06-03/31/10
- Project 6 – Airborne Exposures of Semi-volatile Organic Pollutants: The AESOP Study PS Thorne, Project Director	20%	$1,215,062
- Inhalation Toxicology Core PS Thorne, Core Director	10%	$294,012
- Research Translation Core PS Thorne, Core Director	10%	$228,820

NIAID: K23 AI053572 Study of Genetics, Endotoxin, and Allergen K Pacheco, PI PS Thorne, PI of UI Subcontract for Exposure Assessment to Mouse Allergens	0%	$47,940 (subcontract) 10/01/06-01/31/10
Iowa Board of Regents Research and Commercialization Fund MD-2-dependence of Endotoxin-induced Inflammation JP Weiss, PI	0%	$200,000 11/01/06-10/31/07
NIEHS: 5 P30 ES05605 Environmental Health Sciences Research Center PS Thorne, Center Director		$5,000,000 4/15/07-03/31/12
- Administrative Core PS Thorne, Center Director	30%	$1,250,000 4/15/07-03/31/12
- Pulmonary Toxicology Facility PS Thorne, Facility Director	10%	$550,000 4/15/07-03/31/12
FIC/NIH: 5 D43 TW00621 Iowa International Research and Training in Environmental & Occupational Health TM Cook, PI	Mentor	$3,311,976 5/01/07-02/29/12
NIEHS 1 R01 ES015981-01 Lung Inflammation and Fibrosis after Asbestosis Exposure is Regulated by Rac1 AB Carter, PI, PS Thorne, Consultant	1%	$1,354,810 9/10/07-06/30/12
NIEHS R01 ES014871-01A1 Hydrogen Peroxide and Asbestosis AB Carter, PI, PS Thorne, Consultant	1%	$1,125,000 12/01/07-11/30/12
Utrecht University, Institutional Strategic Research Program Risk Analysis of Multi-drug Resistant *Staphylococcus aureus* Transmission between Livestock and People D Heederik, PI	--	€250,000 1/01/07-1/01/10
Burroughs Wellcome University of Washington School of Medicine Startup Funds Gallium as an Antimicrobial and Anti-Biofilm Agent: A Trojan Horse Strategy that Disrupts Bacterial Iron Metabolism P. Singh, PI PS Thorne, PI of UI Subcontract	2%	$37,278 (subcontract) 12/01/07-11/30/08
US EPA Multi-Ethnic Study of Atherosclerosis - University of Washington J Kaufman, PI Subproject: Spatial Investigation of Sources, Composition, and Long-Term Health Effects of Coarse Particulate Matter in the Multi-Ethnic Study of Atherosclerosis (MESA) Cohort PS Thorne, PI of UI Subcontract	1%	$29,300 (subcontract) 3/31/08-06/30/10
NIEHS R01 ES016169 An Integrated Approach Toward Understanding the Toxicity of Inhaled Nanomaterials V Grassian, PI, PS Thorne Co-Investigator	5%	$487,847 4/01/08-3/31/12

NCI Division of Intramural Research Non-Hodgkins Lymphoma Study – Role of Endotoxin as a Risk Factor for NHL. JS Colt, PI PS Thorne, PI of UI Subcontract	0%	$52,500 1/01/08-12/31/09
5R01OH008938-02 Respiratory Effects in Workers From Post-Katrina Related Airborne Exposures H Glindmeyer, PI PS Thorne, Consultant	0%	$1,860,000 6/01/07-5/31/12
NIEHS Agricultural Health Study Nested Asthma Case-Control Study J. Hoppin , S. London, Co-PIs PS Thorne, Investigator and PI of UI Subaccount		$55,000 (subcontract) 10/1/07-9/30/10
NIEHS R01ES014400 Risk Factors Accounting for Neighborhood Differences in Asthma Prevalence MS Perzanowski, PI PS Thorne, Investigator and PI of UI Subaccount		$655,841 9/30/07-6/30/11
NIEHS: 5 P30 ES05605-S1 (EHSRC Supplement) Exposure and Health Assessment of Families Re-occupying Flooded Homes PS Thorne, PI	5%	$50,000 9/15/08-03/31/09
NIH HHSN275200800025C National Children's Health Study J Murray, PI PS Thorne, Member, Scientific Advisory Board	0%	$9,469,260 9/28/07-9/27/14
NIH R01AI059372 Regulation of MD-2 Function and Expression JP Weiss, PI	5%	$1,875,000 07/01/09-06/30/14
NIH 1R01HL085868 Gallium, a Potential New Therapeutic for CF Airway Infections	5%	$483,293 07/01/09-06/30/11
National University of Ireland, Galway, Scottish Centre for Indoor Air, Institute of Medicine UK, University of Aberdeen Indoor Air Pollution and Health	1%	Fee for Service 10/01/09-9/30/10
NIEHS Contract Head-off Environmental Asthma in Louisiana (HEAL) H Mitchell, PI	1%	Fee for Service 06/01/09-05/31/10
Electric Power Research Institute (EPRI) Contribution of Bioaerosols to Fine and Coarse Particulate Matter in the Southeastern United States A Rohr, PI	1%	$10,794 04/01/10-06/30/11
CDC-NHANES National Health and Nutrition Examination Survey Endotoxin Analysis of House Dust	5%	$227,280 04/01/10-12/31/11

NIEHS P42 ES013661 Superfund Basic Research Program: Semi-volatile PCBs: Sources, Exposures, Toxicities LW Robertson, PI		$12,670,219 4/01/10-03/31/15
- Project 6 – Airborne Exposures of Semi-volatile Organic Pollutants: The AESOP Study PS Thorne, Project Director	15%	$1,485,004
- Inhalation Toxicology Core (Core C) PS Thorne, Core Director	8%	$493,910
- Research Translation Core (Osterberg) PS Thorne, Core Co-Leader	3%	$440,762
-Project 4 - Atmospheric Sources of PCB Congeners (Hornbuckle); PS Thorne, Co-Project Leader	0%	$849,472
NIH 3 P30 ES005605-S2 (Thorne) Environmental Health Sciences Research Center Supplemental *Community Outreach and Education Core*	5%	$148,461 02/15/11-03/31/12

D. Invited Presentations

Invited Presentations

1985	The Toxicology of Arts and Crafts Materials	Artist Health Education Program, Pittsburgh, PA
1986	Pulmonary Hypersensitivity to Methylene bis-Phenylisocyanate (MDI) Aerosols	94th Am Chem Soc, Chem Educ Div, 2YC3 Meeting, Dayton, OH, Nov 14, 1986,
1989	Chemical and Biological Indoor Air Quality: Is it Safer Inside?	American Industrial Hygiene Association, Iowa-Illinois Section, Davenport, IA
1989	Building Related Illness: When is a Building “Sick”?	18th Annual Iowa Governor’s Conference on Safety, Des Moines, IA
1989	Quantitative Risk Assessment: An Important Policy Tool	Iowa Environnemental Protection Commission, Des Moines, IA
1990	Indoor Air Quality: Source, Risk, and Remediation	The Central States Occupational Medicine Association Conference, Iowa City, IA
1990	Risk Perception and Risk Assessment	Medical Waste Management in Iowa: A conference on Issues, Alternatives, and Strategies, Iowa City, IA
1990	Of Mice and Ears: Testing Weak Contact Sensitizers	The Environmental Toxicology Colloquium, University of Wisconsin, Madison, WI
1990	Dermal Sensitization Assays in the Mouse And Guinea Pig: Striving for Fewer Animals and Objective Data	11th Annual Meeting of the American College of Toxicology, Orlando, FL
1991	Advanced Training in Occupational and Environmental Medicine	American College of Occupational and Environmental Medicine Annual Conference, Chicago, IL

1991	Indoor Air Pollution: Risks, Evaluation and Control	53rd Iowa Water and Waste Water Short Course, Iowa City, IA
1991	The Clean Air Act and Toxic Air Pollutants	The 1900 Clean Air Act Amendments Panel Discussion, Iowa City, IA
1991	Health Risk Analysis: Worrying About One in a Million	The National Environmental Health Association Conference, Des Moines, IA
1992	Organic Dust Induced Pulmonary Diseases in Agricultural Workers	The Medical College of Virginia Toxicology Seminar Series, Richmond, VA
1992	Respiratory Protection in the Workplace	American College of Occupational and Environmental Medicine 77th Annual Meeting, Iowa City, IA
1993	Fundamentals of Toxicology	The Hazardous Materials Management Conference, Iowa City, IA
1994	Health Surveillance for Indoor Air Quality Problems	Iowa Lutheran Hospital Family Practice Grand Rounds, Des Moines, IA
1994	Exposure to Inflammatory Agents in Agricultural Dusts	American College of Occupational and Environmental Medicine, 79th Annual Meeting, Chicago, IL
1995	Acute Respiratory Health Effects of Metal Working Fluids	UAW/GM Occupational Health Advisory Board Meeting, Detroit, MI
1995	Environmental Assessment and Toxicological Effects of Metal Working Fluids	UAW/GM Occupational Health Advisory Board Meeting, Detroit, MI
1995	Assessment of Exposures to Metalworking Fluids	Castrol Industrial North America, Metalworking Fluids Workshop, Downers Grove, IL
1995	Respiratory Health Effects of Machining Fluids in Laboratory Animals	The Industrial Metalworking Environment: Assessment and Control, Dearborn, MI
1996	Bioaerosols and Airborne Endotoxins in Automotive Machining Plants	Environmental Health Grand Rounds, University of Washington, Seattle, WA
1996	Acute Respiratory Diseases: Searching for Causative Agents	Occupational Medicine Grand Rounds, Harborview Medical Center, Seattle, WA
1997	Hypersensitivity Pneumonitis in the Machining Environment	NIOSH Workshop on Machining Fluids and Health, Detroit MI
1997	Fundamentals of Gases, Vapors and Aerosols	International Workshop on Pulmonary Toxicology, International Institute for Rural and Environmental Health, Bratislava, Slovakia
1997	Deposition and Clearance of Particles in the Lung	International Workshop on Pulmonary Toxicology, International Institute for Rural and Environmental Health, Bratislava, Slovakia

1997	Inhalation Toxicology Systems	International Workshop on Pulmonary Toxicology, International Institute for Rural and Environmental Health, Bratislava, Slovakia
1997	Indoor Air Pollution	International Workshop on Pulmonary Toxicology, International Institute for Rural and Environmental Health, Bratislava, Slovakia
1997	Pulmonary Inflammation From Inhalation of Machining Fluid Aerosols	Environmental and Occupational Health Seminar, Landbouw Universiteit Wageningen, Wageningen, Netherlands
1997	Bugs in the Sump: Respiratory Illness from Machining Fluids	Environmental Health Sciences Research Center, Pulmonary Biology Core Seminar, University of Iowa, Iowa City, IA
1997	Indoor Air Pollution: Tips for Homeowners	Cedar Rapids Executive Association, Cedar Rapids, IA
1998	Assessment of Exposures in Refuse-Derived Fuel Plants	European Commission Research Project on Disease and Waste Dust Exposure Annual Meeting, Noordwijk Aan Zee, Netherlands
1998	Inhaled Bioaerosols and Agricultural Respiratory Diseases	Pulmonary Medicine and Surgery Grand Rounds, Maastricht University, Maastricht, Netherlands
1999	Inhalation Toxicology Models of Endotoxin- and Bioaerosol-Induced Immune Responses	EUROTOX '99, Oslo, Norway
1999	Interaction Between Endotoxins and β-Glucans in Inflammatory Responses	EUROTOX'99, Oslo Norway
1999	Primary Pulmonary Health Risks in Agriculture	Morning Conference, St. Luke's-Mercy Hospital, Cedar Rapids Medical Foundation, Cedar Rapids, IA
1999	Bioaerosol and Indoor Air Quality	Grand Rounds, St. Luke's-Mercy Hospital, Cedar Rapids Medical Education Foundation, Cedar Rapids, IA
2000	Biological Characterization of Particles	Indoor Air Quality Workshop, Kansas State University, Manhattan, KS, Dec 4, 2000
2000	Relating Health Effects to Specific Contaminants	Indoor Air Quality Workshop, Kansas State University, Manhattan, KS, Dec 5, 2000
2000	The Role of Endotoxin in Occupational and Environmental Lung Disease: Exposure Response Relationships and Susceptibility Factors	39th Annual Meeting of the Society of Toxicology, Philadelphia, PA, Mar 19, 2000
2000	Endotoxin as a Causative Agent for Occupational and Environmental Lung Disease	39th Annual Meeting of the Society of Toxicology, Philadelphia, PA, Mar 19, 2000

2000	Quantifying Bioaerosols: Lessons from the Agricultural Setting	96th international Conference of the American Thoracic Society, Toronto, ON, Canada, May 8, 2000
2001	Environmental Risk Factors for Childhood Asthma	Secondary Student Training Program Seminar Series, University of Iowa, July 18, 2001
2001	The Role of Environmental Endotoxin Exposure in Asthma	Oklahoma Center for Toxicology Interdisciplinary Seminar, University of Oklahoma, Oklahoma City, March 9, 2001
2001	Association of Indoor Endotoxins with Health and Demographic Factors: Results from the First National Survey of Endotoxins in Housing	129th Annual Meeting American Public Health Association, Atlanta, GA, Oct 24, 2001
2001	Environmental Health Issues Associated with Concentrated Animal Feeding Operations	An Iowa Town Meeting - Concentrated Animal Feeding Operations: Airing the Environmental Health Issues, Des Moines, IA, Nov 16, 2001
2001	Environmental Contaminants in Barns and Beyond	An Iowa Town Meeting - Concentrated Animal Feeding Operations: Airing the Environmental Health Issues, Des Moines, IA, Nov 16, 2001
2002	Findings of the Iowa Concentrated Animal Feeding Operations Air Quality Study Group	Joint session of the Iowa House and Senate Committees on Agriculture and Environment, Des Moines, IA, Apr 3, 2002
2002	Environmental Risk Factors for Childhood Asthma	International Workshop on Respiratory Inflammation and Allergic Diseases with Respect to Environment, Bratislava, Slovakia, Apr 6, 2002
2002	Animal Inhalation Studies of Airway Inflammation and Remodeling	International Workshop on Respiratory Inflammation and Allergic Diseases with Respect to Environment, Bratislava, Slovakia, Apr 7, 2002
2002	Quantifying Exposure to Endotoxins in Homes	International Workshop on Respiratory Inflammation and Allergic Diseases with Respect to Environment, Bratislava, Slovakia, Apr 8, 2002
2002	Environmental Concerns Regarding Concentrated Animal Feeding Operations	Institute of Agriculture and Natural Resources, University of Nebraska, Lincoln, NE, May 28, 2002
2002	Concentrated Animal Feeding Operations and the Environment	Board of Health and Board of Supervisors, Humboldt County, IA, May 29, 2002
2002	Public Health Impacts of Concentrated Animal Feeding Operation (CAFOs)	Iowa Environmental Health Association Conference, Marshalltown, IA, Oct 16, 2002
2002	Agricultural Health Research in the Environmental Health Sciences Research Center	Agricultural Health Study Meeting, NIEHS and University of Iowa, Iowa City, IA, Dec12, 2002

2003	Endotoxin and Asthma: Wheezing More or Less?	NIEHS, NCI, EPA Agricultural Health Study Workshop, Research Triangle Park, NC, Feb 3, 2002
2003	Occupational Lung Disease in Response to Mixed Exposures: The Role of Bacterial and Fungal Contaminants in Agricultural Respiratory Diseases	42nd Annual Meeting of the Society of Toxicology, Salt Lake City, UT, Mar 12, 2003
2003	The Facts About Mold	5th Annual Occupational Health Symposium: Presymposium Course, Iowa City, IA, April 2, 2003
2003	The First U.S. National Survey of Endotoxin in Housing	The 4th Skokloster Workshop: Organic Dusts – Agents, Disease, and Prevention, Gothenburg, Sweden, Apr 9, 2003
2003	Rural Childhood Asthma	Association of Schools of Public Health Conference, Children's Environmental Health: Protecting our Future, Research Triangle Park, NC, Aug 11, 2003
2003	From Fenny Vapors to Endotoxin: The Role of The Built Environment in the Emergence of Childhood Asthma	The Whitehead Memorial Lecture and Pediatric Grand Rounds, Children' s Hospital of Pittsburgh, Pittsburgh, PA, Oct 16, 2003
2004	Health Effects of Metal Working Fluids	Sixth Annual Occupational Health Symposium, Iowa City, IA, Mar 11, 2004
2004	Exposure Assessment and Respiratory Health Effects of Endotoxin	Health Effects of Indoor Allergens, Molds and Endotoxin: Theory and Practice, Charlottesville, VA, Jun 28, 2004
2004	The Role of Endotoxin in Environmental Lung Disease	62nd Meeting of the NIEHS Environmental Health Core Center Directors, Research Triangle Park, NC, Oct 18, 2004
2004	CAFOs and Environmental Health: Synopsis of the 2004 CAFO Conference	2004 Midwest Rural Agricultural Safety and Health Conference, Iowa City, IA, Nov 18, 2004
2004	Environmental Health in Rural America	Institute of Medicine, The National Academies of Science, EHSRT, Iowa City, IA, Nov 30, 2004
2005	The Role of Endotoxin Exposure in Asthma	Programme de la Journee scientifique de l'Unite de recherché en pneumologie, Laval University, Quebec City, Canada, Apr 1, 2005
2005	Does Domestic Endotoxin Exposure Exacerbate or Reduce Allergen Sensitization or Asthma?	61st Annual Meeting of American Academy of Allergy, Asthma & Immunology, San Antonio, TX, Mar 19, 2005
2005	Pro-Inflammatory Effects of Domestic and Occupational Exposure to Endotoxin	61st Annual Meeting of American Academy of Allergy, Asthma & Immunology, San Antonio, TX, Mar 20, 2005

2005	Illuminating Studies With LPS and LOS: *Mus* Meets *Photuris*	Workshop for the Danish Society for Occupational and Environmental Medicine, Danish Society for Allergology, and International Committee on Occupational Health, University of Aarhus, Denmark, Apr 20, 2005
2005	Metal Working Fluids: Properties, Exposures and Health Effects	Central States Occupational Medicine Conference, Dubuque, IA, Sept 16, 2005
2005	Mold, Microbial Agents, and Respiratory Disease After Hurricane Katrina	63rd Annual Meeting of the NIEHS Environmental Health Core Centers Directors, Vanderbilt University, Nashville, TN, Oct 31, 2005
2005	Mold and Microbial Agents in Homes After Hurricane Katrina	Special Seminar, Institute for Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands, Dec 5, 2005.
2005	Domestic Endotoxin Exposure and Asthma: A U.S. National Survey	Special Seminar, Institute for Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands, Dec 5, 2005.
2006	Renewable Motor Fuels Briefing (joint presentation by Board of Regents, State of Iowa, Iowa State University, University of Iowa and University of Northern Iowa)	81st Iowa General Assembly, Des Moines, Iowa, Jan 12, 2006
2006	Biological Agents in the Indoor Environment	175:195 Global Environmental Health, University of Iowa, Feb 2, 2006
2006	The Built Environment and Childhood Asthma	COEC Stakeholder Advisory Board Meeting, University of Iowa, Mar 3, 2006
2006	Exposure to Biologics and its Relevance to Asthma	American Academy of Allergy, Asthma and Immunology, Miami Beach, FL, Mar 5, 2006
2006	Domestic Endotoxin Exposure and Asthma: Atopics Too	175:220 Environmental and Occupational Epidemiology, University of Iowa, Apr 12, 2006
2006	Indoor Air and Asthma: Can We Intervene to Reduce Endotoxin Exposure?	Asthma and the Environment: Translating Science into Patient Care, Iowa City, IA, May 5, 2006
2006	Endotoxin Exposures and Health Effects: Focus on the Non-Occupational Environment	American Industrial Hygiene Conference and Exposition, Chicago, IL, May 18, 2006
2006	AESOP Study (Airborne Exposure to Semi-volatile Organic Pollutants)	Iowa Superfund Basic Research Program Meeting, University of Iowa, Jul 7, 2006
2006	Indoor Molds and Microbial Agents	Katholik Universiteit Leuven, Leuven, Belgium, Nov 20, 2006
2006	Toxicologic Risk Assessment for Airborne Hazards	Institute for Risk Assessment Sciences, Utrecht University, Netherlands, Dec 15, 2006

2007	Domestic endotoxin exposure and asthma	Nofer Institute of Occupational Medicine, Łodz, Poland, Nofer Institute Seminar, Mar 26, 2007
2007	The role of endotoxin in asthma: The U.S. national survey of endotoxin in housing	University of Zagreb and the Croatian Medical Society, Distinguished Lecturer Series, May 2, 2007
2007	Are mice a good model of human responses to endotoxin?	Institute for Risk Assessment Sciences Seminar, Utrecht University, Netherlands, May 15, 2007
2007	Assessment of Exposures and Health Effects of Bioaerosols	Environmental and Occupational Medicine, University of Aarhus, Denmark, June 11, 2007
2007	Concentrated Animal Feeding Operations	Environmental Health Issues in the Midwest: A Workshop for State Legislators, Coralville, IA, Oct 23, 2007
2007	Are mice a good model of human responses to endotoxin?	Occupational and Environmental Health Seminar, Iowa City, IA, Nov 6, 2007.
2008	Concentrated Animal Feeding Operations – A Survey of the Hazards Associated with this Industry	ATSDR Retreat, Kansas City, KS, Jan 24, 2008
2008	Endotoxin at Work, at Home and Outside	AAAAI Annual meeting, Philadelphia, PA, Mar 15, 2008
2008	Molds: Good for Cheese, Bad to Breathe: Microbial Agents in the Indoor Environment	10th Annual Occupational Health Symposium, Iowa City, IA Mar 26, 2008
2008	Endotoxin: Friend AND Fiend	Interdisciplinary Graduate Program in Human Toxicology and Environmental Health Sciences Research Center Seminar, University of Iowa, Iowa City, IA April 11, 2008
2008	Endotoxin: Friend OR Fiend	Johns Hopkins University, Baltimore, MD, Apr 24, 2008
2008	Inhaled Endotoxin and the Hygiene Hypothesis	Chemical and Biochemical Engineering Seminar, University of Iowa, Iowa City, IA, May 8, 2008
2008	The role of Pathogen Associated Molecular Patterns (PAMPs) in Inflammatory Lung Disease	Central States – Society of Toxicology Annual Meeting, University of Kansas, Kansas City, KS, Sept 24-25, 2008.
2008	Molds Hazards in the Aftermath of Floods	Current Topics in Allergy & Clinical Immunology, Midwest Association of Asthma, Allergy and Immunology, Coralville, IA, Oct 17, 2008
2009	The Case for Sustainable, Healthy and More Humane Livestock Industry	Trinity Episcopal Church, Iowa City, IA, Feb 8, 2009.
2009	Bioaerosol Exposures and Asthma: Effects of a Changing Climate	Managing Toxic Risks for Global Health, Duke University, Durham, NC, Feb 20, 2009.

2009	Bioaerosol Exposures and Asthma: What Remains when Floodwaters Recede	Living with Floods: From Science to Policy, University of Iowa, Iowa City, IA, Mar 11, 2009.
2009	Lung's Labor's Lost: Endotoxin and Innate Immunity	American Thoracic Society Annual Meeting, San Diego, CA, May 15-20 2009.
2009	The Way Things Work: Part 6. Endotoxin	Grand Rounds, Department of Preventive Medicine, Division of Environmental Health, University of Southern California, Los Angeles, CA, June 5, 2009.
2010	Effects of Flooding on Respiratory Risk Factors: Climate Change and Respiratory Health	European Respiratory Society Annual Congress, Barcelona, Spain, Sept 21, 2010
2010	Climate Change and Effects of Flooding on Respiratory Health	University of Utrecht, IRAS, Utrecht, Netherlands, Oct 11, 2010
2010	Global Climate Change Effects on Respiratory Health	Occupational and Environmental Health Seminar, College of Public Health, University of Iowa, Oct 26, 2010
2010	The AESOP Study	Isrp investigator group presentation, The University of Iowa, Nov 4, 2010
2010	John Doull Award Lecture: Environmental Lung Disease-Bacteria, Fruit Flies and Mites	Central States Society of Toxicology Meeting, Iowa City, IA Nov 5, 2010
2010	Global Climate Change Effects on Respiratory Health	Department of Epidemiology Seminar, College of Public Health, University of Iowa, Dec 2, 2010
2011	Public Health Implications of a Changing Climate	Panel Member: Climate Applications for Health Panel, Climate Prediction Application Science (CPAS) Workshop, Des Moines, IA. March 3, 2011.
2011	Flood of 2008	Panel Discussion Participant, National Academy of Sciences Committee on Increasing Resilience to Hazards and Disasters, Iowa Memorial Union, Iowa City, March 7, 2011

<u>Conference Presentations/Posters</u> (In addition to those listed under published abstracts)

1984	Physicochemical Characterization of Fibrogenic Particles	23rd Annual Meeting of the Society of Toxicology.
1984	Generation and Analysis of Diphenylmethane Diisocyanate (MDI) Aerosols	Parran Conference, Pittsburgh, PA.
1985	Alveolar Macrophage Cytoskeletal Damage Induced by Mineral Dusts of Known Physicochemical Characteristics	24th Annual Meeting of the Society of Toxicology, Dan Diego, CA.

1986	Pulmonary Irritation and Hypersensitivity in Guinea Pigs Exposed to 4, 4'-Diphenylmethane Diisocyanate (MDI) Aerosol	25th Annual Meeting of the Society of Toxicology, New Orleans, LA.
1986	Experimental Contact Sensitization by Isocyanates	25th Annual Meeting of the Society of Toxicology, New Orleans, LA.
1986	Continuous Remote Temperature Monitoring of Unrestrained Guinea Pigs	25th Annual Meeting of the Society of Toxicology, New Orleans, LA.
1987	Production of Hyperthermia and Respiratory Response to Inhalation of Endotoxin in Guinea Pigs	26th Annual Meeting of the Society of Toxicology, Washington, DC.
1987	Inexpensive Conversion of Upright and Inverted Microscopes for Polarized Light Microscopy	26th Annual Meeting of the Society of Toxicology, Washington, DC.
1988	Repeated Bronchial Hyperractivity Testing of Unanesthetized, Unrestrained Guinea Pigs	27th Annual Meeting of the Society of Toxicology, Dallas, TX.
1989	Isolation of IgE from the Guinea Pig	28th Annual Meeting of the Society of Toxicology, Atlanta, GA.
1989	Late-Onset Airway and Febrile Responses in an Animal Model of Pulmonary Hypersensitivity to Airborne Allergens	28th Annual Meeting of the Society of Toxicology, Atlanta, GA.
1989	Microbiological Indoor Air Quality in a Sick Building	American Industrial Hygiene Conference, St. Louis, MO.
1990	Refinement of a Non-Invasive Mouse Model for Testing Weak Contact Sensitizers	29th Annual Meeting of the Society of Toxicology, Miami Beach, FL.
1992	Inhalation Studies of Grain Dusts and Grain Dust Components in Guinea Pigs: Characterization of Individual Agents in the Exposure Atmospheres.	International Workshop on Causative Agents for Organic Dust Related Disease, Skokloster, Sweden.
1992	Characterization of Agricultural Dusts Used For Inhalation Studies	Center for Agricultural Disease and Injury Research, Education and Prevention, Regional Conference, Iowa City, IA.
1996	Dose-Dependent Pulmonary Function Changes and Inflammation From Inhalation of Machining Fluids	35th Annual Meeting of the Society of Toxicology, Anaheim, CA.
1996	Early Inflammatory Responses to Adenoviral Vectors for Pulmonary Gene Therapy	35th Annual Meeting of the Society of Toxicology, Anaheim, CA.
1996	Mount Pinatubo Volcano Eruption and Environmental Refugee Mental Health	149th Annual Meeting of the American Psychiatric Association, San Francisco, CA.

1996	Cultural Factors and Diagnostic Reliability in a Study of Environmental Refugees	149th Annual Meeting of the American Psychiatric Association, San Francisco, CA.
1999	Increased Bio-Aerosol Levels in House Dust Due to Indoor Storage of Organic Waste	European Respiratory Society Annual Meeting, Barcelona, Spain.
2001	Endotoxin in Household Dust – A National Survey of the United States	The James F. Jakobsen Graduate Forum, Presented by the Graduate Student Senate, University of Iowa, Iowa City, IA.
2001	The National Survey of Household Endotoxin in the United States	Student Interdisciplinary Health Research Poster Session, University of Iowa, Iowa City, IA.
2001	Endotoxin in Household Dust – The U.S. National Survey	College of Medicine/College of Public Health Research Week, University of Iowa, Iowa City IA.
2005	Synergistic Effect of Cockroach Allergens and Endotoxin in Development of Airway Disease and Systemic Sensitization	College of Medicine/College of Public Health Research Week, University of Iowa, Iowa City, IA.
2005	Neutrophilic Lung Inflammation Induced by Aerosol Inhalation and Nasal Aspiration of Endotoxin in a Newborn Murine Model	College of Medicine/College of Public Health Research Week, University of Iowa, Iowa City, IA.
2006	Lipooligosaccharide Inhalation Produces Dose- and Time-Dependant Lung Inflammation and Cytokine Release in Mice	College of Medicine/College of Public Health Research Week, University of Iowa, Iowa City, IA.
2006	Monitoring of Endotoxin-Induced Pulmonary Inflammation *In Vivo* in NF-*k*B Luciferase Transgenic Mice	College of Medicine/College of Public Health Research Week, University of Iowa, Iowa City, IA.
2006	Reduction of Endotoxin and Glucan Exposures in the Louisa/Keokuk Environmental Intervention Project (LEIP) for Rural Childhood Asthma	College of Medicine/College of Public Health Research Week, University of Iowa, Iowa City, IA.
2006	Enzyme-Linked Immunosorbent Assay Specific for (1→6) Branched, (1→3)-β-D-Glucan Detection in Environmental Samples	College of Medicine/College of Public Health Research Week, University of Iowa, Iowa City, IA.
2008	Mouse model of Experimental Asthma Using (1→3)-β-D-Glucan Derivatives	College of Medicine/College of Public Health Research Week, University of Iowa, Iowa City, IA.

E. Pending Information

Pending Grants

Source,Title, P.I.	% Effort	Direct Funds Funding Period

[redacted]

Pending Publications

Submitted Peer Reviewed Papers

1. Moniruzzaman S, Hägerhed Engman L, James P, Sigsgaard T, Thorne PS, Sundell J, Bornehag C-G. Determinants for endotoxin exposure in indoor dust and the impact on asthma and allergy in preschool children in Sweden. Submitted, 2010.
2. Kim JS, Adamcakova-Dodd A, O'Shaughnessy PT, Grassian VH, Thorne PS. Effects of copper nanoparticle exposure on host defense in a murine pulmonary infection model. Submitted April 2011.

Peer Reviewed Papers In Preparation

1. Hoppe KA, Thorne PS, Metwali N, Hart T, Kostle PA. Exposure and health assessment of families reoccupying flooded homes.
2. Metwali N, Hadina S, Thorne PS. Mouse model of experimental asthma using (1-3)-β-D glucan derivatives.
3. Hadina S, Thorne PS. Comparison of in vivo bioluminescence imaging and cytokine concentrations for assessment of endotoxin-induced pulmonary inflammation.
4. Thorne PS, Metwali N, Newkirk N. Deposition of endotoxin, cat allergen and fungal glucan on window blinds.
5. Thorne PS, Andersson E, Akerstrom M, Duchaine C, Veillette M, and Metwali N. Hypersensitivity Pneumonitis (HP) in spa maintenance workers exposed to mycobacteria and endotoxin.
6. Thorne PS, Perry SS, Heinrich J. PM10 Endotoxin in Ambient Air.
7. Hadina S, Teghanemt A, Gioannini T, Thorne PS, Weiss J. Potent TLR4 agonist activity of monomeric endotoxin:MD-2 (human) complex in the murine airway.
8. Galdanes K, Thorne PS, Duchaine C, Lucke W, Goon D, Gordon T. Influence of dynamic changes in chemical and microbiological characteristics on metal working fluid toxicology.
9. Coggins M, Thorne PS, Metwali N, et al. Bioaerosol exposures in podiatry clinics.
10. Wangpradit O, Adamcakova-Dodd A, Heitz K, Robertson L, Thorne PS, Luthe G. PAMAM dendrimers as nano carriers to investigate inflammatory responses induced by pulmonary exposure of PCB metabolites in Sprague-Dawley rats.

11. Kulhankova K, George CLS, Kline JN, Darling M, Thorne PS. Endotoxin inhalation in early life induces lung disease and alters alveolarization.

12. Metwali N, Hoppe KA, Perry TT, Avol EL, Thorne PS. The electrostatic dustfall collector passive airborne sampler.

SERVICE

A. Offices/Appointments Held in Professional organizations

Advisory Boards

2000-2006	Member, Science Advisory Panel, Western Canada Study of Animal Health Effects Associated with Exposure to Emissions from Oil and Natural Gas Field Facilities, Alberta, British Columbia and Saskatchewan, Canada
2002-2003	Utrecht University, Graduate School of Public Health, External Advisory Board, Netherlands
2003-2006	National Advisory Environmental Health Sciences Council, National Institutes of Health, Department of Health and Human Service
2009-2010	External Advisor, University of Southern California Environmental Health Sciences Research Center, Los Angeles
2010	Children's Health After the Storms (CHATS) – A Gulf Coast Children's Health Study Technical Advisory Panel, Louisiana State University, New Orleans, LA

Editorial Boards

1993-2000	American Industrial Hygiene Association Journal
1996-present	Annals of Agricultural and Environmental Medicine

Review Panels

1989	State of Louisiana Board of Regents, Grant Reviewer, Louisiana Education Quality Support Fund
1991-1998	U.S. Agency for Toxic Substances and Disease Registry, Grant Reviewer
1993-1997	NIH/NIEHS Special Study Sections, Reviewer, Environmental Health Center Development Grants
1996	CDC/NIOSH, External Reviewer, Criteria Document for a Recommended Standard for Metal Working Fluids
1997	NIH/NIEHS, Chair, Special Study Section, P01 Grants
1997	CDC/NIOSH, Judge for The Alice Hamilton Award for Biological Sciences
1997	NIH/NIEHS, Site Visit Team, P30 Environmental Health Core Center
1998	NIH/NIEHS, EPA, and FDA Interagency Coordinating Committee on the Validation of Alternative Methods (ICCVAM), Member, Peer Review Panel

1999	Chemical Manufacturer's Association, External Grant Reviewer
1999	U.S. EPA, National Center for Environmental Research and Quality Assurance, Office of Research and Development, Member, Peer Review Panel
1999-2002	PHS/NIOSH Safety and Occupational Health Study Section, Member
2001	PHS/NIOSH Safety and Occupational Health Study Section, Chair
2002	PHS/NIEHS Special Emphasis Review Panel, Chair
2002	Technical Qualification Board, US EPA, Member
2003	New York University School of Medicine, External Reviewer, Faculty Promotion
2003	European Commission Research Directorate-General, for project Measurement of Occupational Allergen Exposure (MOCALEX). External Reviewer, EU 5th Framework QLRT-2001-00432 Utrecht, Netherlands November 10-11, 2003.
2004	School of Occupational and Environmental Hygiene, External Reviewer, Faculty of Graduate Studies, University of British Columbia, Vancouver, Canada Dec 5-7, 2004
2005	University of Illinois-Chicago, School of Public Health, External Reviewer, Faculty Promotion
2005	National Institute of Environmental Health Sciences, External Reviewer, GS-14 Staff Promotion
2005	Institute of Veterinary Research, External Reviewer, Faculty of Veterinary Sciences, Utrecht University, Utrecht, Netherlands, Nov 28-Dec 2, 2005
2006	New Zealand Department of Internal Affairs, Grant Reviewer, Lottery Health Research Board
2006	Northwest Center for Occupational Safety and Health, Grant Reviewer
2008-2009	NIH National Children's Center Study Section, Member
2008-present	NHANES Allergen Advisory Panel, Member, National Center for Health Statistics, Centers for Disease Control and Prevention
2009	NIH/NIEHS, Member, Special Study Section, K01/K99
2009	NIH/NIEHS, Member and Acting Chair, Special Study Section, R01, R21 ES 09-001; Research to Action: Assessing and addressing community exposures to environmental contaminants.
2009	NIH/NIEHS, Chair, Special Study Section, R44/R45 ES09-006, E-Learning for HAZMAT and Emergency Response

2010	NIH/NIEHS, Member, Study section ZRG1-HDM-O, R01, Building Sustainable Community-linked Infrastructure to Enable Health Sciences Research
2010	NIH/NIEHS, Member Environmental Health Sciences (EHS) Review Committee, Research Career Programs
2011	NIH/NIEHS, Chair, Study section ZES1 SET-D RV, R01, New Tools for Characterizing Personal Environments

Departmental, Collegiate or University Committees or Task Forces

1987-1988	Dept. of Industrial Environmental Health Sciences, Member, Curriculum Committee
1988-1991	Div. of Occupational and Environmental Health, Member, Curriculum Planning Activities
1989-1990	Dept. of Preventive Medicine and Environmental Health, Member, Curriculum Committee
1990-1991	Dept. of Preventive Medicine and Environmental Health, Member, Curriculum Committee
1990-1991	University of Iowa, Member, Recycling and Waste Management Task Force
1990-2002	Center for Agricultural Disease and Injury Research, Education and Prevention/Great Plains Center for Agricultural Health, Member, Advisory Committee
1990-present	Environmental Health Sciences Research Center, Member, Internal Advisory Committee
1991-1993	University of Iowa, Institute for Health Behavior, and Environmental Policy, Risk Assessment and health Module, Member
1991-1993	Dept. of Preventive Medicine and Environmental Health, Member, MS Examination Committee
1991-1998	Div. of Occupational and Environmental Health, Chair, Computer Committee
1992-2003	Center for Health Effects of Environmental Contamination, Member, Executive Committee
1993-1999	Dept. of Preventive Medicine and Environmental Health, Member, Computerization and Informatics Committee
1993-1996	College of Medicine, Member, Prizes, Awards, and Fellowships Committee
1994-present	Environmental Health Sciences Research Center, Member, Executive Committee,
1994-1996	Division of Occupational and Environmental Health, Member, Admissions Committee
1996-1999	Division of Occupational and Environmental Health, Member, Student Training Committee
1996-1997	University of Iowa, Chair, Aerosol Physics Faculty Search Committee
1997	Division of Occupational and Environmental Health, Chair, Teaching and Training

	Strategic Planning Committee
1998-1999	Department of Preventive Medicine and Environmental Health, Member, Masters of Public Health Implementation Task Force
1999-2000	Dept. Occupational and Environmental Health, Member, Faculty Promotion Committee
1999-2004	College of Public Health, Chair, Curriculum Committee
1998-1999	Preventive Medicine and Environmental Health, Member, Strategic Planning Committee
2000	University of Iowa, Chair, Environmental Health Policy Faculty Search Committee
2000-present	CPH-COM, Member, New Investigator Research Award Review Committee
2000-2002	University of Iowa, Chair, Cellular and Molecular Toxicology Faculty Search Committee
2000-present	College of Public Health, Member, Public Health Council
2001-present	University of Iowa, Member, Holden Comprehensive Cancer Center
2001-2002	University of Iowa, Member, Industrial Hygiene Faculty Search Committee
2001-2002	Dept. Occupational and Environmental Health, Chair, Faculty Promotion Committee
2001-2002	University of Iowa, Member, Post Doctoral Education Advisory Committee
2001-2002	University of Iowa, Member, Enhancement of the Post Doctoral Experience Subcommittee
2002-2003	University of Iowa, Co-Chair, College of Medicine/College of Public Health Research Week Committee
2003-present	Center for Global and Regional Environmental Research, Member, Executive Committee
2003-2004	Dept. Occupational and Environmental Health, Chair, Faculty Promotions Committee
2004-2005	College of Public Health, Member, Collegiate Space Committee
2005-2006	College of Public Health, Chair, Security Committee
2005	Dept. Occupational and Environmental Health, Member, Departmental Faculty Review Committee
2005-2007	University of Iowa, Member, Public Health Research Council Committee
2006	University of Iowa, Chair, Review of the Program in Public Health Genetics
2007-2008	Occupational and Environmental Health, Member, Departmental Space Committee
2007	Occupational and Environmental Health, Chair, Faculty Promotions Committee
2007-2008	Occupational and Environmental Health, Chair, Rural Health Endowed Chair Faculty Search Committee

2007-2009	University of Iowa, Member, Admissions Committee Biosciences Graduate Programs
2008	Environmental Health Sciences Research Center and Dept. Internal Medicine, Co-Chair, Environmental Genomic Faculty Search Committee
2008-2009	University of Iowa, Member, Sustainability Curricula Task Force, Office of the President
2008	University of Iowa, Member, Animal Facility Task Force, Office of the Vice President for Research
2009-2010	College of Public Health, Member, Department of Epidemiology Review Committee
2009-2010	University of Iowa, Member, Strategic Initiatives Task Force on Research and Creative Excellence, Office of the Provost
2009-present	College of Public Health, Member, Executive Committee
2009-present	Member, University of Iowa Water Sustainability Steering Committee, Office of the Provost
2010	Reviewer, University of Iowa Carver Grant Program
2010-present	Member, College of Public Health Workgroup on Research, Service and Workforce Development
2010-2011	Chair, Central NMR Facility Review Committee, Office of the Vice-President for Research
2011-present	Member, College of Public Health Mentoring Committee

State or National Committees or Task Forces

1988	Society of Toxicology, Immunotoxicology Program Committee
1989	Society of Toxicology, Immunotoxicology Awards Committee
1989	Member, Iowa Department of Natural Resources, Air Toxics Review Panel
1990	Society of Toxicology, Immunotoxicology Program Committee
1991	Society of Toxicology, Immunotoxicology, Membership Committee
1992-1995	Society of Toxicology, Immunotoxicology, Education Committee
1996	Governor's Task Force on Air Dispersion Modeling of Air Toxics
1997	Member, State of Iowa Department of Agriculture and Land Stewardship Pesticide and Fertilizer Advisory Committee
2000-2001	Society of Toxicology, Vice President, Occupational Health Specialty Section
2000-2001	Member, Environmental Air Quality Program Advisory Board, Kansas State University
2000-2002	Society of Toxicology, Program Committee
2001-2002	Society of Toxicology, President, Occupational Health Specialty Section

2004-2005	Member, Iowa Department of Natural Resources, Animal Feeding Operations Technical Advisory Group
2007-present	Member, Program Committee, American Thoracic Society, Environmental & Occupational Health Section
2008-2009	Iowa Climate Change Advisory Council - Agriculture, Forestry and Waste Subcommittee, Office of the Governor, State of Iowa
2008	Advisor, University of Iowa Health Protection Office, Flood Response Group
2010	Environmental and Occupational Health Council

B. Other Professional Service

Referee Manuscript (I review ~ 20 manuscripts/year for the following journals)

Advanced Drug Delivery Reviews	Environmental Health Perspectives
Agricultural Economics	Environmental Research
Allergy	Environmental Science and Technology
Amer. Journal of Respir. & Critical Care Medicine	European Respiratory Journal
Amer. Journal of Respir. Cell & Molecular Biology	Gene Therapy
American Journal of Industrial Medicine	Indoor Air
American Journal of Physiology	Inhalation Toxicology
Annals of Agricultural and Environ. Medicine	Journal of Allergy and Clinical Immunology
Annals of Occupational Hygiene	Journal of Occupational and Environ. Hygiene
Antimicrobial Agents and Chemotherapy	Journal of Occupational and Environ. Medicine
Applied Environmental Microbiology	Nanotoxicology
Applied Occupational and Environmental Hygiene	New England Journal of Medicine
Archives of Environ. Contamination and Toxicology	Occupational and Environmental Medicine
Archives of Environmental Health	Science of the Total Environment
Chest	Social Science and Medicine
Emerging Infectious Diseases	Toxicological Sciences
Environmental Health	Toxicology and Applied Pharmacology

Conferences Organized

2000	The Role of Endotoxin in Occupational and Environmental Lung Disease: Exposure-Response Relationships and Susceptibility Factors, Symposium 39th Annual Meeting Society of Toxicology,, March 19, 2000, Philadelphia, PA
2000	Endocrine Disrupters and Pharmaceutically Active Chemicals in Drinking Water: Workshop, American Water Works Association Research Foundation and Center for Health Effects of Environmental Contamination, April 19, 2000, Chicago, IL

2001	Iowa Town Meeting – Concentrated Animal Feeding Operations: Airing the Environmental Health Issues, Sponsored by NIEHS, November 16, 2000, Des Moines, IA
2003	Organic Dusts – Agents, Disease and Prevention, The 4th Skokloster Workshop, April 7-10 2003, Gothenberg, Sweden
2003	College of Medicine/College of Public Health Research Week, University of Iowa, March 31-April 4, 2003, Iowa City, IA
2004	Environmental Health Impacts of Concentrated Animal Feeding Operations - A Scientific Workshop, Sponsored by NIEHS, March 29-31, 2004, Iowa City, Iowa
2004	Rebuilding the Unity of Health and the Environment in Rural America, Sponsored by the Institute of Medicine, November 29-30, 2004, Iowa City, Iowa
2006	University of Iowa, Environmental Health Sciences Research Center Retreat, June 7, 2006, Iowa City, Iowa
2007	Pew Commission on Industrial Farm Animal Production, Mini-Workshop, The University of Iowa, Aug 15, 2007, Iowa City, Iowa
2011	Partnerships in Environmental Public Health and Hansen Award Conference, September 8-9, 2011, Iowa City, Iowa (in preparation).

Society Memberships

PAST	
1976-1998	American Association for the Advancement of Science
1986-2000	American Conference of Governmental Industrial Hygienists
1989-1996	American Society of Heating, Refrigeration, and Air Conditioning Engineers
1991-1993	National Environmental Health Association
1993-2006	American Industrial Hygiene Association
1995-2006	American Association for Aerosol Research
1996-2000	Microscopy Society of America
2001-2005	American Public Health Association
PRESENT	
1987-present	Society of Toxicology
1989-present	American Society for Microbiology
1990-present	American Thoracic Society
2002-present	International Society for Exposure Assessment
2004-present	British Occupational Hygiene Society
2005-present	European Respiratory Society

Professionally Relevant Community Service

1997-2006	Instructor, Environmental Health Summer Institute for Rural Youth
1999-present	Assist with 8th Grade Science Class, Northwest and North Central Junior High Schools, Iowa City, IA
2000-2002	Advisor, Indoor Air Quality, Iowa City Community School District
2003	Public Meeting on Arsenic and Drinking Water, Buckeye, Iowa

2008-2009 Advisor of Flood Mitigation, Linn County, Cedar Rapids, IA Department of Public Health

Other Service

2000 Judge for Poster Session, College of Medicine/College of Public Health Research Week, University of Iowa, Iowa City, IA, April 25, 2000

2003 Judge for Poster Session, College of Medicine/College of Public Health Research Week, University of Iowa, Iowa City, IA, April 2, 2003

2003 Judge for Poster Session, Judge for "A PhD for Free" Competition for Veterinary Day, Graduate School of Animal Health Utrecht University, Netherlands, Nov 12, 2003

2005-2006 Judge for Poster Sessions, College of Medicine/College of Public Health Research Week

Selected Media Appearances

1989 Health Wanted Column, Printed in 60 Iowa Newspapers
Your home may be making you sick.

1989 Television interview with Tom Moore, Iowa City, IA
Sick buildings.

1990 Television interview for Health Beat with Dean Borg, Iowa City, IA
Sick building syndrome.

1993 U.I. Health Science Relations news release for Iowa newspapers.
Moisture in homes can promote mites and mold.

2000 Radio interview for Health Beat with Dean Borg, Iowa City, IA
Ehrlichiosis

2000-2008 Frequently quoted in the Des Moines Register, Cedar Rapids Gazette, Iowa City Press Citizen on issues of livestock confinements and environmental health

2002 National Public Radio, Science Friday Interview with Joe Palca on Asthma, San Francisco, CA

2006 National Public Radio Morning Edition, Interview with Greg Allen. "Chicken and Hog Farms Measured for Pollution." Mar 7, 2006.
Available: http://www.npr.org/templates/story/story.php?storyId=5248961

2006 Ivanhoe Broadcast News: *Discoveries & Breakthroughs in Science*. Interview with Ann Kerian. "Can your Home Trigger Asthma?" Reported Mar 2006.

2008 University of Iowa Post-Flood Instructional Video, (Online), Iowa City, IA
Mold Hazards and Safety Tips for Cleanup.
Available: http://www.youtube.com/watch?v=zMxpdzp4exI

2008 KGAN-TV, Cedar Rapids, IA
Three stories on: *Evaluation of Formaldehyde in FEMA Mobile Homes*

2009 The Researcher's Perspective: Environmental Health Perspectives Podcast Series, with Ernie Hood.
The Researcher's Perspective: *CAFOs, airborne pollutants, and antibiotic resistance/infectious diseases*
Available: http://ehp03.niehs.nih.gov/static/podcasts.action

2010 Iowa Public Radio, "Talk of Iowa" Interview with Dennis Reese. "Iowa's Watershed Year." Reported Feb 8, 2010.
Available: http://iowapublicradio.org/programSpecific.php?typeId=116&start=28#recent

2010 Iowa Public Radio, "The Exchange" Interview with Ben Kiefer. "Air Quality in Iowa." Reported July 8, 2010.
Available: http://iowapublicradio.org/programSpecific.php?typeId=35

2011 KCRG Cedar Rapids, IA
To The Point: Extreme Weather & Tobacco Products Aimed at Kids. Available at: http://www.kcrg.com/news/tothepoint/To-The-Point-Extreme-Weather--Tobacco-Products-Aimed-at-Kids-115245149.html

August, 2017

Curriculum Vitae

GEORGE D. THURSTON
3 Catherine Court
[redacted]
Email: george.thurston@nyu.edu
http://www.med.nyu.edu/biosketch/gdt1

Education

Degree	**Field**	**Institution**
Diploma	Academic	Barrington High School, RI
Sc.B. (Honors)	Environmental Engineering	Brown University
A.B.	Environmental Studies	Brown University
S.M.	Environmental Health Sciences	Harvard Univ. Schl. of Public Health
Sc.D.	Environmental Health Sciences	Harvard Univ. Schl. of Public Health

Postdoctoral Training

Specialty	Mentor	Place of Training
Environ. Epidemiology	Dr. H. Ozkaynak	Harvard Univ., Kennedy Schl. of Gov., Camb., MA

Internships and Residencies N/A

Clinical and Research Fellowships N/A

Licensure and Certification: Environmental Benefits Mapping and Analysis Program - Community Edition (BenMAP-CE) Training Certification (August 2014).

Academic Appointments

1987-1993	Assistant Professor, Dept. of Environmental Medicine, New York University School of Medicine, New York City, NY.
1993-2006	Associate Professor (Tenured), Dept. of Environmental Medicine, New York University School of Medicine, New York City, NY.
2007-present	Professor (Tenured), Dept. of Environmental Medicine, New York University School of Medicine, New York City, NY.
2007-present	Affiliated Faculty, Environmental Studies Program, College of Arts and Sciences, New York University, New York City, NY.
2012-present	Affiliated Faculty, Marron Institute on Cities and the Urban Environment, New York University, New York City, NY
2012-present	Faculty Mentoring Champion, Dept. of Environmental Medicine, New York University School of Medicine, New York City, NY.

Hospital Appointments: N/A

Other Professional Positions and Visiting Appointments:

Oak Ridge Institute for Science and Education (ORISE) Fellow (2008-2010)

Major Administrative Responsibilities

Year	*Title, Place of Responsibility*
1995-2004	Director, Community Outreach and Environmental Education Program, NYU-NIEHS Center of Excellence, Nelson Inst. of Environ. Med., NYU School of Medicine, Tuxedo, NY
2002-2012	Deputy Director, NYU Particulate Matter Research Center, Nelson Inst. of Environmental Medicine, NYU School of Medicine, Tuxedo, NY
2007-2008	Director, Environmental Epidemiology Core, NYU-NIEHS Center of Excellence, Department of Environmental Medicine, Tuxedo, NY
2010-2015	Co-Leader, Metals Research Focus Group, NYU-NIEHS Center of Excellence, Department of Environmental Medicine, Tuxedo, NY.
2012-2016	Chair, Appointments and Promotions Committee, Department of Environmental Medicine, NYU School of Medicine.
2014-2016	Co-Chair, Environmental Health Research Affinity Group, NYU Global Institute of Public Health (GIPH), New York University, Washington Square.
2012-present	Director, Program in Exposure Assessment and Human Health Effects, Department of Environmental Medicine, NYU School of Medicine.

Teaching Experience

Year	*Name of course*		*Type of Teaching*
1984-1994	Air Poll. Transport Modeling	(G48.2048)	Course Director
2006-present	Climate, Air Pollution, & Health	(G48.1010)	Course Director
1986-present	Aerosol Science	(G48.2033)	Course Director
1984-2010	Environmental Contamination	(G48.2305)	Lecturer
1984-present	Environ. Hygiene Measurements	(G48.2035)	Lecturer/Lab
1990-1998	Environmental Toxicology	(G48.1006)	Lecturer
1993-1995	Environmental Epidemiology I	(G48.2039)	Lecturer
2001-2003	NYU Summer Institute, Wagner School		Lecturer
2006-present	Environmental Epidemiology I	(G48.2039)	Lecturer
2006-present	Science, Health & Envir. Journalism	(G54.1017.0)	Lecturer
2009-2011	Global Environmental Health	(U10.2153.1)	Course Director
2009-2012	Global Issues in Environ. Health	(G48.1011)	Course Director
2009-present	Earth Systems Science (undergrad)	(V36.0200)	Lecturer
2011-present	Principles of Environmental Health	(G48.1004)	Course Director
2013-present	Environ. Hygiene Measurements	(G48.2035)	Course Co-Director

Awards and Honors

November 1999	Orange Environment Citizens Action Group, OE Award for Excellence in Translating Science to the Public
December 2000	NYU School of Medicine Dean's Research Incentive Award
October 2012	Recipient of the "Haagen Smit Prize" for Best Paper, Atmospheric Environment. http://geo.arc.nasa.gov/sgg/singh/winners12.html
March 2013	Recipient of the "Best Paper of the Year – Science" Award from ES&T http://pubs.acs.org/doi/full/10.1021/es400924t

Major Committee Assignments

New York University Committees

2007-present: University Sustainability Task Force
2010-2012: University Faculty Senate Alternate
2012-present: University Faculty Senator

NYU School of Medicine Departmental Committees

1992-1998:	Sterling Forest Library Committee, Member, NYU SOM Dept of Environ. Medicine
1991-1994	Health & Safety Committee, Member, NYU SOM Dept. of Environ.. Medicine
1992-2004	Community Outreach and Education Comm., Chairman, NYSOM Dept. of Environ. Med.
1999-2004	Dept. Chairman's Internal Advisory Comm., Member, NYUSOM Dept. of Environ. Med.
2005-present	Dept. Academic Steering Committee, Member, NYUSOM Dept. of Environ. Medicine
2007-2012	Dept. Appointments & Promotions Comm., Member, NYUSOM, Dept. of Environ. Medicine
2012-present	Dept. Appointments & Promotions Comm., Chair, NYUSOM, Dept. of Environ. Medicine

Advisory Committees

Regional

1983-1984	Massachusetts Acid Rain Advisory Board, Member, Mass. Dept. of Env. Protection
1984-1986	Committee on Environ. And Occup. Health. , NY State American Lung Association
1991-1996	Air Management Advisory Comm., Member of Health Effects Subcom., NY State DEC
1995-1999	Engineering Advisory Board, Member, Tuxedo, NY
1997-1998	Advisory Committee to the Mayor on the Port of Newburgh, Member, Newburgh, NY
1996-1999	CUES Asthma Working Group, Member, New York Academy of Medicine
2008-2010	New York City Community Air Study (NYCCAS) Advisory Panel

National

1995-1999	Comm. on Health Effects of Waste Incineration, Member, National Academy of Sciences
1995-1999	National Air Conservation Commission, Member, American Lung Association
2000-2004	National Action Panel on Environment, Member, American Lung Association
2005-present	National Clean Air Committee, Member, American Lung Association
2007-2010	U.S. EPA Clean Air Science Advisory Committee (CASAC) for SOx and NOx
Mar. 2012	EPA Panelist for "Kickoff Workshop to Inform EPA's Review of the Primary NO_2 NAAQS"

International

1996-1997	Sulfur in Gasoline Health and Environment Panel, Chairperson, Health Canada
Sept. 2007	Illness Cost of Air Pollution Expert Committee, Canadian Medical Association
2008-2012	Global Burden of Disease (GBD), Committee on the Human Health Effects of Outdoor Air Pollution, World Health Organization (WHO)

Grant Review Committees (National)

March 1989	EPA Air Chemistry and Physics Extramural Grants Review Panel (*ad hoc member*)
Oct. 1989	NIEHS P30 Center Special Review Panel (*ad hoc member*)
July 1992	NIH R01 Epidemiology & Disease Control Study Section (*ad hoc member*)
Nov. 1992	NIEHS P20 Center Development Grant Special Study Section, (*ad hoc member*)
June 1996	EPA Special Review Panel of the Health Effects Institute (HEI) (*ad hoc member*)
March 1997	EPA Office of Res. and Development External Grant Review Panel (*ad hoc member*)
April 1997	NIEHS Community-Based Participatory Res. R01 Special Study Sect. (*ad hoc member*)
July 1997	EPA National Environ. Research Lab Intramural Research Review Panel (*ad hoc member*)
June 1998	EPA Office of Res. and Development External Grant Review Panel (*ad hoc member*)
July 1998	EPA Climate Policy and Programs Division Grant Application Review (*ad hoc member*)
Oct. 1998	Mickey Leland Center for Air Toxics Grant Review Panel (*ad hoc member*)
April 2000	NIEHS P30 Center Special Review Panel (*ad hoc member*)
July 2001	NIEHS Community-Based Participatory Res. R01 Special Study Sect. (*ad hoc member*)
Dec. 2001	NIEHS Program Project P01 Site Visit Review Panel (*ad hoc member*)
April 2003	NIH R21 Fogarty Health, Env. and Economic Development Study Sect. (*ad hoc member*)
Nov. 2003	U.S. EPA STAR Grant Panel (Epidemiologic Research on Health Effects of Long-Term Exposure to Ambient Particulate Matter and Other Air Pollutants) (*member*)
October 2004	NIEHS Program Project P01 Review Panel (*ad hoc member*)
June 2005	NIH Special Emphasis Panel (ZRG1 HOP Q 90 S) (*ad hoc member*)
Nov. 2005	NIH Infectious Disease, Reproductive Health, Asthma/Allergy, and Pulmonary (IRAP) Conditions Study Section Review Panel (*ad hoc member*)

Feb. 2006	NIH Infectious Disease, Reproductive Health, Asthma/Allergy, and Pulmonary (IRAP) Conditions Study Section Review Panel (*ad hoc member*)
June 2006	NIH Infectious Disease, Reproductive Health, Asthma/Allergy, and Pulmonary (IRAP) Conditions Study Section Review Panel (*ad hoc member*)
Dec. 2006	NIEHS Special Emphasis Panel on Genetics, Air Pollution, and Respiratory Effects (ZES1 TN-E FG P) (*member*)
Nov. 2007	NIH Special Emphasis Panel on Community Participation in Research (ZRG1 HOP-S) (*member*)
June 2009	NIH Study Section Review Panel on Challenge Grants in Health & Science Research
March 2011	U.S. EPA Science to Achieve Results (STAR) Graduate Fellowship Review Panel – Clean Air Panel (*chair*)
Sept. 2011	NIH Special Epidemiology Study Section (ZRG1 PSE K 02 M) (*member*)
Oct. 2012	NIH Cardiac and Sleep Epidemiology (CASE) Study Section (*ad hoc member*)
June 2013	NIH Special NHLBI Dataset Study Section (ZRG1 PSEQ 56) (*member*)
July 2013	NIH "Career Awards" Study Section (ZES1 LWJ-D, K9) (*member*)
Sept. 2013-15	Permanent Member, NIH Cardiac and Sleep Epidemiology Study Section (CASE) Study Section
Sept. 2015-17	Permanent Member, NIH Cancer, Heart, and Sleep Epidemiology Study Section (CHSE) Study Section
Nov. 2016	NIEHS R13 Study Section (*member*)

Memberships, Offices, And Committee Assignments in Professional Societies

Year	*Society/Committees*
1980-1996	Air and Waste Management Association (Comm. on Health Effects and Exposure,)
1992-Present	American Thoracic Society (ATS): Environmental and Occup. Health (EOH) Assembly, 1995-1999, 2012-present: ATS EOH Long Range Planning Committee; 1993-1994, 2002-2004: ATS Program Committee 2006-2007 Chairman of the ATS-EOH Nominating Committee 2010-present: ATS Environmental Health Policy Committee, member 2012-2014: ATS Environmental Health Policy Committee, Vice-Chairman 2015-2018: ATS Environmental Health Policy Committee, Chairman
1990-present	International Society of Exposure Science
1992-present	International Society for Environmental Epidemiology (Annual Meeting Program Committee: 1998, 2000, 2003, 2004, 2006) (ISEE Conference Planning Committee: 2006-present)
2007-2009	New York Academy of Sciences (membership given in appreciation for a 1/23/07 NYAS forum presentation)
2017-present	American Public Health Association (APHA)

Editorial Positions

Journal Board Membership

Year	*Name of Board*
1993-2008	International Society of Exposure Analysis (J. of Exp. Anal. and Environ. Epid.)
2017-present	Environmental Health Perspectives (EHP)

Ad Hoc Manuscript Reviewer

Years	*Journal*
1996-1998	American Journal of Epidemiology
1994	Archives of Environmental Health
1995-present	Atmospheric Environment
1995-present	Environmental Health Perspectives
1994-present	Environmental Research

2004-present	Environmental Science and Technology
2011-present	Epidemiology
1993-present	Journal of Exposure Analysis and Environmental Epidemiology
1994-present	Journal of the Air and Waste Management Association
1996-present	Journal of the American Medical Association
1997-present	Journal of Occupational and Environmental Medicine
1997-present	Journal of Respiratory and Critical Care Medicine
2006-present	Thorax

Scientific Report Reviewer

August, 1986	Reviewer for the National Academy of Sciences, Board on Environmental Studies and Toxicology report "The Airliner Cabin Environment: Air Quality and Safety"
October, 2002	Reviewer for the NAS, Board on Environmental Studies and Toxicology report "Estimating the Public Health Benefits of Proposed Air Pollution Regulations"

Mentoring of Graduate Students, Residents, Post-Doctoral Fellows in Research

Under direct supervision:

Student Name	*Type of Position*	*Time Period*	*Present Position*
Mark Ostapczuk	Masters	1984-1986	Industrial Hyg., Barr Labs, Pomona, NJ
Kazuhiko Ito	Masters/Doctoral	1984-1990	Scientist, NYC Dept. of Health, NYC, NY
Peter Jaques	Masters/Doctoral	1988-1998	Assoc. Prof., Clarkson Univ., Potsdam, NY
R. Charon Gwynn	Masters/Doctoral	1992-1999	Epidemiologist, Columbia Univ., NY
Ramona Lall	Masters/Doctoral	2000-2007	Research Sci. IV, NYC Dept. of Health, NY
Ariel Spira-Cohen	Masters/Doctoral	2003-2009	Research Sci. III, NYC Dept. of Health, NY
Kevin Cromar	Masters/Doctoral	2008-2012	Assistant Professor, NYU School Of Medicine
Lital Yinon	Doctoral	2011-present	Doctoral Candidate, NYU School of Medicine
Chris Lim	Doctoral	2012-present	Doctoral Candidate, NYU School of Medicine

In advisory function (thesis committee):

Student Name	*Advisory Role*	*Time Period*	*Student's Supervisor*
Shao-Keng Liang	Doctoral Committee member	1990-1994	Dr. J. Waldman, UMDNJ, Rutgers
Jerry Formisano	Doctoral Committee member	1997-2000	Dr. M. Lippmann, NYU SOM
Yair Hazi	Doctoral Committee member	1993-2001	Dr. B. Cohen, NYU SOM
Samantha Deleon	Doctoral Committee member	1997-2003	Dr. K Ito, NYU SOM
Chun Yi Wu	Doctoral Committee member	2000-2004	Dr. L.C. Chen, NYU SOM
Carlos Restrepo	Doctoral Committee member	2002-2004	Dr. R. Zimmerman, Wagner, NYU
Shaou-I Hsu	Doctoral Committee member	2000-2009	Dr. M. Lippmann, NYU-SOM
Steven Schauer	Doctoral Committee member	2007-2009	Dr. B. Cohen, NYU-SOM
Christine Ekenga	Doctoral Committee Chair	2009-2011	Dr. G. Friedman-Jimenez, NYU-SOM
Rebecca Gluskin	Doctoral Committee Chair	2009-2012	Dr. Kazuhiko Ito, NYU SOM
Jiang Zhou	Doctoral Committee Chair	2008-2012	Dr. Kazuhiko Ito, NYU SOM
Eric Saunders	Doctoral Committee Chair	2012-present	Dr. Terry Gordon, NYU SOM

Teaching Awards Received

N/A

Major Research Interests

1) Air Pollution Epidemiology: Real-world air pollution exposures and human health effects in the general population and study cohorts of suspected susceptible individuals (e.g., children).

2) Aerosol Science: Ambient particulate matter aerosol exposures, including designing and implementing air monitoring equipment to collect human exposures to air pollution.

3) Environmental Exposure Assessment: Methods to assess human exposures and health effects from air pollution, especially the development of source apportionment models to separate human effects on the basis of pollution source. Design of epidemiological models/methods that better incorporate potential air pollution confounders/effect modifiers (e.g. weather and genetic influences).

Patents

None

Boards and Community Organizations

1990-1995	St. Mary's Episcopal Church, Tuxedo, NY, Vestry member
1992-2008	Monroe-Woodbury Soccer Club, Coach (Board Member: 1999-2000)
1994-1999	Orange County Citizen's Foundation, Member
1999-2009	Y2CARE Monroe-Woodbury, NY School District Residents Action Group, Founder
2005-present	St. Mary's Episcopal Church, Tuxedo, NY, Community Outreach Committee, Member
2006-present	EPISCOBUILD-Newburgh, NY Habitat for Humanity Advisory Board, Member
2012-present	St. Mary's Episcopal Church, Tuxedo, NY, Vestry member

Military Service

None

International Scientific Meetings Organized

May 28-30, 2003	"Workshop on the Source Apportionment of PM Health Effects." U.S. EPA PM Centers, Harriman, NY.
Aug. 1-4, 2004	"Sixteenth Conference of the International Society for Environmental Epidemiology," Kimmel Conference Center, Washington Square, New York University, New York City, NY.

Scientific Forums for the Public Organized

June 2001	"Science and Community Interaction Forum on the Environment." Held at Hostos Community College, Bronx, , New York City, NY.
October 2001	"Forum on Environmental Health Issues Related to the World Trade Center Disaster." Held at NYU Law School, Washington Square, New York City, NY.
October 2002	"2nd Annual Forum on the Environmental Health Issues Related to the World Trade Center Disaster." Held at Manhattan Borough Community College, New York City, NY.
October 2003	"3nd Annual Forum on the Environmental Health Issues Related to the World Trade Center Disaster." Held at NYU Lower Manhattan Campus, New York City, NY.

Invited U.S. House and Senate Congressional Testimony

Feb. 5, 1997	"Human Health Effects of Ambient Ozone Exposures" Statement before the Committee on Environment and Public Works, Subcommittee On Clean Air, Wetlands, Private Property, And Nuclear Safety, U.S. Senate, Washington, DC. http://epw.senate.gov/105th/thurston.htm
April 16, 1997	"Human Health Effects of Ambient Ozone and Particulate Matter Exposures." Statement before the Government Reform and Oversight Committee of the U.S. House of Representatives, Washington, D.C.

May 8, 1997 "Human Health Effects of Ambient Ozone and Particulate Matter Exposures." Statement before the Subcommittee on Health and Environment, Committee on Commerce of U.S. House of Representatives, Washington,. D.C.

July 29, 1997, "The Human Health Effects of Ambient Ozone And Particulate Matter Air Pollution." Statement before the Subcommittee on Commercial and Administrative Law of the Judiciary Committee of the U.S. House of Representatives, Washington,. D.C. http://judiciary.house.gov/legacy/commercial.htm

October 22, 1997 "Ozone and Particulate Matter Air Pollution Health Effects." Statement before the U.S. Senate Committee on Environment and Public Works Subcommittee on Clean Air, Wetlands, Private Property, and Nuclear Safety. Washington, DC.

http://epw.senate.gov/105th/thursto2.htm

July 15, 1999: "The Mandated Release of Government-Funded Research Data." Statement before the Committee On Government Reform, Subcommittee on Government Management, Information And Technology, U.S. House of Representatives

July 26, 2001 "The Human Health Effects Of Air Pollution From Utility Power Plants." Statement before the Committee on Environment and Public Works, U.S. Senate, Washington, D.C.

http://www.c-spanvideo.org/program/PlantE

Feb 11, 2002: "The Air Pollution Effects of The World Trade Center Disaster." Statement before the Committee On Environment And Public Works, Subcommittee On Clean Air, Wetlands, And Climate Change. United States Senate, New York, NY.

http://www.c-spanvideo.org/program/Qualitya

March 5, 2002 "The Use of the Nationwide Registries to Assess Environmental Health Effects." Statement before the Committee On Health, Education, Labor, And Pensions, Subcommittee On Public Health, U.S. Senate, Washington, DC.

Sept. 3, 2002 "The Clean Air Act and The Human Health Effects of Air Pollution from Utility Power Plants." Statement before the U.S. Senate Committee on Health, Education, Labor, and Pensions, Subcommittee on Public Health, Washington, D.C. http://www.c-spanvideo.org/program/AirStand

April 1, 2004 "The Human Health Benefits Of Meeting the Ambient Ozone And Particulate Matter Air Quality Standards." Statement before the Committee on Environment and Public Works, Subcommittee on Clean Air, Climate Change, and Nuclear Safety, U.S. Senate, Washington, D.C.

http://epw.senate.gov/epwmultimedia/epw040104.ram

July 19, 2006 "The Science And Risk Assessment Of Particulate Matter (PM) Air Pollution Health Effects." Statement before the Committee on Environment and Public Works, U.S. Senate, Washington, D.C. *http://epw.senate.gov/hearingstatements.cfm?id=258766*

May 7, 2008 "Science And Environmental Regulatory Decisions." Statement before the Committee On Environment And Public Works of The U.S. Senate, Subcommittee on Public Sector Solutions to Global Warming, Oversight, and Children's Health Protection, U.S. Senate, Washington, D.C.

http://www.c-spanvideo.org/program/RegulatoryD

http://epw.senate.gov/public/index.cfm?FuseAction=Hearings.Hearing&HearingID=a1954f70-802a-23ad-4192-fc2995dda7f4

October 4, 2011 "The Science of Air Pollution Health Effects and the Role of CASAC in EPA Standard Setting" Statement before the Subcommittee on Energy and the

Environment, Committee on Science, Space and Technology, U.S. House Of Representatives, Washington, DC.

http://science.house.gov/hearing/energy-and-environment-subcommittee-–-hearing-quality-science-quality-air

Other Invited Presentations

Regional Presentations

April 21, 1993	"Summertime Smog and Hospital Admissions for Respiratory Illness", Environmental and Occupational Health Sciences Institute Seminar Series Lecture, UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ.
Dec .14, 1995	"Health Effects of Acidic Aerosols", NY State Dept. of Health, Wadsworth Center Seminar, Albany, NY
Jan. 18, 1996	"Outdoor Air Pollution and Asthma in Children " American Lung Association Press Briefing, New York, NY.
June 1, 1996	"Asthma and Urban Air Pollution", WHEACT, Harlem Hospital, New York, NY.
July17, 1996	"Asthma and Outdoor Air Pollution", Making the Connection: Urban Air Toxics & Public Health. Northeast States for Coordinated Air Use Management (NESCAUM), Roxbury, MA
Feb. 11, 1997	"Outdoor Air Pollution and Asthma", Bellevue Hospital Asthma Clinic *Grand Rounds*. New York City, NY.
Feb. 26, 1998	"Scientific Research for Ozone and Fine Particulate Standards ", Pace University School of Law, White Plains, NY
Nov. 30, 1998	"Outdoor Air Pollution and Asthma", Center for Urban and Environmental Studies (CUES), NY Academy of Medicine,, New York, NY
Feb. 22, 1999	"Asthma and Air Pollution", Cornell University, Ithaca, NY
April 28, 2001	"Asthma and Air Pollution in New York City", NYC Council Environmental Candidate School, NY League of Conservation Voters, New York, NY.
Nov. 1, 2001	"Air Quality and Environmental Impacts Due to the World Trade Center Disaster", Testimony before the Comm. on Environ. Protection, NYC Council, New York, NY.
Nov. 13, 2001	"WTC Pollution Impacts in Lower Manhattan", Stuyvesant High School Parents Association General Meeting, Stuyvesant High School, New York, NY
Feb. 28, 2002	"Lung Cancer Effects of Long-Term Exposure to Ambient Fine Particulate Matter", Mailman School of Public Health, Columbia University, New York, NY.
April 5, 2002	"Air Pollution Impacts of the WTC Disaster", 23rd Annual Scientific Conference of the NY/NJ Education and Research Center: "Worker Health and Safety: Lessons Learned in the Aftermath of Sept. 11, 2001," Mt. Sinai School of Medicine, NYC, NY
April 21, 2002	"Adverse Health Effects of Power Plant Air Pollution on Children" Earth Day 2002, 14th Street Y, New York City, NY.
May 23, 2002	"Human Health Effects of Power Plant Pollution", Rockland County Conservation Association, Suffern, NY
May 31, 2002	"Environmental Health Impacts of the World Trade Center Disaster", University of Rochester Medical School, Rochester, NY.
Sept. 19, 2002	"Community Air Pollution Related to the World Trade Center Disaster". NYC Council Forum: The Environmental Health Consequences of 9/11: Where Do We Stand One Year Later? Borough of Manhattan Community College, New York City, NY.
Oct. 3, 2002	"Community Exposures to Particulate Matter Air Pollution from the World Trade Center Disaster", Mount Sinai School of Medicine *Grand Rounds*, New York City, NY.

April 11, 2003 "Environmental Impacts of the World Trade Center Disaster", NIEHS Public Interest Liaison Group, New York City, NY.

April 21, 2003 "Asthma and Air Pollution", Airborne Threats to Human Health, NIEHS Town Hall Meeting, Syracuse, NY.

May 7, 2003 "Asthma and Air Pollution in NY City" Environmental Candidate School for New York City Council Candidates, Wagner School, NYU, New York City, NY.

July 21, 2003 "Health Effects of Particulate Matter Air Pollution", Ozone Transport Commission, Philadelphia, PA.

Nov. 18, 2004 "Ambient Air Pollution Particulate Matter (PM): Sources and Health Impacts". U.S. Environmental Protection Agency, Region 2, New York City, NY.

Feb. 17, 2005 "Community Air Pollution Aspects Of The Demolition Of 9-11 Contaminated Buildings". Testimony before the Committee On Lower Manhattan Redevelopment, New York City Council, New York City, NY.

Oct. 19, 2005 Air Pollution Health Effects: Consideration of Mixtures. Fall Meeting of the Mid-Atlantic Chapter of the Society of Toxicology (MASOT), East Brunswick, NJ.

Dec.7, 2006 Asthma and Air Pollution Effects in the South Bronx. New York City Child Health Forum, The Children's health Fund, Harlem, NYC, NY.

Jan. 18, 2007 Air Pollution Effects in New York City. NYU Environmental Sciences Seminar Lecture, Washington Square, NYC, NY.

Jan. 23, 2007 The South Bronx Backpack Study: Asthma and Air Pollution in NYC. Presented at the forum "High Asthma Rates in the Bronx: What Science Now Knows and Needs to Learn." New York Academy of Sciences, 7 World Trade Center, NYC, NY.

Oct. 2, 2009 "Diesel Air Pollution and Asthma in New York City". Brown Superfund Research Program, Brown University, Providence, RI.

June 19, 2012 "The Backpack Study of Asthma and Diesel Air Pollution in the South Bronx". Region 1 U.S. EPA, Citizen Science Workshop, New York City, NY.

National Presentations

Oct. 20, 1987. NIEHS Symposium on the Health Effects of Acid Aerosols: "Re-examination of London, England, Mortality in Relation to Exposure to Acidic Aerosols During 1963-1972 Winters" RTP, NC.

Aug. 13, 1991 "Kuwait Mortality Risks from SO_2 and Particles: Insights from the London Fogs"' The Kuwait Oil Fires Conf., American Academy of Arts and Sciences, Cambridge, MA.

Jan. 24, 1994 "Air Pollution Epidemiology: Is the Model the Message?" The First Colloquium on Particulate Air Pollution and Human Morbidity and Mortality". Beckman Center of the NAS, Irvine, CA.

May 23, 1994 " Ozone Epidemiological and Field Studies". American Thoracic Society Annual Meeting, Boston, MA.

May 25, 1994 "Epidemiological Evidence Linking Outdoor Air Pollution and Increased Hospital Admissions for Respiratory Ailments" American Thoracic Society Annual Meeting, Boston, MA.

May 6, 1996 "Associations Between PM_{10} & Mortality in Multiple US Cities". Second Colloquium on Particulate Air Pollution and Health. Park City, Utah.

Sept. 5, 1996 "Particulate Matter Exposure Issues for Epidemiology" U.S. EPA Particulate Matter Workshop, RTP, NC

April 3, 1997 "Health Effects of Ambient Ozone & Particulate Matter" Air and Waste Assoc. Regional Conference On Impacts of EPA's Proposed Changes to Ozone and PM Standards, Oak Brook, IL

April 22, 1998 "The New EPA Standards for Ambient PM and Ozone" American Lung Association Annual Meeting, Chicago, IL.

Dec. 21, 1999	"Global Overview of Human Death and Illness due to Air Pollution". California Air Resources, Sacramento, CA.
March 24, 2000	"Estimating Ancillary Impacts, Benefits and Costs Of Proposed GHG Mitigation Policies For Public Health" Resources for the Future, Wash., DC.
June 24, 2002	"Investigations Into the Environmental Health Impacts Related to the WTC Disaster" Air And Waste Management Annual Meeting, Baltimore, MD.
July 15, 2002	"Air Pollution and Human Health" NIEHS Built Environment Conference, RTP, NC
July 26, 2002	"The Human Health Effects of Power Plant Emissions and Associated Air Pollution", The Environment & Health Forum, Physicians for Social Responsibility, Washington, DC.
October 7, 2002	"Community Exposures to Particulate Matter Air Pollution from the World Trade Center Disaster" Plenary Speaker at the American Association for Aerosol Research, Charlottesville, North Carolina.
Nov. 11, 2002	"Characterization of Community Exposures to World Trade Center Disaster Airborne and Settled Dust Particulate Matter Air Pollution", American Public Health Association Annual Meeting, Philadelphia, PA.
Dec. 5, 2002	"Susceptibility of Older Adults to Air Pollution", EPA Workshop on Differential Susceptibility of Older People to Environmental Hazards. National Academy of Sciences, Washington, DC.
Feb. 3, 2003	"Health Effects of Particulate Matter Air Pollution", National Air Quality Conference, U.S. EPA, San Antonio, Texas
May 17, 2003	"Assessing the Influence of Particle Sources and Characteristics on Adverse Health Effects of PM", PG18 - New Tools to Evaluate the Health Effects of Air Pollution in Epidemiologic Studies. American Thoracic Society Annual Meeting, Seattle, WA.
Sep. 10, 2003	"Nature and impact of World Trade Center Disaster fine particulate matter air pollution at a site in Lower Manhattan after September 11." Annual Meeting of the American Chemical Society, New York, NY.
October 20, 2003	"Translating Air Pollution Risks to the Community" Annual Meeting of the NIEHS Center Directors, Baltimore, MD.
May 18, 2004	"The Health Imperative for Implementation of the Clean Air Act" State and Territorial Air Pollution Program Administrators/ Association of Local Air Pollution Control Officials (STAPPA/ALAPCO) National Conference, Point Clear, Alabama.
Oct. 18, 2004	"NIEHS Centers' Investigations of the World Trade Center Collapse Pollution Exposures and Effects: A Public Health Collaboration" National Institute of Environmental Health Sciences Center Directors' Meeting, Research Triangle Park, NC.
May 25, 2005	"Human Health Effects Associated with Sulfate Aerosols", American Thoracic Society Annual Meeting, San Diego, CA
Oct. 24, 2005	"The Science Behind the Particulate Matter (PM) Standards" State and Territorial Air Pollution Program Administrators/ Association of Local Air Pollution Control Officials (STAPPA/ALAPCO) National Conference, Alexandria, Virginia.
Oct. 14, 2008	"Diesel Air Pollution and Asthma Exacerbations in a Group of Children with Asthma" Annual Meeting of the International Society for Environmental Epidemiology (ISEE). Pasadena, California.
Feb. 26, 2010	"What studies are appropriate to use to estimate health impacts from specific sources such as diesel PM?" CARB Symposium: "*Estimating Premature Deaths from Long-term Exposure to* $PM_{2.5}$". Sacramento, CA.
May 6, 2011	"Lung Cancer Risks from Exposure to Fine Particle Air Pollution" NYU Cancer Institute Symposium: "Cancer and the Environment", NYC, NY.
May 16, 2012	"The Human Health Effects of Air Pollution" The Air We Breathe: Regional Summit on Asthma and Environment at Allegheny General Hospital, Pittsburgh, PA.

June 20, 2013 "Particles in our Air: A Global Health Risk", Northeastern University, Research Seminar. Boston, MA.

Mar 5, 2015 "Air Pollution, Climate Change and Health". Stegner Institute Air Quality Symposium, Salt Lake City, Utah.

International Presentations

May 1, 1987 "Acid Aerosols: Their Origins, Occurrence, and Possible Health Effects", Canadian Environmental Health Directorate Seminar, Health and Welfare Canada, Ottawa, Canada

July 2, 1987 "Health Effects of Air Pollution in the US", University of Sao Paulo, Sao Paulo, Brasil

Feb. 5, 1991 "Results from the Analysis of Toronto Summer Sulfate and Aerosol and Acidity Data", Workshop on Current Use and Future Directions of Hospital-Based Data in the Assessment of the Effects of Ambient Air Pollution on Human Health. Health and Welfare Canada, Ottawa, Canada.

April 23, 1997 "An Evaluation of the Role of Acid Aerosols in Particulate Matter Health Effects", Conference on the Health Effects of Particulate Matter in Ambient Air. Air & Waste Management Association, Prague, Czech Republic.

May 12, 1998 "The Health Effects of PM and Ozone Air Pollution", Air Pollution: Effects on Ontario's Health and Environment. Ontario Medical Association, Toronto, Canada

Nov. 1, 1999 "Climate Change and the Health Impacts of Air Pollution". The Public Health Opportunities and Hazards of Global Warming Workshop at the U.N. Framework Convention on Climate Change, Conference of Parties (COP5), Bonn, Germany.

August 31, 2000 "Particulate Matter Air Pollution and Health in three Northeastern Cities", World Congress on Lung Health, Florence, Italy

January 29, 2001 "PM Exposure Assessment and Epidemiology", NERAM International Colloquia: Health and Air Quality: Interpreting Science for Decision Makers. Ottawa, Canada.

Feb. 4-5, 2002: "Air Pollution Exposure Assessment Approaches in U.S. Long-Term Health Studies", Workshop on Exposure Assessment in Studies on the Chronic Effects of Long-term Exposure to Air Pollution, World Health Organization, Bonn, Germany

May 2, 2002 "Health Effects of Sulfate Air Pollution" Air Pollution as a Climate Forcing Workshop, East-West Center, Honolulu, Hawaii

Sept. 24, 2003 "Identification and Characterization of World Trade Center Disaster Fine Particulate Matter Air Pollution at a Site in Lower Manhattan Following September 11." Annual Meeting of the International Society for Environmental Epidemiology (ISEE). Perth, Australia.

Dec. 1, 2003 "Terrorism and the Pulmonary Effects of the World Trade Center Disaster Particulate Matter Air Pollution", British Thoracic Society, London, England.

Sept 14, 2005 "Results And Implications of The Workshop on the Source Apportionment of PM Health Effects", Annual Meeting of the International Society for Environmental Epidemiology (ISEE). Johannesburg, South Africa.

Sept. 4, 2006 "A Source Apportionment of U.S. Fine Particulate Matter Pollution for Health Effects Analysis", Annual Meeting of the International Society for Environmental Epidemiology (ISEE). Paris, France.

Sept. 4, 2007 "Applying Attributable Risk Methods to Identify Susceptible Subpopulations", Annual Meeting of the International Society for Environmental Epidemiology (ISEE). Mexico City, Mexico.

Aug. 27, 2009 "Ischemic Heart Disease Mortality Associations with Long-Term Exposure to $PM_{2.5}$ Components", Annual Meeting of the International Society for Environmental Epidemiology (ISEE). Dublin, Ireland.

Dec. 1, 2010 "The Hidden Air Quality Health Benefits of Climate Change Mitigation". The Energy and Resources Institute (TERI), Lodhi Road, New Delhi, India.

July 17, 2012	"Recent Findings on the Mechanisms and Health Risks of Particulate Matter Air Pollution", European Centre for Environment & Human Health, Truro, England.
Aug. 29, 2012	"Health Effects of PM Components: NYU NPACT Epidemiology Results and their Integration with Toxicology Results", Annual Meeting of the International Society for Environmental Epidemiology (ISEE). Columbia, SC.
May 20, 2013	"Long-term $PM_{2.5}$ Exposure and Mortality in the NIH-AARP Cohort", Annual Meeting of the American Thoracic Society (ATS). Philadelphia, PA.
Oct. 27, 2013	"Human Health Effects and Global Implications of Particle Air Pollution", Center of Excellence in Exposure Science and Environ. Health, Technion University, Haifa, Israel.
May 17, 2015	"Human Health Co-Benefits of Climate Change Mitigation Measures" in the Environment, Global Climate Change And Cardiopulmonary Health session of the American Thoracic Society (ATS) Annual Meeting in Denver, CO, USA.
Jan. 21, 2016	"Particle Air Pollution: Its Adverse Human Health Effects and Potential Climate Mitigation Health Co-Benefits". Imperial College. London, England.
Sep. 1, 2016	"Air Quality Health Co-benefits from Climate Change Mitigation Measures". 2016 Annual Meeting of the International Society for Environmental Epidemiology (ISEE). Rome, Italy.
Feb. 12, 2017	"Human Health Effects and Global Implications of Particle Air Pollution". MASDAR Institute. Abu Dhabi, United Arab Republic.
Apr. 22, 2017	"Clean Air Health Benefits from Climate Change Mitigation Action". Global Health & Innovation Conference. Yale University, New Haven, CT.

Scientific Meeting Sessions Chaired

May 1, 1996	"Epidemiological Findings", 2nd Colloquium on Particulate Air Pollution & Health. Park City, UT.
May 14, 1996	"Particulate Toxicity", American Thoracic Society Annual Meeting, New Orleans, LA.
Jan. 30, 1998	"Evaluation of PM Measurement Methods". $PM_{2.5}$: A Fine Particulate Standard Specialty Conference. Los Angeles, CA.
August 18, 1998	"Communities and Airports: How to Co-Exist?", Annual Meeting of the International Society for Environmental Epidemiology (ISEE). Boston, MA.
April 28, 1998	"Clean Air Act Update", American Thoracic Society Annual Meeting, Chicago, IL.
Oct. 21, 1998	"Health Effects and Regulatory Issues in PM", Particulate Methodology Workshop,. U.S. EPA Center, for Statistics and the Env., Univ. of Washington, Seattle, WA.
April 26, 1999	"Pulmonary Smoking and Air Pollution Epidemiology." American Thoracic Society Annual Meeting, San Diego, CA
Sept. 6, 1999	"Personal exposures to Gases and Particles", Annual Conference of the International Society for Environmental Epidemiology (ISEE), Athens, Greece.
March 31, 2000	"Epidemiology: Particles, Co-pollutants & Morbidity and Mortality", Workshop on Inhaled Environmental/Occupational Irritants and Allergens: Mechanisms of Cardiovascular Responses, American Thoracic Society, Scottsdale, AZ
Jan. 26, 2000	"Epidemiology of Particulate Matter Air Pollution", PM2000 Specialty Conference, Air & Waste Management Assoc., Charleston, SC
May 8, 2000	"Outdoor Air Pollution: Epidemiologic Studies", American Thoracic Society Annual Meeting, Toronto, Canada
Sept. 5, 2001	"Mortality Epidemiology Studies", Annual Meeting of the International Society for Environmental Epidemiology (ISEE). Garmisch, Germany.
May 20, 2002	"After September 11: Bio-terrorism and The Environmental Health Aftermath of The World Trade Center Disaster", Plenary Session. American Thoracic Society Annual Meeting, Atlanta, GA.

April 1, 2003	"Epidemiology: Short-Term and Long-Term Health Effects", Conference on Particulate Matter: Atmospheric Sciences, Exposure, and the Fourth Colloquium on PM and Human Health, Pittsburgh, PA
May 19, 2003	"Particulate Air Pollution and Diseases in Adults", American Thoracic Society Annual Meeting, Seattle, WA.
May 21, 2003	"Air Pollution as a Cause of Childhood Asthma and Chronic Airway Disease", American Thoracic Society Annual Meeting, Seattle, WA.
Sept. 2003	"Unexplained Medical Symptoms", Annual Meeting of the International Society for Environmental Epidemiology (ISEE). Perth, Australia.
Sept. 25, 2005	"Technology and Health", Annual Meeting of the International Society for Environmental Epidemiology (ISEE). Johannesburg, South Africa.
June 22, 2006	"Characteristics of PM and Related Considerations", Annual Meeting of the Air and Waste Management Association, New Orleans, LA.
Sept. 3, 2006	"Air Pollution Mechanisms", Annual Meeting of the International Society for Environmental Epidemiology (ISEE). Paris, France.
Sept. 20, 2006	"Linkage and Analysis of Air Quality and Health Data", EPA & CDC Symposium on Air Pollution Exposure and Health, RTP, NC
Sept. 5, 2007	"Radiation Exposures and Health Risks", 2007 Annual Meeting of the International Society for Environmental Epidemiology (ISEE). Mexico City, Mexico
Aug. 26, 2009	"Exploring the Range of Methodological Approaches Available for Environmental Epidemiology." 2009 Annual Meeting of the International Society for Environmental Epidemiology (ISEE). Dublin, Ireland
March 23, 2010	"Exposure to and Health Effects of Traffic Pollution", 2010 American Association for Aerosol Research Conference on Air Pollution and Health, San Diego, CA.
Sept. 16, 2011	"Susceptibility to Air Pollution", 2011 Annual Meeting of the International Society for Environmental Epidemiology (ISEE). Barcelona, Spain.
Aug. 27, 2012	"Source Apportionment Of Outdoor Air Pollution: Searching For Culprits". 2012 Annual Meeting of the International Society for Environmental Epidemiology (ISEE). Columbia, SC.
Aug. 21, 2013	"Source-specific health effects of air pollution". 2013 Annual Meeting of the International Society for Environmental Epidemiology (ISEE). Basel, Switzerland.
May 19, 2015	"Indoor and outdoor pollution: epidemiology and mechanisms". 2015 Annual Meeting of the American Thoracic Society (ATS). Denver, CO, USA.
Sep. 1, 2016	"Climate Change, Mitigation Measures and Co-Benefits". 2016 Annual Meeting of the International Society for Environmental Epidemiology (ISEE). Rome, Italy.

Bibliography

Invited Journal Editorials

Thurston GD and Bates DM. (2003). Air Pollution as an Underappreciated Cause of Asthma Symptoms, 2003. JAMA, 290:14, pp. 1915-1916.

Thurston G.D. (2006). Hospital admissions and fine particulate air pollution. JAMA. Oct 25; 296(16):1966.

Thurston G. (2007). Air pollution, human health, climate change and you. Thorax. 2007 Sep; 62 (9): 748-9.

Thurston GD, Balmes JR. (2012). Particulate matter and the environmental protection agency: setting the right standard. Environmental Health Policy Committee of the American Thoracic Society. Am J Respir Cell Mol Biol. Dec;47(6):727-8. doi: 10.1165/rcmb.2012-0414ED.

Thurston GD. (2013). Mitigation Policy: Health Co-Benefits. Nature Climate Change. Oct. (3) 863-864.

Thurston GD, Balmes JR. (2017). "We need to "Think Different" about PM. Am. J Resp. & Crit. Care Med. 2017 Jul 01; 196(1):6-7.

Book Chapters

Thurston, G.D. and Leber, M. The relationship between asthma and air pollution. In: *Emergency Asthma* (ed.: B. Brenner), pp. 127-144. Marcel-Dekker, New York, NY (1999).

Thurston, G.D. and Ito, K. Epidemiological studies of ozone exposure effects. In: *Air Pollution and Health* (ed.: S. Holgate and H. Koren). Academic Press. London. pp. 485-510 (1999).

Chen, LC, Thurston, G, and Schlesinger, RB. Acid Aerosols as a Health Hazard. In: *Air Pollution and Health* (ed.: J. Ayres, R. Maynard, and R. Richards). Air Pollution reviews: Vol. 3. Imperial College Press. London. pp. 111-161 (2006).

Thurston, G.D. and Wallace, L. Air Pollution: Outdoor and Indoor Sources. In: *Environmental and Occupational Medicine*, 4th Edition (Eds.: W. Rom and S. Markowitz). Lippincott, Williams, and Wilkins, Philadelphia (2006).

Thurston, G.D. Outdoor Air Pollution. In: *Encyclopedia of Public Health* (ed. K. Heggenhougen) Elsevier Press. (2008).

Thurston, G.D and Bell, M. Aerosols, global climate, and the human health co-benefits of climate change mitigation. In *Aerosol Handbook* (2nd edition) (eds.: Lev S. Ruzer and Naomi H. Harley). CRC Press (2012).

Thurston, G. and Bell, M. The Human Health Co-benefits of Air Quality Improvements Associated with Climate Change Mitigation. In. Global Climate Change and Public Health (eds. Kent E. Pinkerton and William N. Rom). Humana Press (2013).

Thurston, GD. Outdoor Air Pollution: Sources, Atmospheric Transport, and Human Health Effects. International Encyclopedia of Public Health, 2nd Edition (Editor-in-Chief: S.R. Quah). Academic Press (2016).

National Academy Committee Books Co-Authored

National Research Council (NRC), *Waste Incineration & Public Health.* Committee on Health Effects of Waste Incineration. Board on Environmental Studies and Toxicology. National Academy Press, Washington, DC (2000).

International Reports Co-Authored

Health Canada, *Health and Environmental Impact Assessment Panel Report*, "Joint Industry/Government Study: Sulfur in Gasoline and Diesel Fuels". Ottawa, Canada. (1997).

World Health Organization (WHO), *Exposure assessment in studies on the chronic effects of long-term exposure to air pollution.* Report EUR/03/5039759. Geneva, Switzerland (2003).

Peer Reviewed Journal Articles/Letters

Thurston, G.D. General Discussion: Atmospheric dispersion modeling - A critical review. J. Air Pollut. Control Assoc. 29: 939 (1979).

Thurston, G.D. Discussion of multivariate analysis of particulate sulfate and other air quality variables by principal components - part I. Annual data from Los Angeles and New York. Atmos. Environ. 15: 424-425 (1981).

Thurston, G.D., J.D. Spengler and P.J. Samson. An assessment of the relationship between regional pollution transport and trace elements using wind trajectory analysis. Receptor Models Applied to Contemporary Pollution Problems, Ed. E. Frederick, Air Pollution Control Association, Pittsburgh, PA (1982).

Spengler, J.D. and G.D. Thurston. Mass and elemental composition of fine and coarse particles in six U.S. cities. J. Air Poll. Control Assoc. 33: 1162-1171 (1983).

Currie, L., R. Gerlach, C. Lewis, W.D. Balfour, J. Cooper, S. Dattner, R. DeCesar, G. Gordon, S. Heisler, P. Hopke, J. Shah and G. Thurston. Inter-laboratory comparison of source apportionment procedures: Results for simulated data sets. Atmos. Environ. 18: 1517-1537 (1984).

Thurston, G.D. and J.D. Spengler. A quantitative assessment of source contributions to inhalable particulate matter in metropolitan Boston, Massachusetts. Atmos. Environ. 19: 9-25 (1985).

Thurston, G.D. and N.M. Laird. Letters: Tracing aerosol pollution. Science 227: 1406-1407 (1985).

Thurston, G.D. and J.D. Spengler. A multivariate assessment of meteorological influences on inhalable particle source impacts. J. Clim. and Appl. Met. 24: 1245-1256 (1985).

Ozkaynak, H., J.D. Spengler, A. Garsd and G.D. Thurston. Assessment of population health risks resulting from exposures to airborne particles. Aerosols: Second U.S.-Dutch International Symposium, Lewis Publishing Co., December 1985 (Peer Reviewed).

Ozkaynak, H., A.D. Schatz, G.D. Thurston, R.G. Isaacs and R.B. Husar. Relationships between aerosol extinction coefficients derived from airport visual range observations and alternative measures of airborne particle mass. J. Air Pollut. Control Assoc. 35: 1176-1185 (1985).

Thurston, G.D. and P.J. Lioy. Receptor modeling and aerosol transport. Atmos. Environ. 21: 687-698 (1987).

Ozkaynak, H., and G.D. Thurston. Associations between 1980 U.S. mortality rates and alternative measures of airborne particle concentration. Risk Analysis 7: 449-460 (1987).

Lioy, P.J., D. Spektor, G. Thurston, N. Bock, F. Speizer, C. Hayes and M. Lippmann. The design considerations for ozone and acid aerosol exposure and health investigation: The Fairview Lake Summer Camp-Photochemical Smog Case Study. Environ. Int'l. 13: 27-83 (1987).

Spektor, D.M., M. Lippmann, P.J. Lioy, G.D. Thurston, K. Citak, D.J. James, N. Bock, F.E. Speizer and C. Hayes. Effects of ambient ozone on respiratory function in active normal children. Am. Rev. Resp. Dis. 137: 313-320 (1988).

Lippmann, M. and G.D. Thurston. Exposure Assessment - Input into risk assessment. Arch. Environ. Health 43: 113-123 (1988).

Spektor, D.M., M. Lippmann, G.D. Thurston, P.J. Lioy, J. Stecko, G. O'Connor, E. Garshick, F.E. Speizer, and C. Hayes. Effects of ambient ozone on respiratory function in healthy adults exercising outdoors. Am. Rev. Resp. Dis. 138: 821-828 (1988).

Ito, K. and G.D. Thurston. Characterization and reconstruction of historical London England acidic aerosol concentrations. Environ. Health Presp. 79: 35-42 (1989).

Thurston, G.D., K. Ito, M. Lippmann, and C. Hayes. Re-examination of London mortality in relation to exposure to acidic aerosols during 1962-1973 winters. Environ. Health Persp. 79: 73-82 (1989).

Waldman, J.M., P.J. Lioy, G.D. Thurston and M. Lippmann. Spatial and temporal patterns in summertime sulfate aerosol acidity and neutralization within a metropolitan area. Atmos. Environ. 24B: 115-126 (1990).

Echalar, E., P. Artaxo and G.D. Thurston. Source apportionment of aerosols in the industrial area of Cubatao, Brazil. In: Aerosols: Science, Industry, Health and Environment (S. Masuda and K. Takahashi, Eds.), pp. 942-945, Pergamon Press (1990).

Spektor, D.M., V.A. Hofmeister, P. Artaxo, J. Brague, F. Echelar, D.P. Nogueria, C. Hayes, G.D. Thurston and M. Lippmann. Effects of heavy industrial pollution on respiratory function in the children of Cubatao, Brazil: A preliminary report. Environ. Health Persp. 94: 51-54 (1991).

Waldman, J.M., S.K.C. Liang, P.J. Lioy, G.D. Thurston, and M. Lippmann. Measurements of sulfate aerosol and its acidity in the SO_2 source region of Chestnut Ridge, PA. Atmos. Environ. 25A: 1327-1333 (1991).

Spektor, D.M., G.D. Thurston, J. Mao, D. He, C. Hayes, and M. Lippmann. Effects of single and multiday ozone exposures on respiratory function in active normal children. Environ. Res. 55: 107-122 (1991).

Thurston, G.D. and H. Ozkaynak. Letters: Air pollution and mortality. Science 225: 382-383 (1992).

Thurston, G.D., J.F. Gorczynski Jr., P. Jaques, J. Currie and D. He. An automated sequential sampling system for particulate acid aerosols: Description, characterization and field sampling results. J. Exposure Anal. Environ. Epidemiol. 2: 415-428 (1992).

Thurston, G.D., K. Ito, P. Kinney and M. Lippmann. A multi-year study of air pollution and respiratory hospital admissions in three New York State metropolitan areas: Results for 1988 and 1989 summers. J. Exposure Anal. and Environ. Epidemiol. 2: 429-450 (1992).

Jaques, P.A., G.D. Thurston, P.L. Kinney, and J.E. Gorczynski, Jr. Precision of an ambient sequential acid aerosol sampling system. Appl. Occup. Environ. Hyg. 8: 313-316 (1993).

Kinney, P.L. and G.D. Thurston. Field evaluation of instrument performance: Statistical considerations. Appl. Occup. Environ. Hyg. 8: 267-271 (1993).

Ito, K., G.D. Thurston, C. Hayes, and M. Lippmann. Associations of London, England daily mortality with particulate matter, sulfur dioxide, and acidic aerosol pollution. Arch. Environ. Health 48: 213-220 (1993).

Thurston, G.D., K. Ito, M. Lippmann and D.V. Bates. Respiratory hospital admissions and summertime haze air pollution in Toronto, Ontario: Consideration of the role of acid aerosols. Environ. Res. 65: 271-290 (1994).

Thurston, G.D., J.E. Gorczynski, J.H. Currie, D. He, K. Ito, M. Lippmann, J. Waldman and P. Lioy. The nature and origins of acid aerosol pollution measured in Metropolitan Toronto, Ontario. Environ. Res. 65:254-270 (1994).

Kinney, P.L., Ito, K., and Thurston, G.D. A sensitivity analysis of mortality/PM10 associations in Los Angeles. Inhal. Toxicol. 7:59-69 (1995).

Thurston, G.D. and Kinney, P.L. Air pollution epidemiology: Considerations in time-series modeling. Inhal. Toxicol. 7:71-83 (1995).

Ito, K., Kinney, P., Christie, E., and Thurston, G.D. Variations in PM10 concentrations within two metropolitan areas and their implications to health effects analyses. Inhal. Toxicol. 7:735-745 (1995).

Waldman, J. M., Koutrakis, P., Allen, G.A., Thurston, G.D., Burton, R.M., and Wilson, W.E. Human Exposures to Particle Strong Acidity. Inhal. Toxicol. 7:657-670 (1995).

Thurston, G. Measurement methods to determine compliance with ambient air quality standards for suspended particles: Discussant. J. Air & Waste Manage. Assoc. 45:667-668 (1995).

Kinney, P.L., Thurston, G.D., and Raizenne, M. (1996) The effects of ambient ozone on lung function in children: a reanalysis of six summer camp studies. Environ. Health Perspect. 104:170-174.

Thurston, G.D. A critical review of PM10-mortality time-series studies. J. Exposure Anal. and Environ. Epidemiol. 6:3-22 (1996).

Ozkaynak, H., Xue, J., Zhou, H., Spengler, J.D., and Thurston, G.D. Intercommunity Differences in Acid Aerosol (H^+)/Sulfate (SO_4^+) Ratios. J. Exposure Anal. and Environ. Epidemiol. 6:57-78 (1996).

Ito, K. and Thurston, G.D. Daily PM10/mortality associations: An investigation of at-risk subpopulations. J. Exposure Anal. and Environ. Epidemiol. 6:79-96 (1996).

Lippmann, M. and Thurston, G.D. Sulfate concentrations as an indicator of ambient particulate matter air pollution for health risk evaluations. J. Exposure Anal. and Environ. Epidemiol. 6:123-146 (1996).

Thurston, G. D., Lippmann, M., Scott, M.B., and; Fine, J.M. Summertime haze air pollution and children with asthma. Am. J. Respir. and Crit. Care Med. 155:654-660 (1997).

Thurston, G.D. Mandating the release of health research data: issues and implications. *Tulane Environmental Law Journal.* 11(2):331-354 (1998).

Thurston, G.D. The health benefits of the U.S. EPA clean air standards. *Pace Environmental Law Review*. 16:1 (1998)

Cassino, C., Ito, K., Bader, I., Ciotoli, C., Thurston, G., and Reibman, J. Cigarette smoking and ozone-associated emergency department use for asthma by adults in New York City. *Am. J. Respir. Crit. Care Med*.. 159:1773-1779 (1999).

Gwynn, R.C., Burnett, R.T., and Thurston, G.D. A time-series analysis of acidic particulate matter and daily mortality and morbidity in the Buffalo, New York, region. Environ. Health Perspect. 108(2):125-133 (2000).

Cifuentes, L., Borja-Aburto, V., Gouveia, N., Thurston, G., and Davis, D. Assessment of the urban air pollution benefits of global warming mitigation: Santiago, São Paulo, Mexico City, and New York City. Environ. Health Perspect. 109, Supplement 3:419-425 (2001).

Thurston, G.D. and Ito K. Epidemiological studies of acute ozone exposures and mortality. J. Expo. Anal. Environ. Epidemiol. 11(4):286-294 (2001).

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Ronald F. Turco Jr.

Curriculum Vitae

General Information *07/12/2015*

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Home Address	[redacted]
[redacted]	[redacted]

Education

Ph.D.	Washington State University (Soil Microbiology)	1985
B.S.	University of Idaho (Bacteriology)	1980
B.S.	University of Idaho (Soil Science)	1979

Professional Experience

2015-pres.	Assistant Dean, Agricultural and Environmental Research
2015-pres.	Director of the Global Sustainability Institute, Discovery Park
2011-pres.	Director of Purdue Water Community
2009-pres.	External Science Advisory Committee, UCLA Cnt. for the Environmental Implications of Nanotechnology
2002-pres.	Director, Indiana Water Resources Research Center
2008-2010	Graduate Program Chair, Agronomy
2000-2010	Assistant Director, Office of Agriculture Research Programs-Environment
2007-2009	College of Agriculture Strategic Planning Committee – Chair, Discovery Section
2010 to pres.	Chair, Purdue Water Community
2008 to 2010	Graduate Program Chair, Agronomy (50+ graduate students)
2007 to 2009	College of Agriculture Strategic Planning Committee – Chair, Discovery Section (worked with 300 faculty members)
2007 to 2009	Department Head Advisory Committee
2006 to 2010	Administrative Advisor to NC-1022 (Regional Committee)
2006 to 2009	Member Bioenergy Symposium Standing Committee

2005-present	Courtesy Appointment, Department of Food Science Purdue University
2004 to 2009	Director, Environmental Pathogens Information Network (EPI-Net)
2005 to 2011	Member, Executive Committee Purdue Climate Change Research Center (PCCRC); Chair, Director Search 2005-2006
2000 to 2010	Assistant Director, Office of Agriculture Research Programs (worked with numerous faculty groups)
2002 to present	Director, Indiana Water Resources Research Center (work with some 250 individuals in the State of Indiana)
1991 to 2002	Associate Director, Indiana Water Resources Research Center
1997 to 2004	Founding Director, Environmental Sciences, and Engineering Institute (ESEI) (90 faculty members)
1994 to present	Professor, Purdue University
1995 to 1996	Sabbatical Fellow DowElanco Environmental Chemistry Lab
1990 to 1994	Associate Professor, Dept. of Agronomy, Purdue University
1985 to 1990	Assistant Professor, Dept. of Agronomy, Purdue University
1980 to 1985	Graduate Researcher and Graduate Teaching Assistant, Department of Crops and Soils, Washington State University

Awards and Honors

Purdue University, Spirit of the Land Grant Award – 2013
Outstanding Achievement Award "Academic Sector" - Indiana Water Resources Research Association – 2011 (For work with IDNR on well water quality education)
Gamma Sigma Delta Agricultural Honor Society – 2005
Purdue University Provost Office "Acorn Award" (NIRT/Nanotech Project) – 2004
Purdue University College of Agriculture Team Award (Turfgrass Team) – 2004
Mid America CropLife Association Indiana's Water Guardian Award – 2003
William G. Wilber and John S. Zogorski Leadership Award, Indiana Water Resources Research Association – 2000
Education and Information Award Conservation Education; Soil and Water Conservation Society, Hoosier Chapter –1990
Sigma Xi –1987
Phi Sigma (Biological Honorary) – 1984

Professional Societies and Committees

American Chemical Society (2005 to 2010)
American Society for Microbiology (1986 to 2005)
Soil Science Society of America (1984 to present):
- ACS732 Program Planning Committee (2012-2015)
- Elected Board Rep -- S-3 Soil Microbiology and Biochemistry (2011-2014)
- Elected Chair, S-3 Soil Microbiology and Biochemistry (2007-2008)
- Chair, Clark Lectureship (1999 and 2009) and Member 2008, 2013
- Associate Editor Soil Science Society Journal 1991-1995
- Bioremediation symposium field tour 1996

Co-Editor of first SSSA Book on Bioremediation: Bioremediation Science and Application (1995)
Chair, Bioremediation Working Group 1993
Organizational committee/chair for SSSA bioremediation symposium 1993 and 1994
Indiana Water Resources Association (1987 – present, past President)
National Association of Water Institute Directors (1991 to present)
Council of Environmental Deans and Directors (2001 to 2004)

Member and past chair of:
W-82 Western regional Committee on Organics in Soil (1990 to present)
NCR-59 Committee on Soil Quality and Organic Matter (1985 to present)
NCT-167 Committee on the Midwest contribution Gulf of Mexico Hypoxia (1996 to 2000)
NCS-5 Special Committee for coordination of water quality research (1987 to 1996)

Administrative Experience, Responsibilities, and Accomplishments

2011 to Present
Director, Purdue Water Community
In January 2011, Purdue University officially established the Purdue Water Community (PWC) as the newest member of the Global Sustainability Initiative (GSI). The mission of the Purdue Water Community is to foster interdisciplinary water research and educational programs, via University-wide coordination of water research and educational activities, and creation of linkages with regional, national and global communities. The efforts that went into the grassroots development of the Water Community clearly demonstrate the caliber and unselfish attitudes of our exceptional group of faculty, students and staff. In establishing the Water Community, Purdue put an explanation point on our grassroots efforts to organize a University-wide program to coordinate water research, educational and outreach activities. Our timing and the opportunities could not be more significant as all reports indicate we are entering an era of world water scarcity. A great need for cutting-edge research on water issues exists. In order to insure a secure water future, we need to integrate our water research activities with the areas of food, climate, energy and environment. I am lucky enough to help lead the current effort because as group we are now poised to develop the means of improving both the quality and quantity of fresh water in order to achieve - Water for the Future.

2002 to Present
Director, Indiana Water Resources Research Center
As Director, I report to the Vice Provost for Research and to the USGS. The program is part of the National program of 54 centers supported with an annual competitive grant of approximately $90,000. From these funds, we run a competitive grants competition where we award funds to Indiana's water research community. To maintain this organization, I am working with Indiana's water research community, state and federal government, and citizen groups to assess how the water center can best serve their needs. We have formulated new external and internal advisory committees, added an external review committee, and are organizing a fall "Hoosier Water Summit". Our goal is to renew and invigorate the role we play in protecting the water resources of the state. In my role as IWRRC director, I have initiated the Wabash River Research Consortium. We have brought together The Nature Conservancy, many state agencies and a number of other Universities

to approach the research on the Wabash River as unit. As part of my role as Water Center Director, I have been working with the Purdue Water Community to develop an on-campus organization that meets the needs of the community in terms of research and educational opportunities. As direct responsibility as have chaired the "strategic planning" subcommittee and developed our 5 year plan.

2000 to 2010
Assistant Director, Agriculture Research Programs (ARP)-Environmental Programs
As the Assistant Director for Environmental Programs, I report directly to the Associate Dean and Director of ARP. My roles are to manage our research effort in carbon sequestration, animal waste issues for our farm operations, and to provide input to the ARP Director on environmental and environmental/biosecurity topics. Examples of significant accomplishments include:

- Bioenergy Program: As part of my ARP appointment, I worked with staff and faculty to create an organized program addressing bioenergy. In particular, I worked to create a program addressing the ancillary impacts of biofuel production on soil and water resources. I was also involved in the organization of the Lugar bioenergy symposium.

- Improving Dairy Waste Management: Following a severe weather related spill of manure at the Purdue dairy farm, I was asked to chair a committee to develop recommendations to improve Dairy Waste Management that would put the facility into better compliance at the state and federal level. This charge resulted in a highly detailed project that drew on the expertise of many staff and faculty. The Animal Manure Management Committee (AMAC) was formed and made a series of recommendations and developed an internal request for project funding. As a result, an internal proposal for $900,000 to improve the waste management at the animal science farm was funded. We also raised the general awareness of the need for better waste handling approaches and planning. Working with the AMAC group, I was responsible for implementation of the project and reporting to the Dean on expenditures. We conducted a needs assessment and implemented a series of changes and management strategies resulting in better water and waste handling at the farm. These changes included construction of a new storage system, installing a farm wide interconnection system to manage wastewater, improved solid liquid separation capabilities and improved land application methods. We also developed a plan to use the waste to create energy and offset power demands.

- Strategic Planning for an individual NPDES permit: Our animal science farm is large enough to require federal permitting. I chair the AMAC committee that is assembling a federal permitting request. This a particularly difficult situation as we have multiple animal species on the same property, have both research and production needs and we want to provide an approach that can serve the animal producers of the state and region as an operational model. Our committee has hosted an internal workshop and an information gathering session with faculty, leading to a long-term plan for the facility.

- Other Animal Projects: Due to a series of overlapping events, the AMAC committee became involved with the development of a new facility at the animal science farm. The AMAC committee, working with faculty from Purdue University and Indiana University School of Medicine to help to develop a state-of-the-art animal care facility as part of a program in

Comparative Medicine. The AMAC group is responsible for site management (site development and construction planning), and waste permitting for the facility that holds a unique colony of Ossabaw research pigs (~500 animals). The pigs originated on Ossabaw Island off the coast of Georgia. The Ossabaw colony provides a significant new capability for conducting diabetes research as well as preserving this unique animal. The secondary objective of the project was to develop this as a major NIH facility.

- Food Safety and Security. The ARP office has taken leadership in developing a response to a number of issues in food security and prevention and detection of bioterrorism. We organized and hosted a one-day workshop on food and crop security. This workshop led to collaboration with the Purdue Homeland Security Institute and the development of a number of proposals.

2005-2009
Lead PI: Environmental Pathogens Information Network. (EPI-net.org)
Conferences Organized:

Water-Borne Pathogens Symposium San Antonio, TX February 6, 2006. – 7 speakers and 100 participants.
Microbial Source Tracking Workshop, Indianapolis, IN July 28, 2006 – 4 speakers and 30 participants
E. coli At the Beach Workshop, Merrillville, IN February 2, 2006 – 6 speakers and 32 participants.
Detecting Microbial Contamination in Water and Soil Savannah, GA January 30, 2007 –4 speakers and 50 participants.
Microbial Source Tracking, Chicago, IL September 14, 2007 -- 6 speakers 60 participants
Use of Indicators for Monitoring Microbial Water Quality: A Hands on Experience - April 11, 2008 Columbus, OH -6 speakers and 30 participants
Cyanobacteria and Water Quality, February, 2008, Sparks, NV, 6 speakers and 50 participants
Protozoan Water Pathogens: Cryptosporidium and Giardia. - February 9, 2009 St. Louis, MO 4 speakers and 50 participants
Use of Indicators for Monitoring Water Quality: Hands on Workshop May 6-7, 2009 Columbus, OH 4 speakers and 25 participants

2004 to 2009
Lead PI: Purdue University NIRT Project: Response of aquatic and terrestrial microorganisms to carbon-based manufactured nanoparticles. This was a six-investigator project supported by NSF and EPA under "NIRT: Nanoscale Interdisciplinary Research Team". I was instrumental in developing the original hypothesis, research approach, preliminary data set and once funded, in managing the group. The project was one of the first to look at what happens to nanomaterials (C60, nC60 and Carbon Nano Tubes) in environmental systems. To date the project has resulted in a number of key publications including the first papers on: the fate of manufactured nanomaterials in soil: on fate of nanomaterials in biosolids and the first paper to show biological/environmental alterations of introduced manufactured nanomaterials is possible. As part of the project, Natalie Carroll and I organized "Nanotechnology in the Environment" – 2-day conference on Nanotechnology in the environment. Indianapolis IN.

1997 to 2004
Founding Director of the Environmental Sciences and Engineering Institute (ESEI)
ESEI's mission: To promote the development of science and engineering required for sustainable utilization of natural resources and improvement of environmental quality.

After a national search, I was hired as the founding director of ESEI. I reported to the Vice Provost for Research and the Deans of Science, Engineering, and Agriculture. I established ESEI as a functional operation, serving as a central access point on the Purdue campus for the broad range of environmental expertise at Purdue University. We also assisted faculty with the development, promotion, and support of interdisciplinary environmental programs. The Institute was established during a time in Purdue history when collaborative efforts were difficult to accomplish and many roadblocks had to be overcome. Over the seven years I was director we intensified the interconnectedness across campus; we emphasized an interdisciplinary systems approach to developing large proposals and assisted in the formation of two Centers: Purdue Climate Change Research Center (PCCRC) and Purdue Interdisciplinary Center for Ecological Sustainability (PICES). Through our efforts, PCCRC received broad support and was established as a key hiring area by the Colleges of Science and Agriculture. Over the years, PCCRC hired five faculty members.

ESEI worked with a limited budget; ~$175,000 per year, which included one-half of my salary, and the salary for administrative assistant and secretary plus approximately $20,000 to $30,000 in operational dollars. These dollars were used to support faculty travel, equipment cost share, workshops, summer salary for faculty and office needs. A key role of ESEI was to serve as a focal point for proposal development offering leadership to some 90-faculty members; over its lifetime, ESEI produced almost a 7 to 1 return in outside dollars to the dollars invested by the University. Examples of significant accomplishments include:

- New Centers of Excellence: ESEI provided administrative leadership in the creation of new environmental Centers. The environmental centers effort brought together faculty from three Colleges and eight different departments. In the case of the PCCRC, we have leveraged this unit into a number of new and anticipated hires.

- Federal Relations: As ESEI director I worked directly with congressional staff, consultants, and Purdue officials to secure approximately $3.5M in directed funding (over five years) for projects addressing environmental contamination, control of odors, animal waste issues (management approaches and fate of applied microorganisms), and most recently production of biofuel (CH_4) from waste materials. Many of these project dollars served as significant seed funds allowing for further project development. These included grants from USDA for soil carbon work, but most notable was Dr. Al Heber's air quality grant from EPA.

- Interdisciplinary research projects: Our approach to creating proposals that integrate across research disciplinary areas was shown to be successful. These efforts originate from the earliest days of ESEI when we developed a successful watershed project to address sources of *E. coli*. We also managed a number of incubator projects. I feel the ability to invest in an idea is a key function of an interdisciplinary research program director such as the ARP position. One of our most successful management efforts was in the new area concerning the environmental fate of manufactured nano-materials. ESEI provided the support to travel to a

number of meetings and developed first proposals that resulted in some $2 million of total funding. More importantly, this effort propelled the environmental fate of nanomaterials as a new program area at Purdue University with a number of new proposals currently in development.

Professional Development

State Experiment Station New Directors' Workshop, Couer D'alene Idaho
University Administrators Workshop, University of Nebraska, Lincoln, Nebraska
Krannert School of Management Purdue University, Engineering-Management (E/M), summer program allowing working scientist to gain business understanding.
Management Training, Workshop on management skills and interacting with difficult people. Lafayette, Indiana

Service

2009 to present	Member External Science Advisory Committee, The University of California Center for the Environmental Implications of Nanotechnology
2009 to 2010	Co-Organizer Purdue Water Community / leading the Strategic Planning Process for the group of 70 faculty members
2007 to 2009	Chair, College of Agriculture Strategic Planning Committee – Discovery Section
2004 to 2008	Member, Midwest NEON/GLACEO Committee
2004 to 2008	Member, Indiana food security task force
2003 to 2004	Member Organizational Committee, CASMGS regional Symposium Committee, December 2004 Indianapolis, IN
2002 to 2004	Member, Indiana Department of Environmental Management Indiana Triennial Review, TMDL General Task Force and the *E. coli* working group. 2003
2002 to 2005	Director, Purdue's Consortium of Agricultural Soils Mitigation of Greenhouse Gases (CASMGS) program and National Co-Chair for Task 1 (Basic research)
1997 to 2002	Board of Directors, Indiana Plant Food and Agricultural Chemical Association
1995 to 1996	President, Indiana Water Resources Association
1993 to 1994	Chair, Bioremediation Working Group of Soil Science Society

Editorships

1994 to present	Associate Editor, Critical Reviews in Environmental Science and Technology
1998 to 2002	Associate Editor, Water, Air, Soil Pollution
1991 to 1995	Associate Editor for Soil Science Society of America Journal
1990 to 1995	Reviewer, Weed Science Journal

Review Panels

USDA AFRI Review panel: Water and Watersheds (2013)
NSF Nano Materials review (2010, 2012, and 2013)
USDA AFRI Review panel: Nanomaterials (2013)

USDA AFRI Review panel: Organic Agriculture and Water Quality (2009)
EPA STAR Review panel Graduate Fellowships (2008)
External review Nanotechnology Program US EPA Corvallis, Oregon (2007)
DOE E2 - Subsurface Microbial Ecology (2006)
USDA-NRI Water and Watersheds (2006)
EPA STAR Review panel: Nanotechnology (2005, 2006)
NSF-NanoScience Site Review for Center for Biological Environmental Nanotechonlgy (CBEN), Rice University (2004, 2005, 2006)
USGS 104G Program, panel member (2003)
Purdue University, Agriculture Research Programs New Faculty Grant Program (2003)
Purdue University, Agriculture Research Programs selection committee for Purdue Research Foundation grant applications (2001, 2002, 2003, 2007)
USDA-NRI Nutrient Sciences Review Panel, *Panel Manager* (2002)
Member Review Team USDA Weeds Laboratory Review, University of Illinois (2001)
NSF/USDA Water and Watersheds Program, panel member (1998)
Member, On-site Review Team USDA NCSCRL, Morris MN (1998)
NRI, Soils and Soil Biology, *Panel Manager* (1996-1997; $\$2x10^6$ program)
NSF-EPA-ONR Superfund/Bioremediation program, panel member
EPA/DOE joint program on Bioremediation, panel member
NRI - Soils and Soil Biology, panel member (2 times)
USDA-WQ Special Grants, panel member
USDOE - Subsurface program, panel member
University of Arizona USEPA Superfund program internal review
Experimental Program to Stimulate Competitive Research (EPSCoR) - EPA
Indiana 319 grants program, panel member
Indiana Water Resources program, panel member and program coordinator

Committees (University, College and Departmental)

Member, search committee EEE (Water Engineering Position)
Member, search committee Agronomy (Turfgrass Extension Position hired Aaron Patton)
Member, search committee Forestry and Natural Resources (2007 hired Shannon Amberg)
Member and Chair of the Discovery section of College of Agriculture Strategic Planning committee (2008)
Member of the Bioenergy Symposium Planning Committee (2008)
Member, Organizational Committee Lugar-Purdue Energy Summit (Fall 2006)
Chair, College of Agriculture Animal-waste Management Advisory Committee (AMAC, 2004 – present)
Member of Director search committee PCCRC (2004 – 2006)
Member, Search committee Ecology FNR (2005-2006, hired Joe Fargione)
Chair, ESEI Seminar Series 2003 -2004
Member, Sponsored Program Development working committee (1998 – 2004)
Member, search committee ESEI, College of Agriculture and Science, Regional Climate Modeler, and State Climatologist (2003 – 2004, hired Dev Niogi)
Chair, search committee ESEI: Watershed Hydrologist (2003, hired Laura Bowling)

Member, search committee Earth and Atmospheric Sciences: Biogeochemistry (2001, hired Tim Filley)
Member, search committee Civil Engineering: Reith-Chair Environ. Engineering (2001, hired Suresh Rao)
Chair, search committee Agronomy: Soil Molecular Biology Position (hired Cindy Nakatsu)
Member, search committee Agronomy: Turfgrass Extension Position (hired Zac Reicher)
Chair, search committee Agronomy: Soil Organic Chemistry Position (hired Linda Lee)
Member, search committee Agronomy: Environmental Soil Science (hired Brad Joern)
Member and chair, Monsanto Lecture Series (1999 and 2000)
Member, Ag-School focus group on Research (1999)
Member (elected) area promotion committee (1996 and 1997)

Consulting

Pesticide fates work; Benelate in soil and plant rhizosphere
Soil Contamination from subsurface practices
Brominated organic materials in landfills
Bioremediation of oil/gasoline contaminated soils
Sludge application practices, fates of metals and organics
Biogas (CH_4) production in landfills/composting
Metals in landfill leachate
Soil inoculation for bioremediation
Composting Sludge

Teaching Experience (Graduate and Undergraduate)

AGRY 349 – ***Soil Ecology*** This 3 credit lecture/lab class covers the fundamentals of life in soil and includes a hands-on laboratory portion that reinforces lecture concepts. It is intended for undergraduates.

AGRY 580 – ***Soil Microbiology*** *-- Spring of even years.* This 3 credit course is my core class and is taught every other spring semester (even years). The class emphasizes the microbiological components of soil as related to agriculture and environmental processes.

AGRY 582 – ***Environmental Fates of Pesticides*** *-- Spring of odd years.* This three-credit class covers the basic fates of agricultural chemicals in the environment. The new name, ***Biodegradation and Bioremediation (B&B)*** and is a revision of my existing class and emphasizes the commonalties in organic degradation pathways and how to apply these principals in environmental cleanup.

AGRY 598f – ***Remediation of Contaminated Soils and Groundwater.*** This is a 3 credit team-taught class that covered social, political, and scientific aspects of the remediation of contaminated sites. This class was an outgrowth of efforts within ESEI. (2000 and 2001)

ARRY 598g – ***Advanced Soil Microbiology: Bioremediation*** (with John Graveel, Agronomy) was taught two times and covered the theoretical and practical aspects of bioremediation. (1998 and 1999)

AGRY 598w – ***Constructed Wetlands***, was taught one time with Jon Harbor, Earth & Atmospheric Sciences, and emphasized the use of wetlands as remediation tools. (1997)

Graduate Students

Graduate students, who have completed their degree objectives, (there present location) or are presently under the direction of Dr. Turco included:

Donald Breakwell, M.S. December 1988. Role of microorganisms in nutrient cycling in no-till corn soil & Ph. D. 1992. Isolation and characterization of bacteria responsible of enhanced degradation of carbofuran. (Faculty BYU)

Rena Sheldon, M.S. December 1989. Nitrogen mineralization from selected plant parts (co-chair with K. Johnson) (Extension Agent – Morgan County IN)

Curtis Dell, M.S. August 1990. Fate of pesticides in the turf environment. (USDA-ARS State College PA)

Robert Rhykerd, M.S. December 1991. Soil properties affecting the environmental fate of atrazine. (Faculty Illinois State University)

Anne Hiar, M.S. December 1992. Water quality in the suburban environment. (Secondary Education, Washington State.)

Jussara Regitano, Ph.D. December 1993. The role of sorption in preventing the degradation organic chemicals added to soil. (Faculty, Laboratório de Ecotoxicologia, Centro de Energia Nuclear na Agricultura, Universidade de São Paulo, Brazil)

Rita Patel, M.S. August 1993. Controlling the release rates of nitrogen from high nitrogen sludge materials (co-chair with B. Joern). (Environmental Consultant, MA)

Elena Blume, Ph.D. August 1995. The role of microorganism in defining a soils assimilative capacity. (Faculty, Federal University of Santa Maria, Santa Maria Brazil)

Erica Frederick, M.S. August 1994. The environmental fate of fungicides in the turf environment. (co-chair with C. Throssell).(Environmental Consulting, Indianapolis IN)

Catherine Taylor (Pitts), M.S. August 1996. Fate of fungicides in the turfgrass environment.

Lesley Oliver, M.S. August 1996. Graywater bioreactor perturbations with hypochlorite. (Assistant Director, Agricultural Experiment Station University of Kentucky)

Brandon Grigg, Ph.D. August 1997. Atrazine degradation in soils contaminated at high levels. (Rancher, Arkansas)

Veronica Acosta-Martinez, M.S. May 1998. The role of tree leaf mulch and nitrogen fertilizer on turfgrass soil quality. (USDA- ARS, Wind Erosion and Water Conservation Research, Lubbock, TX)

W. Von Sigler, Ph.D. May 2000. Microbial ecology of turfgrass. (Faculty, University of Toledo, Toledo OH)

Ivan Edwards, Ph.D. December 2004. A molecular genetic analysis of the response of Basidiomycete communities associated with loblolly pine (*Pinus Taeda* L.) to improved N availability. (Post-Doc, University of Michigan)

Matt Ruark, Ph.D. December 2006. Carbon transport from managed ecosystems. (co-chair with S. Brouder) (Faculty, Michigan State University)

Victoria Waranoski. MS. December 2007. Environmental fate of human pathogens. (CM2 Hill, Environmental Consultant)

Zhong-Hua Tong, Ph.D. December 2008. Environmental fate of manufactured nano-particles. (Department of Chemistry, University of Science & Technology of China, Hefei, Anhui China)

Erika Espinosa, MS. June 2010. Nanometals in soil. (PhD, Germany)

Mary-Jane Orr, January 2013. Ph.D. Impact of biofuel production on soil sustainability.

Amanda Storm, 2013 MS. Soil ecology of of *Mycobacterium avium* subsp *paratuberculosis.*

Francy Helena Avila Arias, 2016 Ph.D. Nanomaterials (metals) in soil

Dr. Turco has or is serving graduate advisory committees for the following students:
(§ Indicates the student has graduated)

Name	Degree	Department/School
P. Berry	M.S.	Agronomy§
W. Buhler	Ph.D.	Entomology§
C. Creamer	Ph.D.	Earth and Atmospheric Sci.
J. Dickey	Ph.D.	Agronomy§
B. Doerr	M.S.	Geosciences§
R. Durieux	M.S.	Agronomy§
M. Ebinger	Ph.D	Agronomy§
J. Foltz	Ph.D.	Ag. Economics§
A. Gillespie	Ph.D	Forestry§
M. Herring	M.S	Agronomy§
J. Phillips	M.S.	Agronomy§
R. Reinsvold	Ph.D	Forestry§
K. Robbeloth	M.S.	Agronomy§
C. Voglewede	M.S.	Entomology§
D. Villarreal	Ph.D	Biologic Sciences§
B. Cooper	Ph.D.	Geosciences§
N. Akhouri	Ph.D.	Agronomy§
S. France	M.S.	Agronomy§
B. Jenkinson	M.S.	Agronomy§
M. Mahaman	Ph.D.	Agronomy§
Z. Reicher	Ph.D.	Agronomy§
G. Vail	Ph.D.	Botany and Plant Pathology§
D. Bulinski	M.S.	Agronomy§
A. Heldt	M.S.	Agronomy§
H. Li	Ph.D.	Agronomy§
Y. Seol	Ph.D.	Agronomy§
B. Jenkinson	Ph.D.	Agronomy§
G. Gavilan	Ph.D.	Civil Engineering§
A. Frisbibe	Ph.D.	Civil Engineering§
S. Green	Ph.D.	Agronomy§
R. Ridgway	Ph.D.	Civil Engineering§
J. Joynt	M.S.	Agronomy§
C. Aquire	Ph.D.	Ag. Biological Engineering§
J. Leng	Ph.D.	Civil Engineering§
G. Von Kiparsk	Ph.D.	Forestry§
J. Cripliver	M.S.	Forestry§
L. Hahn	M.S.	Ag. Bio. Engineering
M. Jackson	M.S.	Agronomy§
J. Yoon	Ph.D.	Food Science§
L. Nyberg	Ph.D.	Civil Engineering
T. Taliaferro	Ph.D.	Food Science§

L. Farris	Ph.D.	Food Science[§]
D. Auleung	Ph D.	Forestry and Natural Resources
A. Baumgart-Getz	Ph D.	Forestry and Natural Resources[§]
K. Dasu	Ph D.	Agronomy[§]
A. Deering	Ph D.	Botany and Plant Pathology[§]
W.-C. Hou	Ph.D.	Civil Engineering
B. Khan	Ph D.	Agronomy[§]
G. Laban	Ph.D	Forestry and Natural Resources[§]
L. Royer	Ph.D.	Agronomy[§]
J. Kosiorowska	MS	Agronomy
Y. Ma	Ph.D.	Earth and Atmospheric Sci.
M. Mashtare	Ph.D.	Agronomy
P. Myer	Ph.D.	Food Science
J. Roskamp	M.S	Botany Plant Path
M. Rudisill	Ph.D.	Hort
E. Willson	M.S	Agronomy

Post-Docs

Dr. Nassar Assaf, 1995 –1996. Herbicide degradation and fate of chemicals in the environment. (Research Director, Valent Chemicals Chicago IL)

Dr. Blake Onken, 1997. Herbicide fate in soils. (Running soil test laboratory in New Mexico)

Dr. Wei Shi, 2002–2003. Metal – Microbiology interactions. (Faculty, North Carolina State University)

Dr. Mussie Y. Habteselassie, 2005-2007. Human pathogens in the environment. (Faculty University of Georgia)

Dr. Pauline P Nhamo, 2010 to 2012. Implication of biofuel production on N and C cycling in soil.

Dr. Mary Jane Orr, 2013. Soil carbon and nitrogen dynamics.

Dr. Andrea Clavijo, 2013. Microbial pathogen ecology on artificial surfaces.

Research Publications

(Peer Reviewed, Journal Articles & Book Chapters)

1. Turco, R.F., T.B. Moorman, and D.F. Bezdicek. 1986. Effectiveness and competitiveness of spontaneous antibiotic-resistant mutants of *Rhizobium leguminosarum* and *Rhizobium japonicum*. Soil Biology and Biochemistry. 18:259-262.
2. Turco, R.F. and D.F. Bezdicek. 1987. Diversity within two serogroups of *Rhizobium leguminosarum* native to soils in the Palouse of Eastern Washington. Annals of Applied Biology. 111:103-114.
3. Smith, S.C., D.F. Bezdicek, and R.F. Turco, and H.H. Cheng. 1987. Seasonal N_2 fixation by cool season pulses based on several ^{15}N methods. Plant and Soil. 97:3-13.
4. Konopka, A., D. Knight, and R.F. Turco. 1989. Characterization of a *Pseudomonas* sp. capable of aniline degradation in the presence of secondary carbon sources. Applied Environmental Microbiology. 55:385-389.
5. Breakwell, D.P. and R.F. Turco. 1989. Nutrient and phytotoxic contributions of residue to soil in no-till continuous corn ecosystems. Biology and Fertility of Soils. 8:328-334.
6. Turco, R.F. and A. Konopka. 1990. Biodegradation of carbofuran in enhanced and non-enhanced soils. Soil Biology and Biochemistry. 22:195-201.

7. Turco, R.F., M. Bischoff, D.P. Breakwell, and D.R. Griffith. 1990. Contribution of soil bore microorganisms to the rotation effect in corn. Plant and Soil. 122:115-120.
8. Bolton, H., L.F. Elliot, R.F. Turco, and A.C. Kennedy. 1990. Pea seedling rhizosphere colonization of *Rhizobium legumonsarium* and a deleterious root colonizing *Pseudomonas* and effects on plant growth. Plant and Soil 123:121-124.
9. Turco, R.F. and A. E. Konopka. 1990. Response of microbial populations to carbofuran in soils enhanced for its degradation p. 152-166. *In* R. D. Racke and J. R. Coats (eds.) Enhanced Biodegradation of Pesticides in the Environment. ACS Symposium Series 426.
10. Barry, P., D. Stott, J.M. Bradford, and R.F. Turco. 1991. Organic polymers effect on shear strength and detachment by single raindrops. Soil Science Society of America Journal. 55:799-804.
11. Konopka, A. and R.F. Turco. 1991. Biodegradation of organic compounds in vadose zone and aquifer sediments. Applied and Environmental Microbiology. 57:2260-2268.
12. Villarreal, D., R.F. Turco, and A. Konopka. 1991. Propachlor degradation by a soil bacterial community. Applied and Environmental Microbiology. 57:2135-2140.
13. Buhler, W.G., A.C. York, and R.F. Turco. 1992. Effect of enhanced biodegradation of Carbofuran on the control of striped cucumber beetle (*Coleoptera: Chrysomelidae*) on muskmelon. Journal of Economic Entomology. 85:1910-1918.
14. Rounds, M., S. Nielsen, R. Turco and B. Liska. 1992. Comparison of test methods for the determination of nitrates in well water. Dairy, Food and Environmental Sanitation, April, 214-215.
15. Dell, C.J., C.S. Throssell, M. Bischoff, and R.F. Turco. 1994. Estimation of sorption coefficients for fungicides in soil and turfgrass. Journal Environmental Quality 23:92-96.
16. Assaf, N.A. and R.F. Turco. 1994. Influence of carbon and nitrogen application on atrazine degradation in soil. Pesticide Science 41:41-47.
17. Assaf, N.A. and R.F. Turco. 1994. Accelerated biodegradation of atrazine by an isolated microbial consortium is possible in culture and soil. Biodegradation 5:29-35.
18. Frederick, E.K, M. Bischoff, C.S. Throssell, and R.F. Turco. 1994. Degradation of Chloroneb, Triadimefon, and Vinclozolin in soil, thatch, and grass clippings. Bulletin of Environmental Contamination 53:536-542.
19. Turco, R.F. 1994. Detection and enumeration of coliform bacteria in soil. pp. 145-159. *In* R. Weaver et al. (ed.) Methods of soil analysis: Microbial and biochemical properties. Soil Science Society America. Madison, WI.
20. Turco, R.F. and E.J. Kladivko. 1994. Studies on Pesticide Mobility: Laboratory vs. Field. *In* The mechanisms of movement of pesticides in to the ground water. CRC Books. Boca Raton, Fla.
21. Sims, G.K., D.D. Buhler and R.F. Turco. 1994. Residue management impact on the environment. P. 77-98. *In* P. W. Unger (ed.) Managing Agricultural Residues. Lewis Publishers, Ann Arbor, MI.
22. Turco, R.F., A.C. Kennedy, and M.D. Jawson. 1994. Microbial Indicators of Soil Quality. p 73-90. In. J. Doran et al (ed.) Defining Soil Quality for a sustainable environment. Soil Science Society of America. Madison, WI.
23. Suzudogru, S., R.F. Turco, and S. Usta. 1994. .Adsorption of atrazine and imazaquin (herbicides) by humic acid and humin + mineral fractions extracted from two different soils. Ankara Universitesi Ziraat Fakultesi Yllg 44: 141-150. (in Turkish)

24. Elliott, E.T., K. Paustian, H.P. Collins, E.A. Paul, C.V. Cole, I.C. Burke, R.L. Blevins, D.J. Lyon, W.W. Frye, A.D. Halvorson, D.R. Huggins, R.F. Turco, M. Hickman, C.A. Monz, and S.D. Frey. 1994. Terrestrial carbon pools and dynamics within a site network: preliminary data from the cornbelt and great plains regions. In Doran, Coleman, Bezdicek. (eds.) Defining soil quality for a sustainable environment. SSSA Special publication No. 35. pp. 179-191
25. Cambardella, C.A. T.B. Moorman, J.M. Novak, T.B. Parkin, D.L. Karlen, R.F. Turco, and A.E. Konopka. 1994. Field-scale variability of biological, chemical and physical soil properties in central Iowa soils. Soil Science Society of America Journal. 58:1501-1511.
26. Villarreal, D. T., R.F. Turco, and A. Konopka. 1994. A structure activity study with Aryl Acylamidases. Applied and Environmental Microbiology. 60:3939-3944.
27. Turco, R.F. and M.J. Sadowsky. 1995. The Microflora of bioremediation p.87-103. *In* H.D. Skipper and R.F. Turco (eds). Soil Science Society of America Special Publication 43. Madison WI.
28. Frederick, E.K., C.S. Throssell, M. Bischoff and R.F. Turco. 1996. The fate of vincolozolin in creeping bentgrass turf under two application frequencies. Bulletin of Environmental Contamination and Toxicology. 57:391-398
29. Konopka, A., T. Zakharova, L. Oliver, and R.F. Turco. 1996. Biodegradation of organic wastes containing surfactants in a biomass recycle reactor. Applied and Environmental Microbiology. 62:3229-3297.
30. Skipper, H.D., A.G. Wollum, R.F. Turco, and D. Wolf. 1996. Microbial aspects of environmental fate studies of pesticides. Weed Technology. 10:174-190.
31. Dick, R.P, D.P. Breakwell, and R.F. Turco. 1997. Chapter 15. Soil enzyme activities and biodiversity measurements as integrative microbiological indicators. *In* J. Doran et al., (eds.) Handbook of methods for assessing soil quality. ASA Special Publication. Madison WI.
32. Bischoff, M., A. Hiar and R.F. Turco. 1997. Evaluation of nitrate analysis using test strips: Comparison with two analytical laboratory methods. Communications in Soil Science and Plant Analysis. 27:2765-2775.
33. Regitano, J.B., M. Bischoff, J.M. Reichert, L.S. Lee, and R.F. Turco. 1997. Retention of Imazaquin in soil. Environmental Toxicology and Chemistry. 16:397-404
34. Konopka, A., T. Zakharova, L. Oliver, and R.F. Turco. 1997. Microbial biodegradation of organic wastes containing surfactants in a continuous-flow reactor. Journal of Industrial Microbiology and Biotechnology. 18:235-240
35. Grigg, B., C. M. Bischoff and R.F. Turco. 1997. Co-contaminant effects on degradation of triazine herbicides by a mixed microbial culture. Journal of Agriculture Food Chemistry. 45:995-1000.
36. Grigg, B.C., N. Assaf and R.F. Turco. 1997. Removal of atrazine contamination in soil and liquid systems using bioaugmentation. Pesticide Science 50:211-220.
37. Akhouri, N.M. E.J. Kladivko, and R.F. Turco. 1997. Sorption and degradation of atrazine in middens formed by *Lumbricus Terrestris*. Soil Biology Biochemistry. 29:663-666.
38. Konopka A., T. Zakharova, L. Oliver, E. Paseuth, and R.F. Turco. 1998. Physiological state of a microbial community in a biomass recycle reactor. Journal of Industrial Microbiology & Biotechnology. 20:232-237.
39. Konopka, A, L. Oliver, and R.F. Turco. 1998. The use of carbon substrate utilization patterns in environmental and ecological microbiology. Microbial Ecology 35:103-115.

40. Turco, R.F. 1999. Soil Microorganism and Their Requirements. *In* Bioremediation. W. Frankenberger et al., (eds). ASA Monograph 37. Madison, WI.
41. Sadowsky, M. J. and R.F. Turco 1999. Bioaugmentation Systems. *In* Bioremediation of Contaminated Soils. W. Frankenberger et al., (eds). ASA Monograph 37. Madison, WI.
42. Acosta-Martinez, V., Z. Reicher, M. Bischoff, and R. F. Turco. 1999. The role of tree leaf mulch and nitrogen fertilizer on turfgrass soil quality. Biology and Fertility of Soils. 29:55-61.
43. Konopka A., T. Zakharova, M. Bischoff, L. Oliver, C.H. Nakatsu and R.F Turco. 1999. Microbial biomass and activity in lead contaminated soil. Applied and Environmental Microbiology. 65:2256-2259.
44. Kladivko, E.J., J. Grochulska, R.F. Turco, G.E. VanScoyoc, and J.D. Eigel. 1999. Pesticide and nitrate transport into subsurface tile drains of different spacing. Journal of Environmental Quality. 28:997-1004.
45. Sigler, W.V. C. P Taylor, C. Throssell, M. Bischoff and R. Turco. 2000. Environmental fates of fungicides in the turfgrass environment: A mini-review. Fate and Management of Turfgrass Chemicals ACS symposium book 734. J. Marshall Clark and Michael Kenna (ed).
46. Oliver, L., T. Zakharova, A. Konopka and R. Turco. 2000. Sodium hypochlorite perturbation of a graywater treatment system. Journal of Industrial Microbiology and Biotechnology. 24:191-197.
47. Sigler W., C. Nakatsu, Z. Reicher, and R.Turco.2001. Fate of the biocontrol agent *Psedumonas aureofacines* TX-1 after application to turfgrass. Applied and Environmental Microbiology. 62: 3542-3548.
48. DeBroka, K., J. Frankenberger, J. Harbor, L. Patterson, D. Frasier, R. Turco, G. Thomas, C. Nakatsu, S. Brouder, and A. Bhunia, 2001. GIS and streamflow analysis to support *E. coli* source identification. *ASAE 01-2138*. St. Joseph, Michigan: ASAE.
49. Blume, E., M. Bischoff, J. M. Reichert, T. Moorman and A. Konopka R. Turco. 2002. Surface and subsurface microbial biomass, community structure and metabolic activity as a function of soil depth and season. Applied Soil Ecology. 20:171-181.
50. Shi, W., J. Becker, M. Bischoff, R. F. Turco, and A. E. Konopka. 2002. Association of microbial community composition and activity with lead, chromium, and hydrocarbon contamination. Applied and Environmental Microbiology. 68:3859-3866.
51. Shi, W., M. Bischoff, R.F. Turco and A. Konopka. 2002. Long-term effects of chromium and lead upon the activity of soil microbial communities. Applied Soil Ecology. 21:169-177.
52. Turco, R.F. 2002. Biodegradation in Soil. *In* Encyclopedia of Agrochemicals. J.Plimmer (ed). 1:186-199. John Wiley & Sons. Somerset NJ USA.
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94. Orr., MJ, M. Bischoff Gray, B. Applegate, J.J. Volenec, S. Brouder and R. Turco. 2015. Transition to second generation cellulosic biofuel production systems reveals limited negative impacts on the soil microbial community structure. Applied Soil Ecology 95, 62-72

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Editor

Skipper, H.D. and R.F. Turco. 1995. (*eds*) Bioremediation, science and applications. Soil Science Society of America Special Publication 43. (319 pages).

Turco, R.F. 1994. Study Guide to Biology of Microorganisms, by Brock, Maigan, Martinko and Parker. Prentice Hall. 1994. Edited and revised the study guide to conform to the seventh edition of the textbook.

Publications from EPI-net and Microbial Food Safety Project (peer reviewed)

Carrero-Colón M. and R.F. Turco, 2007. *What is E. coli*? (http://www.epi-net.org/eng/Epinet_Perspectives_Vol_1_Issue_3.pdf)

Carrero-Colón M. and R.F. Turco, 2007. *Role of indicators on pathogen detection* (http://www.epi-net.org/eng/IndicatorPathogensBy30Nov.pdf)

Carrero-Colón M. and R.F. Turco, 2007. *Tracking Microbial Pathogens* (http://www.epi-net.org/eng/Tracking.pdf)

Carrero-Colón M. and R.F. Turco, 2008. *Bacteria in Biosolids and Manure* http://www.ag.purdue.edu/foodsci/Documents/publications/produce/mod2en/index

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Turco R.F, and M. Carrero-Colon. 2008. *The Role of Soil in Food Safety*
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Other Publications

Sheldon, R.J., K.D. Johnson, R.F. Turco, and J.J. Volenec. 1989. Nitrogen yield of morphological components from four alfalfa and two red clover varieties. Proceedings American Forage and Grassland Council - Annual Meeting. University of Guelph, Guelph, Ontario. May 21-25, 1989. p. 64-67.

Peterson, F., R.F. Turco and J. Yahner. 1989. What is ground water. WQ-2, Purdue University Water Quality Series. p. 1-4.

Turco, R.F. and C. Janssen. 1990. Interpreting water test reports part one: Inorganic Materials. WQ-5, Purdue University Water Quality Series. p. 1-4.

Preckel, P.V., R.F. Turco, M.A. Martin, and C.H. Noller. 1990. Introduction of bovine somatotropin: environmental effects. Staff Paper 90-13, Department of Agricultural Economics, Purdue University.

Janssen, C. and R.F. Turco. 1991. Bacterial contamination of household water. WQ-15, Purdue University Water Quality Series.

Turco, R.F. 1992. Soil Microbiology and Turf. Golf Course Management 2:20-26.

Whitford, F., J. Wolt, H. Nelson, M. Barrett, S. Brichford, and R. Turco. 1995. Pesticides and water quality. Purdue Pesticides Programs. Purdue Pesticide Programs office special Publication PPP-35.

Turco, R.F. Lecture notes for Herbicide Action short course: Herbicide interaction with Soil; Degradation of Herbicides in Soil and Advanced Detection of Herbicides. Presented 10 times between 1993 and 2003.

Eigel, J.D., Turco, R.F., Kladivko, E.J., 1992. Slurry trenching to isolate water quality research plots. ASAE Meeting Paper No. 922066, ASAE, St. Joseph, MI.

Brouder, S.M., B. Hofmann, E. Kladivko, R. Turco, and J. Frankenberger. 2004. Interpreting nitrate concentration in tile drainage water. AY-318-W. http://www.extension.purdue.edu/extmedia/AY/AY-318-W.pdf

Bongen, A., S.M. Brouder, and R. Turco. 2003. Using Agricultural Land for Carbon Sequestration. CASMGS Outreach (Task V) Public. http://www.agry.purdue.edu/soils/Csequest.PDF.

Bongen, A., S.M. Brouder and R. Turco. 2003. Global Warming: What Can It Mean for Agriculture? CASMGS Outreach (Task V) Public. http://www.agry.purdue.edu/soils/GWbroch.PDF.

Bongen, A., S.M. Brouder, R. Turco. 2003. Conservation Practices for Carbon Storage. CASMGS Outreach (Task V) Public. http://www.agry.purdue.edu/soils/mgmtpract.PDF.

Grants

1985 Agricultural Experiment Station Graduate Assistantship. Role of microorganisms in nutrient cycling in no-till corn soils. $28,000. 2 years.

1986 David Ross Fellowship, Estimation of enhanced biodegradation of pesticides in soils. $28,000. 2 years.

❖ North Central Regional Pesticide Impact Assessment Program. Initial and Renewal: Estimation of microbial involvement in degradation of pesticides in soil. $34,158. 2 years.

1987 Agripro. Nitrogen from legume cover crops for corn production. $20,000 awarded 2 years. R.F. Turco and K.D. Johnson.

- Showalter Trust. Contribution of agricultural chemicals to groundwater contamination. $20,000 towards purchase of Gas Chromatograph. R. Turco and J. Cushman.
- Water Resources Research Center. Agricultural impact on groundwater quality. $20,000 one year. R.F. Turco.

1988 Showalter Trust. Contribution of agricultural chemicals to ground water contamination for the purchase of a mass spectrophotometer. $25,000 R. Turco and J. Cushman.

- Water Resources Research Center. Biodegradation of agricultural pollutants during transport to ground water. $33,000 one year. R. Turco and A. Konopka co-PIs.
- Agricultural Experiment Station Graduate Assistantship. Oxygen limited microbial degradation of mixed herbicides: the overlooked contribution of anaerobiosis to xenobiotic biodegradation. $35,000 for two years.
- Monsanto Chemical. Environmental fate of bovine somatotropin. $32,000 for one year. P. Preckel, R. Turco, and M. Martin.

1989 Water Resource Research Center. Changes in structure and adsorptive behavior of dissolved humic and fulvic acid mediated by groundwater microorganisms. $27,010 for 1 year. R.F. Turco, A. Konopka and C. B. Roth.

- North Central Regional Pesticide Impact Assessment Program. The effect of adsorption and microbial activity on the degradation of an acid herbicide. $20,000 for 1 year. R. Turco.
- Agricultural Experiment Station Special Projects. The contribution of crop production alternatives to groundwater contamination by nitrates and pesticides. $50,000 awarded November for one year. R.F. Turco, D. B. Mengel, E. J. Kladivko, G. E. Van Scoyoc, J. J. Volenec, K. D. Johnson.
- Department of Agronomy Special Projects. The contribution of crop production alternatives to ground water contamination by nitrate and pesticides. $30,000 for 1 year. R. Turco, D. Mengel, E. Kladivko, G. VanScoyoc, J. Volenec, and K. Johnson.
- Crossroads, Purdue School of Agriculture. Water quality field station setup. $280,000 for 2 years. R. Turco, E. Kladivko, J. Eigel, D. Mengel, G. Van Scoyoc, J. Volenec, K. Johnson, M. Schrieber, and M. Hickman.
- Crossroads, Purdue School of Agriculture. Water quality in residential developments. $56,000 awarded for two years. R. Turco and J. Yahner.

1990 American Cyanamid. Estimation of the fate of Imazaquin in soil. $128,000 awarded for three years. R. Turco and G. Van Scoyoc.

- Illinois-Indiana SEA Grants. Biodegradation of polycyclic aromatic hydrocarbons in sediments of the Grand Calumet River. $60,000 awarded two years. A. Konopka and R. Turco.

1991 E. I. Lilly Corp. Management of biological sludge materials. $300,000 awarded three years. D. Mengel, R. Turco and B. Joern.

- CSRS Water Quality Special Grants Program. Field scale preferential flow in structured and non-structured silt loam soils. $110,000 awarded for three years. E. Kladivko, R. Turco, G. Van Scoyoc and J. Eigel.
- CSRS Water Quality Special Grants Program. Role of water table position and history on the fate of subsurface contaminants. $197,000 for three years. L. Brown, R. Turco and S. Traina.

1992 USDA-National Research Initiative (NRI) Rainfall characteristics and preferential flow of chemicals in soil. $150,000 awarded for two years. E. J. Kladivko, R.F. Turco, G. E. Van Scoyoc and B. C. Joern.

- North-Central Regional Pesticide Impact Assessment Program. Field-scale pesticides transport into tile drains. $17,826 awarded for two years. E. J. Kladivko, R.F. Turco, and M. M. Schreiber.
- U.S. EPA Kerr Laboratory, USDA National Soil Tilth Laboratory. Microbial contribution to assimilatory capacity of soils. $22,500 awarded for three years. R. Turco.
- US EPA Kerr Laboratory. Impact of agriculture on the subsurface environment. $215,000 awarded for two years. R. Turco, A. Konopka, and T. Moorman (USDA-ARS).
- Tennessee Valley Authority. Increasing the degradation of atrazine in contaminated soils by use of selected bacterial isolates. $30,000 awarded for two years. R. Turco and N. Assaf.

1993 DowElanco. Understanding the Fate of Sulfonamides in Soil. R Turco, J. Graveel. and M. Bischoff. $165,000 awarded for three years.

- CSRS-WQ special grants. Microbial activity and pesticide degradation near tile drains. R. Turco and E Kladivko. $122,000 awarded for two years.
- Indiana Department of Environmental Management (319 program). Development of pollution prevention education programs for managers of agricultural pesticide/fertilizer storage facilities. R. Turco, L. Hahn and F. Whitford. $100,000 awarded for one year.

1994 U.S. Navy. Bioreactors systems to treat shipboard graywater. A. Konopka and R. Turco, $190,000.

1995 United States Golfcourse Association: Degradation of fungicides in turfgrass systems R. Turco and C. Throssell. $130,000.

1996 U.S. Navy. Microbial ecology of the graywater bioreactor system. A. Konopka and R. Turco, $ 450,000.

1997 Indiana Department of Environmental Management (319 program). Indiana WETNET phase II. Internet resources for Indiana. R. Turco and J. Wright, 100,000 for one year.

1998 United States Golf Association. Use of Constructed Wetland to improve water quality on Golf Courses. R. Turco, Z. Reicher and J. Harbor. $125,000 for five years

- U.S. Forest Service: Enhancing Soil as a Sustainable Growth Medium: Defining Soil Biological, Chemical, and Physical Processes Influencing Nutrient and Water Availability in Systems Using Fertigation. R. Turco and A. Gillespie. $438,851 for three years.
- USDOE NABIR program. Ecological interactions between metals and microbes that impact bioremediation. A. Konopka, C. Nakatsu and R. Turco. $225,000 for two years.

2000 USDOE NABIR program. Ecological Interactions between Metals and Microbes That Impact Bioremediation. A. Konopka, C. Nakatsu, D. Schulze, and R. Turco. $1,020,683 for three years.

2001 A National Needs Water Science graduate fellowships. $144,000. Two graduate fellowships received-internal competition held.

- DuPont. $160,000 for 2 years. The behavior of Benomyl and it's 1-Butylcarbarroyl metabolites in soil. L. Lee, M. Bischoff and R. Turco
- EPA: Purdue Center for Animal Waste Management Technologies . R.F Turco, (Lead PI) A. Heber, R. Grant, G. Parker, R. Wukasch, C. Nakatsu, A. Bhunia, R. S. Govindaraju, P. S. C. Rao, R. Mohtar, K. Haghighi, B. Richert, A. Sutton, D. Jones, and B. Joern. $712,500 for two years.
- USDA Water and Watersheds program: Watershed scale assessments of *E. coli* contamination: implications of source identification for public policy debate. R.F. Turco, G Thomas, J. Harbor, J. Frankenberger, C. Nakatsu, A. Bhunia, and S. Brouder. $697,588 for two years.
- USDA Consortium for Agricultural Soils Mitigation of Greenhouse Gases – Purdue University Task 1,2,3 and 5: Basic Processes and Mechanisms. R.F. Turco (Lead PI), S.M. Brouder, B.A. Engel, T.R. Filley, E.M. Kladivko, T.J. Vyn. $975,022 for 2 years.

2002 EPA: Contaminant Remediation Optimization Program-1.. R.F. Turco, L. Lee., F. Whitford, P.S.C. Rao, L. Nies, and C. Jafvert. $500,000 for one year National Pork Producers. Fate and transport of E. coli in soils. R. Turco and S. Brouder. $30,000 for one year.

2003 CSREES/USDA National Integrated Food Safety Initiative – 406 Program. Use of GFP and LUX to track pathogen contamination, growth and inactivation on produce contaminated via manure/water (Farm to Fork). B.L. Reuhs, B.M. Applegate, R.H. Linton, and R.F. Turco. $500,000 for 3 years.

2004 EPA: Contaminant Remediation Optimization Program-II. R.F. Turco (Lead PI), C. Bigelow, M. Saplovich, S. Brouder, C. Jafvert ,and D. Ross. $447,100 for 2 years. (Washington Project)

- U.S. EPA-STAR repercussion of carbon based manufactured nanoparticles on microbial processes in environmental systems. R.F. Turco, T.R. Filley, B.M. Applegate. $335,000 for three years.
- NSF NIRT: Response of aquatic and terrestrial microorganisms to carbon-based manufactured nanoparticles. R.F. Turco, B.M. Applegate, N.J. Carroll, T.R. Filley, C.T. Jafvert, L.F. Nies. $1.6M for 4 years.

- ❖ USDA-CSREES/NRI 26.0 Watershed Processes and Water Resources. Understanding the survival of the fecal microorganisms salmonella and *E. coli* in tile drainage and surface water. R.F. Turco, B.M. Applegate, S.M. Brouder, T.R. Filley. $ 354,000 for 2 years.
- ❖ NRCS: Innovative Environnemental Technologies (IET). R.F. Turco (Lead PI), A. Heber, K. G. Raghothama and K. Banks. 500,000 for 2 years.(Washington Project)

2005 USDA-CSREES 406 program. EPI-NET. Environmental Pathogens Information network. 400,000 for 3 years. R. Turco

- ❖ NASA Minimizing equivalent system mass for a regenerative life-support system by optimizing kinetics 194,000 for 2 years. R. Turco and L. Nies

2006 USDA Conservation Effects Assessment Program. $660,000. Watershed-Scale Evaluation of BMP Effectiveness and Acceptability: Eagle Creek Watershed, Indiana. Developed with Jane Frankenberg, Lenore Tedesco, Jerry Shively, Linda Prokopy.

2007 Center for the Environment. Living Laboratories on the Wabash (LLOW). $70,000 Developed with Kim Wilson, Linda Prokopy, Larry Nies et al.

2008 USDA NRI, Managed Ecosystems. Ecological services of agro-biofuels: productivity, soil C storage, and air and water quality. $399,999. S.M. Brouder, PI, R.F. Turco, J.J. Volenec, D.R. Smith and G. Ejeta CoPIs.

- ❖ IDEM 319: Wabash River: Lafayette-West Lafayette Reach of the Wabash River Watershed Management Plan. $700,000. L. Prokopy, L. Bowling, K. Wilson and R. Turco.

2009 USDA NRI Tracking the survival and distribution of *Mycobacterium avium subsp paratuberculosis* in the agroecosystem: implications for animal health. $350,000 E. Rizaman, C. Wu and R. Turco.

- ❖ USDA-NRI. Sustainable Agroecosystem Science LTAP. Environmental and productivity Benefits of Ecological Intensification of U.S., Maize-based Cropping Systems $200,000. Brouder, S.M., J.J. Volenec, R.F. Turco, L . Prokopy and B. Gramig

2010 SunGrants: Optimization of biomass productivity and environmental sustainability for cellulosic feedstocks: Land capability and life cycle analysis. $875,000 Brouder, S.M., J.J. Volenec, R.F. Turco, L . Prokopy and B. Gramig

2011 IDEM 319: One year extension to Wabash River: Lafayette-West Lafayette Reach of the Wabash River Watershed Management Plan. $200,000. L. Prokopy, L. Bowling, and R. Turco.

- ❖ ALCOA: Beneficial reuse of Bauxite $120,000. R. Turco
- ❖ IWRRC: Management support $10,000. R. Turco
- ❖ NFL / University of Toledo. $99,000. MRSA on Athletic Fields. W. Von Sigler and R. Turco.

2012 IDEM-319 $240,000 Region of the Great Bend of the Wabash River Implementation Project with L. Prokopy, S. Peel and R. Goforth.

- ❖ USDA-CAP: $2,875,642 Sustainable Production and Distribution of Bioenergy for the Central USA with J. Volenec, S. Brouder, others

- IDEM-319: $132,000 Deer Creek-Sugar Creek Watershed Management Plan and Implementation Program. Project with S. Peel and R. Goforth.

2013 NRCS-CIG: $230,000 Soil Quality: Using cover crops to improve soil health and moisture retention with Sara Peel.

- USDA-AFRI: $745,950 USDA-AFRI, Integrated Research, Education, and Extension Competitive Grants Program – Organic Transitions (ORG). Greenhouse Gas Emissions and Soil Quality in Long-term Integrated and Transitional Reduced Tillage Organic Systems. With Fortuna A. (PD), (CO-PDs) R. Turco, C.G. Cogger, D. Collins, A. Bary and A. Stone.

Extension, service and outreach activities:

While I do not hold an extension appointment, I have contributed many hours to the education of Indiana residents regarding water quality issues. He is continually in heavy demand to provide expertise in the environmental quality area. I have participated in a number of programs on the fate of chemicals and fertilizers in turf. My expertise has been utilized in the turf area for presentations on the microbial nature of black layer, a serious problem on golf greens. I presently working with a number of groups (IDNR and the well water groups) to solve water quality problems related to bacterial contamination. I am also active in efforts to coordinate actions of Purdue with other state agencies.

As a leader in the area of ground and surface water quality at Purdue, I am in regular contact with Federal, State and local officials such as EPA, IDEM, USGS and local sanitarians. He also is regularly invited by the administration to speak to groups such as the local and national C.A.R.E.T. executive board; the President's and Dean's Advisory Council; Congressional leaders and aids; State legislators and other significant groups.

Workshops, Short Courses, and Other Organized Educational Activities

Indiana Farm Bureau, Countrymark Co-op Inc.
Indiana Farm Bureau Annual Convention (Pesticide and Ground Water in Indiana)
Indiana Farmers Union Convention (Agriculture and Water Quality)
Purdue Agriculture Science Forecast
North Central meeting of the Indiana Association of Soil and Water Conservation Districts (Keynote address - Indiana Water Quality)
Midwest Regional Turf Conference
Indiana Food Technology Meeting
Kentuckiana Crop Production Seminar for Farm Supply Dealers (1989 and 1991)
Agronomy Farm Field Day (1985-1992)
IHETS programs on Indiana groundwater quality
National Railroad Contractors Association Pest Control Seminar
Indiana Well Water Association
Indiana Institute of Agriculture, Food and Nutrition, Inc. discussion group on Clean Water Act
Purdue Fertilizer and Ag Chemical Conference
Grants Workshop, Indiana Extension Educators (3 different sessions)
Well Water Microbiology IDNR – multiple presentations in 2012, 2013 and 2014

Invited Presentation (from 1998 on)

Turco, R.F. and T.B. Moorman. Effect of soil organic matter on herbicide degradation. Weed Science Society of America, Las Vegas, NV.

Turco, R.F., M. Bischoff, and A. Konopka. Farmsteads well water quality in Indiana. EPA technical meeting, Washington, DC.

Turco, R.F. and A. Konopka. Response of microbial populations to carbofuran in soils enhanced for its degradation. Invited paper, American Chemical Society National Meeting, Miami, FL.

Turco, R.F. and E.J. Kaldivko, Studies on pesticide mobility: laboratory vs. field. American Chemical Society Meeting, Atlanta, GA.

Turco, R.F. Understand enhanced biodegradation of pesticides. Midwest Regional Turf Conference, Indianapolis, IN.

Turco, R.F. Pesticide degradation research. IUPU-Fort Wayne Biology Department Seminar Series.

Turco, R.F. Pesticide degradation studies. National Soil Tilth Lab., Ames, IA.

Turco, R.F., A. Kennedy, and M. Jawson. Microbial indicators of soil quality. SSSA symposium: "Soil quality for a sustainable environment", Minneapolis, MN.

Turco, R.F. Understanding enhanced biodegradation of Pesticides. Golf Course Superintendent Association of America National Meeting, Anaheim, CA.

Turco, R.F. M. Bischoff, N. Assaf, A. Konopka, T. Moorman, and M. Jawson. The impact of agriculture on subsurface ecology. Agricultural Research to Protect Water Qualtiy. SWCS annual meeting, Minneapolis, MN.

Turco, R.F. and T.B.Moorman. Factors limiting pesticide degradation in soils. EPA special meeting: Bioremediation of pesticide mixing and handling facilities, Cincinnati, OH.

Turco, R.F. Microbial degradation of pesticides. Agronomy and Soils Department, The Ohio State University, Columbus, OH.

Turco, R.F. Keynote address: Fate of Pesticides in the environment: Applications to protective clothing. Second International Symposium on Consumer environmental issues: Safety, Health, Chemicals and Textiles in the near environment, St. Petersburg Beach, FL.

Turco, R.F. Pesticide degradation in soils. The Ontario Turfgrass Association, Toronto, Ontario.

Turco, R.F. and M. Sadowsky. Understanding the microflora of bioremediation: GEMs and the Indigenous Microbes. Presented at Bioremediation: Science and Application. Soil Science Society of America, Cincinnati, OH.

Turco, R.F. Understanding enhanced biodegradation of Pesticides. Golf Course Superintendent Association of America National Meeting, Anaheim, CA.

Turco, R.F. M. Bischoff, N. Assaf, A. Konopka, T. Moorman, and M. Jawson. The impact of agriculture on subsurface ecology. Agricultural Research to Protect Water Qualtiy. SWCS annual meeting, Minneapolis, MN.

Turco, R.F. Microbial degradation of pesticides. Agronomy and Soils Department, The Ohio State University, Columbus, OH.

Turco, R.F., E. Blume, J. Welch, M. Bischoff, T. B. Moorman and M. Jawson. 1994. Xenobiotic transformation efficiencies in surface and subsurface environments. American Chemical Society, Emerging Technologies in Hazardous waste management VI. Atlanta, GA.

Assaf, N. and R. Turco 1994. Factors affecting bioavailability of xenobiotics and how they impact bioremediation. Society of Environmental Toxicology and Chemistry (SETAC) Denver

Frederick, E., C. Throssell and R. Turco. Fungicides: Their Sordid Lives in Soil. Southwest Turfgrass Association Conference. Rudisose, NM.

Turco, R. and C. Throssell. Soil Microorganisms: Small Friends in Dark Places. Southwest Turfgrass Association Conference. Rudisose, NM.

Turco, R.F. Subsurface Microbiology, EPA site review, Ada, OK.

Turco, R.F., E. Blume, J. Welch, M. Bischoff, T. Moorman and M. Jawson. Surface and subsurface environments. Second international conference on Groundwater Ecology, Atlanta, GA.

Turco, R.F. Microbial degradation of herbicides in the subsurface. University of Minnesota, School/Departmental Seminar. Minneapolis MN

Turco, R.F. Soil Microbiology and bioremediation. USGA National Meeting.

Turco, R.F. Pesticide degradation in subsurface. USDA Lab Ames, IA

Turco, R.F. The fate of herbicides in the Mix-load environment. Weed Science Society. Norfolk, VA.

Turco, R.F. Development of the KCARE concept. Kansas State University.

Turco, R.F. Soil Microbiology of Turfgrass; The use and miss use of biological control. Southwest Turfgrass Association Conference. Rudisose, NM.

Turco, R.F. Federal University of Santa Maria, Rio Grande Do Sul, Brazil. Soil Quality and Soils Research.

Turco, R.F. Brazilian No-till conference, Passo Fundo Rio Grande Do Sul, Brazil. Microbial indicators of soil quality in tillage systems.

Turco, R.F. Turfgrass Winter Program. Soil Microbiology and turfgrass production. Indianapolis, IN

Turco, R.F. Indiana Health Association. Septic System Microbiology. Indianapolis, IN

Turco, R.F. Kentucky-Indiana Fertilizer and Plant Food Association. Hypoxia and the Midwestern Farmer. Evansville, IN

Turco, R.F. Hoosier Environmental Council, Upper White River Meeting Chaired Session and spoke on Environmental Impacts of Agriculture. Indianapolis, IN

Turco, R.F. Use of Forage Plants in Phytoremediation Systems. American Forage and Grassland Council. Annual Meeting. Indianapolis, IN

Turco R.F and E. Blume. Indicators of Soil Quality implications for soils in Brazil. BIOFERT 1998. Caxamba, Brazil.

Sigler, W.V., C. P Taylor, C. Throssell, M. Bischoff and R. Turco. Environmental Fates of Fungicides in the Turfgrass Environment. ACS symposium, ACS meeting, Boston, MA.

Turco, R.F., Soils and the Environment. Vincennes University, Vincennes, IN

Turco, R.F., Remediation of soil. University of Illinois. Urbana, IL

Turco, R.F., Water and Water Quality. The Fertilizer Roundtable, Annapolis, MD.

Turco, R.F. US Environmental Programs. Novgorod, Russia.

Turco, R.F. Brominated Flame Retardants in the Environment, Research programs at Purdue. Brominated Flame Retardants Association, Brussels.

Turco, R.F., E. coli in the environment. Hoosier Health Conference. Indianapolis, IN

Turco, R. F. and Z. Reicher. Use of constructed wetlands. Midwest Turfgrass Foundation Winter Meeting. Indianapolis, IN

Turco, R.F., Implication of soil microbiology to crop production. Gordon and Associates group. Indianapolis, IN

Turco, R.F. and S. Brouder. TMDLs and E. coli. Watershed Assessment Program-TMDLS. Chicago, ILEPA

Turco, R. F. E. coli in Indiana streams and waterways. Indiana Environmental Health Conference. Indianapolis, IN.

Turco, R.F. Life cycle of pathogens and nutrients from source to sink in a septic system. IOWPA conference. Lebanon, IN.

Turco, R.F. Wetlands and water quality research. Ohio Wetlands Symposium, Columbus, Ohio.

Turco, R.F. Past, Present and Prevention: History of biological weapons. Purdue University workshop on Agro-security. West Lafayette, IN

Turco, R.F. Bioterrorism and Food Security Dean's Advisory Committee. West Lafayette, IN

Turco, R.F. Indiana's Water Resource Research Center. Midwest Groundwater Conference Bloomington, IN

Turco, R.F. Purdue University Nano-Technology and the Environment. EPA research meeting on Nano-technology, Philadelphia PA.

Nyberg, L.M., Z. Tong, M. Bischoff, L. F. Nies and R.F. Turco, "Effect of carbon-based manufactured nanoparticles (CMNP) on microbial communities", Presented at the 229th ACS National Meeting, San Diego, CA, March 13-17, 2005.

Turco, R.F., M. Bischoff, Z. Tong, L. Nies, L. Nyberg, T. Filley, K. Schreiner and B. Applegate. 2006. Impacts of Fullerene (nC_{60} or C_{60}) on Microbiological Functions in Soil and Biosolids. Invited presentation EPA national review meeting, Washington DC.

Turco R.F. and Z. Reicher 2006. Golf Course Wetlands: Tying Up Golf Balls, Nitrogen, and Phosphorus. Invited Presentation ASA annual meeting.

Turco R.F. and L. Oliver 2006. Funding for Life: Approaches for Obtaining Funding from Competitive Grant Programs. Agronomy Abstracts. ASA, Madison, WI. *(Invited)*

Turco R.F. and L. Oliver. 2006. Approaches for Obtaining Funding from Competitive Grant Sources. USEPA STAR Fellows Annual Conference, Washington DC.

Turco, R. F., Tong, Z., Bischoff, M., Nyberg, L. M., Nies, L. F., Kulkarni, P. P., Jafvert, C. T., Applegate, B., "Effects of fullerenes (nC_{60} or C_{60}) on soil microbiological functions." Presented at the 233rd ACS National Meeting, Chicago, IL, March 25-29, 2007

Turco, R.F., M. Bischoff, Z. Tong, L. Nies, L. Nyberg, C. Jafvert, P. Kulkarni, T. Filley, K. Schreiner and B. Applegate. 2007. Nanoparticle in soil and sludges: implications to microbial processes. Invited presentation, SETAC 28th Annual Milwaukee WI

Turco, R.F. Environmental Programs at Purdue. Discovery Park presentation to NIH visitor group.

Turco, R.F., M. Bischoff, Z. Tong, L. Nies, L. Nyberg, C. Jafvert, P. Kulkarni, T. Filley, K. Schreiner and B. Applegate. 2007. Manufactured nanoparticles in soil. American Society of Agronomy Division S11 special symposium on Nanomaterials.

Turco, R.F. 2007. Nanomaterials. College of Agriculture meeting with the Industrial College of the Armed Forces.

Turco, R., F. M. Heller and L. Nies 2008. Petroleum Education Research Foundation Meeting Philadelphia PA 'Fate of biofuels in soil"

Turco R.F and D. H. Wardrop, 2008 Approaches for Obtaining Grant Funding. USEPA STAR Fellows Annual Conference, Washington DC.

Nyberg, L., R.F. Turco, and L. Nies. Assessment of the Impact of PEGylated Single-walled Nanotubes (SWNT) in an Anaerobic Environment. International Conference on the Environmental Implications and Applications of Nanotechnology. Amherst, MA. June 9-11, 2009.

Nyberg, L., R.F. Turco, and L. Nies. Assessment of the Impact of PEGylated Single-walled Nanotubes (SWNT) in an Anaerobic Environment. EmCon 2009: 2nd International Conference on Occurrence, Fate, Effects, and Analysis of Emerging Contaminants in the Environment. August 4-7, 2009.

Turco R.F, L. Oliver and D.H. Wardrop, 2009 Successful Approaches for Obtaining Grant Funding. USEPA STAR Fellows Annual Conference, Washington DC.

Turco R.F, L. Oliver and D.H. Wardrop, 2010. Successful Approaches for Obtaining Grant Funding-Where is the money. American Society of Agronomy.

Turco, R.F.,M. Bischoff, Z. Tong, L. Nyberg, E. Espinosa, L. Nies, M-J. Orr, C. Jafvert, T. Filley, and K. Schreiner. Manufactured nanomateirals: understanding possible environmental impacts . XIX

International Materials Research Congress 2010, August 15 - 19, 2010. Cancun, Mexico. A joint meeting of the Sociedad Mexicana de Materiales and the Materials Research Society

Turco, R.F.,M. Bischoff, Z. Tong, L. Nyberg, E. Espinosa, L. Nies, M-J. Orr, C. Jafvert, T. Filley, and K. Schreiner. Nanotechnology in the Environment. Presented at the Liaoning Academy of Agricultural Sciences and Shenyang Agricultural University as part of the China-US Workshop "Sustainable Management of Soil and Water Resources" January 7-10, 2010, Shenyang, China.

Turco, R.F., M. Bischoff, Z. Tong, L. Nyberg, and L. Nies Long Beach, Seaview Ballroom B, First Floor 248-9 Manufactured Nanomaterials in the Environment-What Is Known and What We Need to Know? (Invited)

Turco, R.F. and S. Brouder. Certified Crop Advisors Annual Meeting – Indianapolis, IN : Carbon dioxide sequestration in soil. How does it work and what's in it for Agriculture and you?. December 14, 2010.

Turco, R.F. and S. Brouder. Indiana Crop Consultants – Atlanta IN: Carbon dioxide sequestration in soil / Pollution Trading Short Course. March 16, 2010

Turco, R.F. and M. Heller. Tippecanoe Soil Conservation Meeting: Hypoxia What is it? August 21, 2010. Lafayette, IN. EQIP – Program nutrients and sediments reduction Gulf of Mexico

Turco, R.F. and M. Heller. Friends of the Wildcat River: Everything we do on the land affects. Fish and Wildlife. August 29, 2010.

Turco, R.F.,M. Bischoff, Z. Tong, L. Nyberg, E. Espinosa, L. Nies, M-J. Orr, C. Jafvert, T. Filley, and K. Schreiner. Spring 2010. WALLA Course: Implications of Nanoscience, Morton School

Turco, R.F. The Environmental implications of Midwest Agriculture. University of California, Santa Barbra, Oct 2013.

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Education

2002	Ph.D., Epidemiology, University of North Carolina at Chapel Hill
1998	M.Sc., Environmental Sciences, Wageningen University, The Netherlands

Positions

2013 – present	Associate Professor, Department of Pediatrics, University of Rochester School of Medicine and Dentistry, New York (secondary)
2013 – present	Director, Doctoral Program in Epidemiology, Department of Public Health Sciences, University of Rochester School of Medicine and Dentistry, Rochester, New York
2009 – present	Associate Professor, Departments of Public Health Sciences (formerly Community and Preventive Medicine), Environmental Medicine, and Dentistry, University of Rochester School of Medicine and Dentistry, Rochester, New York
2008 – present	Chief (interim 2008-2009), Division of Epidemiology, Department of Public Health Sciences (formerly Community and Preventive Medicine), University of Rochester School of Medicine and Dentistry, Rochester, New York
2009 – 2012	Founding Chair of Steering Committee, Undergraduate Public Health-related Programs, University of Rochester, Rochester, New York
2008 – 2009	Assistant Professor, Department of Environmental Medicine, University of Rochester School of Medicine and Dentistry, Rochester, New York (secondary)
2004 – 2009	Assistant Professor, Division of Epidemiology, Department of Community and Preventive Medicine, University of Rochester School of Medicine and Dentistry, Rochester, New York
2002 – 2004	Epidemiologist, ENVIRON International Corp., Health Sciences Institute (formerly Applied Epidemiology, Inc.), Amherst, Massachusetts
1998 – 2002	Research assistant, Department of Epidemiology, University of North Carolina at Chapel Hill
1997 – 1998	Research assistant, Department of Environmental Health, Colorado State University, Fort Collins, Colorado

Professional Societies

2010 – present	Society for Epidemiologic Research
2004 – present	Member, American College of Epidemiology
2001 – 2013	International Society for Environmental Epidemiology
2009 – 2011	American Public Health Association
2008 – 2010	American Medical Writers Association

Continuing Education

2008 – 2009 Introduction to Medical Center Leadership, Office of the Associate Dean for Faculty Development-Medical Education, University of Rochester School of Medicine and Dentistry

Honors

2002 Selection to Delta Omega, The Honorary Public Health Society

2000 Recipient of Kaplan Student Publication Award, Department of Epidemiology, University of North Carolina at Chapel Hill

Ongoing or Completed Research Support

2014-2015 1 P30 ES01247 (van Wijngaarden). A Pilot Study to Determine the Correlation between Bone Lead Levels and Measures of HPA Axis Dysfunction in Individuals Environmentally Exposed to Lead. (NIEHS Environmental Health Sciences Center Mini-Pilot Project Program)

2013-2018 Contract C028678 (Dumyati). Reducing Long Term Care Facility Clostrodium difficile Through An Antibiotic Stewardship Program Focusing on Transition of Care (Healthcare Associated Infection Prevention Project). Role: Investigator

2013-2014 3 U48 DP001910-05S1 (Barnett). Rochester Prevention Research Center. Role: Investigator

2012-2013 1 P30 ES01247 (van Wijngaarden). Does iron status modify the adverse effects of lead exposure on child cognitive development? (NIEHS Environmental Health Sciences Center Mini-Pilot Project Program)

2010-2015 1 K12 ES019852-01 (Cory-Slechta). Women's Health and the Environment Over the Entire Lifespan (WHEEL). Role: Program Director (2010-2011: Resource Lab Director)

2010-2015 2 R01 ES008442-10 (Davidson). Methylmercury Effect on Adolescent Development Renewal. Role: Co-Investigator

2010-2015 P30 ES01247 (Gasiewicz). Environmental Agents as Modulators of Disease Processes. Role: Epidemiologist

2010-2014 2 R01 ES10219-07 (Davidson). Factors Modifying the Toxicity of Methylmercury in a Fish-Eating Population. Role: Co-Investigator

2010-2013 U01 (Dumyati). Enhancing Epidemiology and Laboratory Capacity in the NY EIP. Role: Co-Investigator

2010-2012 Contract C022817 (Dumyati). Hospital Acquired Infection Prevention-Reducing Catheter-Related Bacteremia In non-ICU Units. Role: Co-Director

2009-2012 1 U01 DD000510 (Mink). The Impact of Tic Disorders in Youth, on Individuals, Families and Communities. Role: Epidemiologist

2009-2010 3 R01 ES008442-09S1 (Davidson). Methylmercury Effect on Adolescent Development. Role: Epidemiologist

2008 1 P30 ES01247 (Cory-Slechta). Lead as a Risk Factor for Alzheimer's Disease and Mild Cognitive Impairment. Role: Co-Investigator (NIEHS Environmental Health Sciences Center Pilot Project Program)

2007-2009 1 R03 CA130028-01 (Bunin). Occupational Pesticide Exposure of Parents and Brain Tumor Risk in Children. Role: Co-Investigator (PI of subcontract to University of Rochester)

2007-2012 1 R01 ES015578-02 (Watson). Mercury Vapor from Amalgam and Methylmercury Co-Exposure on Neurodevelopment. Role: Co-Investigator

2006-2011	UL1RR024160 (Guzick). The University of Rochester's Clinical and Translational Science Institute. Role: Co-Director for the key function of Research Design, Biostatistics and Clinical Research Ethics
2005-2010	2 R01 ES008442-05 (Davidson). Methylmercury Effect on Adolescent Development. Role: Co-Investigator
2005-2008	U59/CCU321285-04-1 (Hyman). Behavioral and Medical Disorders in Children with Down Syndrome in New York: Prevalence and Phenotype. Role: Epidemiologist
2007	Feasibility study of the health effects of industrial pollution in the Aamjiwnaang First Nation Community. Role: Principal Investigator of subcontract to University of Rochester; Co-Principal Investigator of Health Canada contract awarded to the Aamjiwnaang First Nation
2005-2007	200-2005-M-14588. Parental Occupational Exposure and Childhood Brain Cancer. Role: Principal Investigator (subcontract)
2006	1 P30 ES01247. A Pilot Study – Feasibility Assessment to Conduct a Case-Control Study of Lead and Brain Cancer. Role: Principal Investigator (NIEHS Environmental Health Sciences Center Pilot Project Program)

Peer-Reviewed Publications

1. Dumyati G, Concannon C, **van Wijngaarden E**, Love TM, Graman P, Pettis AM, Greene L, El-Daher N, Farnsworth D, Quinlan G, Karr G, Ward L, Knab R, Shelly M. Sustained Reduction of Central Line Associated Bloodstream Infections Outside the ICU with a Multimodal Intervention Focusing on Central Line Maintenance. *American Journal of Infection Control*, in press.
2. Concannon C, **van Wijngaarden E**, Stevens V, Dumyati G. The Effect of Multiple Concurrent Central Venous Catheters on Central Line-Associated Bloodstream Infections (CLABSI). *Infection Control & Hospital Epidemiology*, in press.
3. Hoffmire CA[†], Connolly H, Magyar C, Fernandez ID, **van Wijngaarden E**. Sleep disturbances in children with Down Syndrome and multiple comorbidities in New York State. *Journal of Clinical Sleep Medicine*, in press.
4. Rhee S, Tsai R, Nelson DS, **van Wijngaarden E**, Dumyati G. Surveillance of Clostridium difficile in the Pediatric Population of Monroe County: 2010-2011. *Journal of Pediatric Infectious Diseases Society*, in press.
5. **van Wijngaarden E**, Harrington D, Kobrosly R, Thurston SW, O'Hara T, McSorley EM, Myers GJ, Watson GE, Shamlaye CF, Strain JJ, Davidson PW. Prenatal exposure to methylmercury and LCPUFA in relation to birth weight. *Annals of Epidemiology* 2014;24(4):273.278. PMCID: PMC3951518
6. Kobrosly RW[†], **van Wijngaarden E,** Seplaki CL, Cory-Slechta DA, Moynihan J. Depressive Symptoms are Associated with Allostatic Load among Community-Dwelling Older Adults. *Physiology and Behavior* 2014;123:223-230. PMCID: PMC3934832
7. Roizen NJ, Magyar CI, Kuschner ES, Sulkes SB, Druschel C, **van Wijngaarden E**, Rodgers L, Diehl A, Lowry R, Hyman SL. A community cross-sectional survey of medical problems in 440 children with Down syndrome in New York State. *Journal of Pediatrics* 2014;164(4):871-875.
8. Simning A[†], Conwell Y, Mohile SG, **van Wijngaarden E**. The Moderating Effect of Age on the 12-Month Prevalence of Anxiety and Depressive Disorders in Adults with a Lifetime History of Cancer. *Journal of the American Geriatrics Society*, in press.
9. Simning A[†], Conwell Y, **van Wijngaarden E**. Cognitive Impairment in Public Housing Residents Living in Western New York. *Social Psychiatry and Psychiatric Epidemiology* 2014;49(3):477-485. PMCID: PMC3796150

10. Lyngdoh T, Viswanathan B, **van Wijngaarden E**, Myers GJ, Bovet P. Cross-sectional and longitudinal associations between body mass index and cardiometabolic risk factors in adolescents in a country of the African region. *International Journal of Endocrinology* 2013;2013:801832. PMCID: PMC3766579
11. Watson GE, **van Wijngaarden E**, Love T, McSorley EM, Bonham MP, Mulhern MS, Yeates AJ, Davidson PW, Shamlaye CF, Strain JJ, Thurston SW, Harrington D, Zareba G, Wallace JMW, Myers GJ. Neurodevelopmental Outcomes at 5 Years in Children Exposed Prenatally to Maternal Dental Amalgam: The Seychelles Child Development Nutrition Study. *Neurotoxicology and Teratology* 2013;39C:59-62. PMCID: PMC3917122
12. **van Wijngaarden E**, Thurston SW, Myers GJ, Strain JJ, Weiss B, Zarcone T, Watson GE, Zareba G, McSorley EM, Mulhern MS, Yeates AJ, Henderson J, Gedeon J, Shamlaye CF, Davidson PW. Prenatal methyl mercury exposure in relation to neurodevelopment and behavior at 19 years of age in the Seychelles Child Development Study. *Neurotoxicology and Teratology* 2013;39C:19-25. PMCID: PMC3795956
13. **van Wijngaarden E**, Davidson PW, Smith TH, Evans K, Yost K, Love T, Thurston SW, Watson GE, Zareba G, Burns CM, Shamlaye CF, Myers GJ. Autism Spectrum Disorder Phenotypes and Prenatal Exposure to Methylmercury. *Epidemiology* 2013;24(5):651-659. PMCID: PMC3732522
14. Strain JJ, McSorley EM, **van Wijngaarden E**, Kobrosly RW, Bonham MP, Mulhern MS, McAfee AJ, Davidson PW, Shamlaye CF, Henderson J, Watson GE, Thurston SW, Wallace JMW, Ueland PM, Myers GJ. Choline status and neurodevelopmental outcomes at 5 y of age in the Seychelles Child Development Nutrition Study. *British Journal of Nutrition* 2013;110(2):330-336. PMCID: PMC3723412
15. Kobrosly RW[†], Seplaki CL, Cory-Slechta DA, Moynihan J, **van Wijngaarden E**. Multisystem Physiological Dysfunction Is Associated with Depressive Symptoms in a Population-Based Sample of Older Adults. *International Journal of Geriatric Psychiatry* 2013;28(7):718-727. PMCID: PMC3552052
16. Abdolahi A[†], **van Wijngaarden E**, McClean MD, Herrick RF, Allen JG, Ganguly A, Bunin GR. A case-control study of paternal occupational exposures and the risk of childhood sporadic bilateral retinoblastoma. *Occupational and Environmental Medicine* 2013;70(6):372-9. PMCID: PMC3666318
17. Lyngdoh T, Viswanathan B, Kobrosly R, **van Wijngaarden E**, Davidson PW, Cory-Slechta DA, Strain JJ, Myers GJ, Bovet P. Blood pressure and cognitive function: a prospective analysis among adolescents in Seychelles. *Journal of Hypertension* 2013;31(6):1175-82. PMCID: PMC3874141
18. Stevens V, **van Wijngaarden E**. Commentary: Proton Pump Inhibitor Use May be Associated with an Increased Risk of Clostridium difficile Infection. *Evidence-Based Medicine* 2013;13:150.
19. Watson GE, Evans K, Thurston SW, **van Wijngaarden E**, Wallace JMW, McSorley EM, Bonham MP, Mulhern MS, McAfee AJ, Davidson PW, Shamlaye CF, Strain JJ, Love T, Zareba G, Myers GJ. Prenatal exposure to dental amalgam in the Seychelles Child Development Nutrition Study: Associations with neurodevelopmental outcomes at 9 and 30 months. *Neurotoxicology* 2012:33(6): 1511-17. PMCID: PMC3576043
20. Stevens V[†], Concannon C, **van Wijngaarden E**, McGregor J. Validation of the Chronic Disease Score-Infectious Disease (CDS-ID) for the Prediction of Hospital-Associated Clostridium difficile Infection (CDI) within a Retrospective Cohort. *BMC Infectious Diseases* 2013:13:150. PMCID: PMC3614868
21. Strain JJ, Davidson PW, Thurston SW, Harrington D, Mulhern MS, McAfee AJ, **van Wijngaarden E**, Shamlaye CF, Henderson J, Watson GE, Zareba G, Cory-Slechta DA, Lynch M, Wallace JMW, McSorley EM, Bonham MP, Stokes-Riner A, Sloane-Reeves J, Janciuras J, Wong R, Clarkson TW, Myers GJ. Maternal Polyunsaturated Fatty Acid Status but not Prenatal Methylmercury exposure is associated with Children's Language Functions at Age Five Years in the Seychelles. *Journal of Nutrition* 2012;142(11):1943-9. PMCID: PMC3498972
22. Guise JM, Nagel JD, Regensteiner JG; Building Interdisciplinary Research Careers in Women's Health **Directors**. Best practices and pearls in interdisciplinary mentoring from Building Interdisciplinary Research

Careers in Women's Health Directors. *Journal of Womens Health (Larchmt)* 2012;21(11):1114-27. PMCID: PMC3491631

23. Gilboa SM, Desrosiers TA, Lawson CC, Lupo PJ, Riehle-Colarusso T, Stewart PA, **van Wijngaarden E**, Waters MA, Correa A, and the National Birth Defects Prevention Study. Association between Maternal Occupational Exposure to Organic Solvents and Congenital Heart Defects, National Birth Defects Prevention Study, 1997-2002. *Occupational and Environmental Medicine* 2012;69(9):628-35.
24. Desrosiers TA, Lawson CC, Meyer RE, Richardson DB, Daniels JL, Waters MA, **van Wijngaarden E**, Langlois PH, Romitti PA, Correa A, Olshan AF and the National Birth Defects Prevention Study. Maternal occupational exposure to organic solvents during early pregnancy and risks of neural tube defects and orofacial clefts. *Occupational and Environmental Medicine* 2012;69(7):493-9.
25. Gordetsky J, **van Wijngaarden E**, O'Brien J. Redefining Abnormal FSH in the Male Infertility Population. *British Journal of Urology International* 2012;110(4):568-72.
26. Simning A[†], Conwell Y, Fisher SG, Richardson TM, **van Wijngaarden E**. The Characteristics of Anxiety and Depression in Older Adults Living in Public Housing. *International Psychogeriatrics* 2012;24:614-623.
27. Simning A[†], **van Wijngaarden E**, Conwell Y. The association of African American's perceptions of neighborhood crime and drugs with mental illness. *Social Psychiatry and Psychiatric Epidemiology* 2012;47(7):1159-1167. PMCID: PMC3278495
28. Stevens V [†], Dumyati G, Brown J, **van Wijngaarden E**. Differential Risk of Clostridium difficile Infection with Proton Pump Inhibitor Use by Level of Antibiotic Exposure. *Pharmacoepidemiology & Drug Safety* 2011;20(10):1035-1042.
29. Hoffmire CA[†], Block RC, Thevenet-Morrison K, **van Wijngaarden E**. Associations between omega-3 poly-unsaturated fatty acids from fish consumption and severity of depressive symptoms: an analysis of the 2005-2008 National Health and Nutrition Examination Survey. *Prostaglandins, Leukotrienes & Essential Fatty Acids* 2012;86(4-5):155-160. PMCID: PMC3340427
30. Simning A[†], **van Wijngaarden E**, Fisher SG, Richardson TM, Conwell Y. Mental Health Care Need and Service Utilization in Older Adults Living in Public Housing. *American Journal of Geriatric Psychiatry* 2012;20(5):441-451.
31. Strutz KL, Dozier AM, **van Wijngaarden E**, Glantz JC. Birth Outcomes across Three Rural-Urban Typologies in the Finger Lakes Region of New York. *Journal of Rural Health* 2012;28:162–173. PMCID: PMC3337719
32. Kobrosly R[†], Seplaki CL, Jones CM, **van Wijngaarden E**. Physiologic Dysfunction Scores and Cognitive Function Test Performance in United States Adults. *Psychosomatic Medicine* 2012;74(1):81-88. PMCID: PMC3708451
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Letters in Peer-Reviewed Journals

1. Desrosiers TA, Lawson CC, Meyer RE, Waters MA, **van Wijngaarden E**, Langlois PH, Romitti PA, Correa A, Olshan AF. Re: The study of the relation between maternal occupational exposure to solvents and birth defects should include oxygenated solvents (authors' response). *Occupational and Environmental Medicine* 2012;69(12):933-4.
2. Eisenberg K[†], **van Wijngaarden E**. Lead poisoning in immigrant children in the United States (letter). *American Journal of Public Health*, 2008;98(7):1156-1157.
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5. **Van Wijngaarden E**. Suicide in electricians (letter). *Occupational and Environmental Medicine* 2002;59(9):649.

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Book Chapters

1. **van Wijngaarden E**, Myers GJ, Shamlaye CF, Strain JJ, Davidson PW. The impact of prenatal exposure to MeHg and maternal nutritional status on child development: Findings from the Seychelles Child Development Study. In: Aschner M, Ceccatelli S (eds.). Methylmercury and Neurotoxicity. Springer Verlag GmbH, Heidelberg, Germany: 2012, pp.37-53.
2. **van Wijngaarden E**. Lead. In: Schwab M (ed.). *Encyclopedia of Cancer, 2nd Edition*. Springer Verlag GmbH, Heidelberg, Germany: 2008, pp. 1640-1643.
3. Olshan AF, **van Wijngaarden E**. Paternal occupation and childhood cancer. In: Robaire B, Boss JM (eds.). Advances in Male Mediated Developmental Toxicity. Plenum Publishing Company, New York, NY: 2003. [reprinted in *Advances in Experimental and Medical Biology* 2003;518:147-61]

Invited Speaker

1. **van Wijngaarden E.** Prenatal Methylmercury Exposure from Fish Consumption and Child Development: Findings from the Seychelles Child Development Study. CTSI Seminar Series, University of Rochester School of Medicine and Dentistry. September 24, 2013.
2. **van Wijngaarden E**. Evaluating environmental neurotoxicity in children and older adults. Research Seminar, Department of OBGYN, University of Rochester School of Medicine and Dentistry. March 28, 2013.
3. **van Wijngaarden E**. Lead Exposure, Adult Cognition, and Intermediate Pathways. Center for Human Health and the Environment, North Carolina State University. September 13, 2012.
4. **van Wijngaarden E**. Population-based Studies of Lead Exposure, Adult Cognition, and Intermediate Pathways. Institute of Public Health, Georgia State University. May 29, 2012.
5. **van Wijngaarden E**. Epidemiology, Public Health, and Sustainability. Multidisciplinary Perspectives on Sustainability, University Cluster in Interdisciplinary Studies (USIS) in Sustainability. University of Rochester. November 9, 2011.
6. **van Wijngaarden E**. Tips for a Successful Doctoral Student Career. Student Caucus Career Panel, SER 2010 Annual Meeting. Seattle, Washington, June 23-26, 2010.
7. **van Wijngaarden E**, Beck, C, Harrington D, Thurston SW, Myers GJ, Shamlaye CF, Strain JJ, Davidson PW. Beneficial Benchmark Concentrations for Ω-3 Long Chain Poly-Unsaturated Fatty Acids (LCPUFAs) Obtained from the Seychelles Child Development Nutrition Study. 22nd International Neurotoxicology Conference. Portland, OR, June 6-10, 2010.
8. Cory-Slechta DA, **van Wijngaarden E**. Lifetime Environmental Lead Exposure as a Risk Factor for Alzheimer's Disease. The Department of Environmental Medicine NIEHS Environmental Health Sciences Center Faculty Presentation Series, University of Rochester School of Medicine and Dentistry. May 7, 2009.
9. **van Wijngaarden E**. Epidemiology, Public Health, and Sustainability. Multidisciplinary Perspectives on Sustainability, University Cluster in Interdisciplinary Studies (USIS) in Sustainability. University of Rochester. March 18, 2009.

10. Hyman S, **van Wijngaarden E**. RTOI Webinar: Down Syndrome and Autism Screening: Diagnosis and Prevalence. Centers for Disease Control and Prevention and Association of University Centers on Disabilities. October 28, 2008.
11. **van Wijngaarden E**. Anatomy of Clinical Research Consulting. Rochester Clinical Research Curriculum, University of Rochester School of Medicine and Dentistry. Rochester, NY, October 7, 2008.
12. **van Wijngaarden E.** Potential Occupational Pesticide Exposure and Suicide Death: Findings from a Nationally Representative United States Cohort. 10th International Symposium on Neurobehavioral Methods and Effects in Environmental and Occupational Health. San Jose, Costa Rica, June 11-13, 2008.
13. **van Wijngaarden E.** Sensitivity Analysis and Meta-analysis of Published Epidemiologic Studies in Quantitative Risk Assessment: Methods and Challenges. Panel on Uncertainty in Epidemiologic Evaluations of Environmental and Occupational Exposures. 2008 Toxicology and Risk Assessment Conference. Cincinnati, OH, April 14-17, 2008.
14. **Van Wijngaarden E.** Residential radon exposure and lung cancer. First Annual Wyoming Cancer Control Conference. Casper, WY. 1998.

Presentations at National and International Meetings

1. Allen JG, McClean MD, Abdolahi A, **van Wijngaarden E**, Ganguly A, Bunin GR, Herrick RF. Rating paternal occupational exposure for a case-control study of the risk of childhood sporadic bilateral retinoblastoma. American Industrial Hygiene Conference & Exposition (AIHce), San Antonio, Texas, May 31 – June 5, 2014.
2. Olzenak D†, Nolan K, Hyman S, Fernandez D, **van Wijngaarden E**. A Theoretical Model to Evaluate the Impact of Motor Proficiency on Participation in Children with Autism Spectrum Disorder. American Physical Therapy Association (APTA) Combined Sections Meeting, Las Vegas, Nevada, February 3 – 6, 2014.
3. Olzenak DL†, Hyman SL, Davidson PW, Shamlaye CF, **van Wijngaarden E**. Motor Proficiency is Associated with Autism Spectrum Disorder Phenotypic Behavior. American Physical Therapy Association's Section on Pediatrics Annual Conference (SoPAC), Anaheim, CA, November 8 – 10, 2013.
4. Watson GE, **van Wijngaarden E** (session co-chairs). Health effects of mercury: the Seychelles Child Development Study perspective. The 11th International Conference on Mercury as a Global Pollutant (ICGMP), Edinburgh, Scotland, July 28 – August 2, 2013.
5. **Van Wijngaarden E**. Recent Seychelles Child Development Study findings: Pre- and postnatal exposure to MeHg and their association with developmental outcomes. The 11th International Conference on Mercury as a Global Pollutant (ICGMP), Edinburgh, Scotland, July 28 – August 2, 2013.
6. Concannon C, **van Wijngaarden E**, Stevens V, Thevenet-Morrison K, Dumyati G. The Effect of Multiple Concurrent Central Venous Catheters on Central Line Associated Bloodstream Infections. APIC 2013, 40th Annual Conference, Ft. Lauderdale, FL, June 8 -10, 2013.
7. Dumyati G, Thevenet-Morrison K, Rhee S, **van Wijngaarden E**. Identification of a potential target population for primary prevention of *C. difficile* infection through vaccination. IDWeek 2012 (TM). San Diego, CA, October 17-21, 2012.
8. Abdolahi A†, **van Wijngaarden E**, McClean MD, Herrick RF, Allen JG, Ganguly A, Bunin G. Paternal occupational exposures and the risk of childhood sporadic bilateral retinoblastoma. American College of Epidemiology (ACE) Annual Meeting. Chicago, IL, September 8-11, 2012.
9. **Session Chair**: Seychelles Special Session. The 24th Conference of the International Society for Environmental Epidemiology (ISEE). Columbia, SC, August 26-30, 2012. (oral presentation)
10. Watson G, Love T, Harrington D, **van Wijngaarden E**, McSorley E, Wallace, J, Bonham M, Mulhern M, McAfee A, Shamlaye C, Strain S, Davidson P, Myers GJ. Neurodevelopmental outcomes at 5 years in children exposed to maternal dental amalgam: The Seychelles Child Development Nutrition Study. The 24th

Conference of the International Society for Environmental Epidemiology (ISEE). Columbia, SC, August 26-30, 2012. (oral presentation)

11. **Van Wijngaarden E**, Harrington D, Kobrosly R, Thurston S, O-Hara T, McSorley E, Wallace J, Bonham M, Myers G, Watson G, Shamlaye C, Strain JJ, Davidson P. Prenatal exposure to mercury and LCPUFA in relation to birth weight in the Seychelles Child Development Nutrition Study. The 24th Conference of the International Society for Environmental Epidemiology (ISEE). Columbia, SC, August 26-30, 2012. (oral presentation)
12. **Van Wijngaarden E**, Beck C, Myers GJ, Harrington D, Thurston S, Shamlaye C, Strain JJ, Davidson P. Estimating benchmark concentrations for nutrients in fish: The example of n-3 long chain poly-unsaturated fatty acids (LCPUFA). The 24th Conference of the International Society for Environmental Epidemiology (ISEE). Columbia, SC, August 26-30, 2012. (oral presentation)
13. Mulhern MS, Broberg K, McAfee A, Laird E, Wallace JMW, McSorley EM, Myers GJ, Davidson PW, Thurston SW, Shamlaye CF, Watson GE, **van Wijngaarden E**, Strain JJ. Vitamin D status is a predictor of telomere length during pregnancy. The Nutrition Society Summer Meeting 2012. Belfast, UK, July 16-19, 2012.
14. McAfee AJ, Mulhern MS, Broberg K, Li H, Thurston SW, Wallace JWM, McSorley EM, Shamlaye CF, Watson GE, Myers GJ, **van Wijngaarden E**, Clarkson TW, Davidson PW, Strain JJ. Associations between maternal PUFA status, MeHg exposure and telomere length in Seychellois mothers and children. 10th Congress of the International Society for the Study of Fatty Acids & Lipids (ISSFAL). Vancouver, BC, May 26-30, 2012.
15. McAfee AJ, Mulhern MS, Ueland PM, McSorley EM, Wallace JMW, Watson GE, Myers GJ, **van Wijngaarden E**, Shamlaye CF, Davidson PW, Strain JJ. Plasma total cysteine is a determinant of adiposity in healthy adolescents living in the Republic of Seychelles. 10th Congress of the International Society for the Study of Fatty Acids & Lipids (ISSFAL). Vancouver, BC, May 26-30, 2012.
16. Mulhern MS, McAfee AJ, Watson GE, Myers GJ, **van Wijngaarden E**, McSorley EM, Wallace JMW, Shamlaye CF, Clarkson TW, Davidson PW, Strain JJ. LCPUFA status and body composition in 5 year olds and 19-20 year olds living in the Republic of Seychelles. 10th Congress of the International Society for the Study of Fatty Acids & Lipids (ISSFAL). Vancouver, BC, May 26-30, 2012.
17. **Session Chair**: Mercury and Nutrients. 27th International Neurotoxicology Conference. Research Triangle Park, NC, October 30-November 2, 2011 (oral presentation).
18. **van Wijngaarden E**, Myers GJ, Stokes-Riner A, Watson G, Zareba G, Thurston SW, McSorley E, Wallace J, Bonham M, Shamlaye CF, Strain JJ, Hong C, Ralston NVC, Jones R, Davidson PW. Maternal Selenium Status in Relation to Child Development at 9 and 20 Months in the Seychelles Child Development Nutrition Study. 27th International Neurotoxicology Conference. Research Triangle Park, NC, October 30-November 2, 2011 (oral presentation).
19. **van Wijngaarden E**, Thurston SW, Myers GJ, Strain JJ, Weiss B, Zarcone T, Watson G, Zareba G, McSorley E, Wallace J, Mulhern M, McAfee A, Shamlaye CF, Davidson PW. Prenatal Methyl Mercury Exposure in Relation to Psychological and Behavioral Endpoints at 19 years from the Seychelles Child Development Study Main Cohort. 27th International Neurotoxicology Conference. Research Triangle Park, NC, October 30-November 2, 2011.
20. **van Wijngaarden E**, Mlynarek S, Thevenet-Morrison K, Bunin GR. Parental Occupational Exposure to Pesticides and Childhood Brain Tumor Risk. Third Congress of Epidemiology. Montreal, Canada, June 21-24, 2011 (oral presentation).
21. Stevens V[†], **van Wijngaarden E**. Ignoring Variability in Timing of Drug Administration Attenuates Hazard Ratios. Third Congress of Epidemiology. Montreal, Canada, June 21-24, 2011.
22. Hoffmire C[†], Block RC, Thevenet-Morrison K, **van Wijngaarden E**. Associations between fish consumption and severity of depressive symptoms. Third Congress of Epidemiology. Montreal, Canada, June 21-24, 2011.

23. Stevens V, Dumyati G, Brown J, **van Wijngaarden E**. Differential Risk of Clostridium Difficile Infection with Proton Pump Inhibitor Use by Level of Antibiotic Exposure. 21st European Congress of Clinical Microbiology and Infectious Diseases and the 27th International Congress of Chemotherapy. Milan, Italy, May 7-10, 2011.
24. Knopf JK, Gordetsky J, **van Wijngaarden E**, O'Brien J. The Relationship between Vitamin D and Testosterone Values in Men Referred for Infertility. American Urological Association Annual Meeting. Washington, DC, May 14-19, 2011.
25. Dumyati G, Concannon C, **van Wijngaarden E**, Shelly M. The Role of Nurses in Reducing Central Line Associated Bloodstream Infections Outside the ICU: A Multihospital Education Intervention. Annual Scientific Meeting, Society for Healthcare Epidemiology of America. Dallas, TX, April 1-4, 2011.
26. Simning A†, **van Wijngaarden E**, Conwell Y. Correlates of Mental Healthcare Need and Service Utilization in Urban Older Adults. American Association for Geriatric Psychiatry's 2011 Annual Meeting. San Antonio, TX, March 18-21, 2011.
27. Cory-Slechta DA, Merchant-Borna K, **van Wijngaarden E**. Lead and Childhood Cognitive Deficits: Exploring the Role of Gender and Social Stress. 50th Annual Meeting of the Society of Toxicology. Washington, DC, March 6-10, 2011.
28. Simning A†, **van Wijngaarden E**, Conwell Y. Overcoming Recruitment Challenges in Older Adult Public Housing Residents: Lessons Learned. The Gerontological Society of America's 63rd Annual Scientific Meeting. New Orleans, LA, November 19-23, 2010.
29. **van Wijngaarden E**, Thevenet-Morrison K, Beseler CL, Stallones L. Environmental Pesticide Levels in relation to Depression in a Population-Based Sample of Adults. American Public Health Association 138th Annual Meeting and Exposition. Denver, CO, November 6-10, 2010 (oral presentation).
30. Stevens V†, Dumyati G, Fisher SG, Fine L, **van Wijngaarden E**. Time-Varying Antibiotic Exposure and Risk of *Clostridium difficile* Infection (CDI). 26th International Conference on Pharmacoepidemiology & Theraputic Risk Management. Brighton, UK, August 19-22, 2010 (oral presentation).
31. **van Wijngaarden E**, Winters P. Blood Lead Levels in Relation to Cognitive Function in Older U.S. Adults. SER 2010 Annual Meeting. Seattle, WA, June 23-26, 2010.
32. **van Wijngaarden E**, Beck C, Harrington D, Thurston SW, Myers GJ, Shamlaye CF, Strain JJ, Davidson PW. Beneficial Benchmark Concentrations for n-3 Long Chain Poly-Unsaturated Fatty Acids (LCPUFAs) obtained from the Seychelles Child Development Nutrition Study. 26th International Neurotoxicology Conference. Portland, OR, June 6-10, 2010 (oral presentation).
33. Kuschner ES, Hyman S, **van Wijngaarden E**, Magyar CI, Sulkes SB, Diehl A, Roizen NJ, Druschel CM. Screening for Autism Spectrum Disorders in Children with Down Syndrome in New York State. Annual International Meeting For Autism Research (IMFAR). Philadelphia, PA, May 20-22, 2010.
34. Eisenberg K†, **van Wijngaarden E**, Fisher SG, Korfmacher KS, Campbell JR, Fernandez ID, Cochran J, Geltman PL. Increases in Blood Lead Levels among Refugee Children after Resettlement in Massachusetts, 2000-2007. Pediatric Academic Societies' Annual Meeting. Vancouver, BC, May 1-4, 2010.
35. Eisenberg K†, **van Wijngaarden E**, Cochran J, Geltman PL. Epidemiology of Blood Lead Levels among Refugee Children in Six US States. Pediatric Academic Societies' Annual Meeting. Vancouver, BC, May 1-4, 2010.
36. Gilboa S, Correa A, Desrosiers T, Langlois P, Lawson C, Riehle-Colarusso T, Stewart P, **van Wijngaarden E**, Waters M, and the National Birth Defects Prevention Study. Maternal Occupational Exposure to Organic Solvents and Congenital Heart Defects: Preliminary Results from the National Birth Defects Prevention Study, 1997-2002. National Birth Defects Prevention Network Annual Meeting. National Harbor , MD, March 8-9, 2010.

37. **van Wijngaarden E**, Campbell JR, Cory-Slechta DA. Bone lead levels are associated with measures of memory impairment in older adults. Society for Epidemiologic Research (SER) Annual Meeting. Anaheim, CA, June 23-26, 2009 (oral presentation).
38. Gordetsky JB, **van Wijngaarden E**, O'Brien J. Redefining abnormal FSH in the male infertility population. American Urological Association Annual Meeting. Chicaco IL, April 25-30, 2009 (oral presentation).
39. Hendren S, Winters P, **van Wijngaarden E**. Risk factors for rectal prolapse hospitalization in the United States. American College of Surgeons Clinical Congress 2008. San Francisco, CA, October 15, 2008.
40. Marshall J, Cardin A, Cambio A, Brassachio R, Strang J, Joseph J, **van Wijngaarden E**, Messing EM. Investigating the Effects of Androgen Deprivation Therapy (ADT) on Prostate Brachytherapy 60th American Urological Association Northeastern Section Annual Meeting. Santa Ana Pueblo, NM, September 17-21, 2008.
41. Hyman S, Sulkes SB, Magyar CI, **van Wijngaarden E**, Rodgers L, Nagel S, Diehl A, Roizen N. Down syndrome, regression, and autism spectrum disorders. 7th Annual International Meeting For Autism Research (IMFAR). London, United Kingdom, May 15-17, 2008.
42. Moore V†, **van Wijngaarden E**, Dumyati G. Impact of dialysis on mortality hospital-onset and community-onset healthcare-associated *Staphylococcus aureus* (HA-MRSA). 18th Annual Scientific Meeting, Society for Healthcare Epidemiology of America (SHEA). Los Angeles, CA, April 5-8, 2008.
43. Ringholz C†, Fernandez ID, **van Wijngaarden E**, Treanor JJ, Falsey AR, Steiner CA, Miller MA, Simonsen L, Viboud C. Spatial and Temporal Heterogeneity in Hospitalizations Associated with Influenza and Respiratory Syncytial Virus (RSV) in 10 US States, 1989-2003. 6th Options for the Control of Influenza conference. Toronto, Canada, June 17-22, 2007.
44. **Van Wijngaarden E**, Palapattu GS. Prostate-specific antigen levels in relation to cadmium exposure and zinc intake: Results from the 2001-2002 National Health and Examination Nutrition Survey. American Urological Association Annual Meeting. Anaheim, CA, May 19-24, 2007 (oral presentation)
45. Kelly JL†, Friedberg JW, Calvi LM, **van Wijngaarden E**, Fisher SG. Vitamin D insufficiency in patients with newly diagnosed lymphoma. American Association for Cancer Research (AACR) Annual Meeting. Los Angeles, CA, April 14-18, 2007.
46. **Van Wijngaarden E**, Dosemeci M. Brain cancer mortality and potential occupational exposure to lead: Findings from the National Longitudinal Mortality Study, 1979-1989. Second North American Congress of Epidemiology, Seattle, WA, June 21-24, 2006.
47. Mundt DJ, **van Wijngaarden E**, Mundt KA. An assessment of confounding in epidemiological studies of lung cancer among roofers. Health Effects of Occupational Exposure to Emissions from Asphalt/Bitumen Symposium. Dresden, Germany, June 7-8, 2006. (oral presentation)
48. Stahlhut R†, **van Wijngaarden E**, Dye T, Swan S. Phthalates, abdominal fat, and insulin resistance in U.S. adult males. 2006 Gordon Research Conference on Environmental Endocrine Disruptors. Il Ciocci, Barga, Italy, June 4-9, 2006.
49. Jandzinski D†, **van Wijngaarden E**, Dogra V, Rubens D, Conde A. Comparison of Volume Acquisition Mode (Cine Loop) Versus Standard 2D Gray Scale Imaging of Kidneys - Preliminary Results. 106th Annual Meeting of the Annual Roentgen Ray Society. Vancouver, BC, April 30-May 5, 2006; and 2006 AIUM Annual Convention. Washington, DC, March 23-26, 2006.
50. Rao P†, Joseph B, **van Wijngaarden E**, Ramesh S. Assessing Underlying Reasons for High Postpartum Attrition Rates among Women Workers in Apparel in Manufacturing Factories in Bangalore, India. 15th Annual Global Health Education Consortium (GHEC) Conference, Crossroads in Global Health: the Dual Challenge of Infectious and Chronic Diseases. Toronto, Canada, April 19-21, 2006.

51. **Van Wijngaarden E**, Beck C, Davidson PW, Myers GJ. Benchmark concentrations for methyl mercury obtained from the 9-year follow-up of the Seychelles Child Development Study. 22nd International Neurotoxicology Conference (NTX XXII). Research Triangle Park, NC, September 11-14, 2005.
52. Conde A, **van Wijngaarden E**, Fernandez D, Puri S, Nabi HA. The Importance of Heterogeneity in the Assessment of Positron Emission Tomography in the Diagnosis, Staging and Restaging of Head and Neck Cancers. 52nd Annual Meeting, Society of Nuclear Medicine. Toronto, Canada, June 18-22, 2005.
53. Dumyati G, **van Wijngaarden E**, Greene L, Sposato K. Risk factors for MRSA infection post hip fracture and prosthetic hip replacement. 15th Annual Scientific Meeting, Society for Healthcare Epidemiology of America. Los Angeles, CA, April 9-12, 2005.
54. **Van Wijngaarden E**, Richardson DB. A graphical method to evaluate exposure-response relationships for sparse data. The 16th Conference of the International Society for Environmental Epidemiology (ISEE). New York, NY, August 1-4, 2004. (oral presentation)
55. Birk T, Tarabcáková D, Kešeláková S, Gajdošová D, Gaidoš O, **van Wijngaarden E**, Mundt K. PAHs and cancer: Planning an epidemiological study in the Slovak Republic. X2004: Exposure assessment in a changing environment. Utrecht, The Netherlands, June 16-18, 2004.
56. **Van Wijngaarden E**, Mundt KA, Luippold RS. Evaluation of the exposure-response relationship of lung cancer mortality and occupational exposure to hexavalent chromium based on published epidemiological data. Non-linear Dose-response Relationships in Biology, Toxicology and Medicine, Amherst, Massachusetts, May 28-30, 2003.
57. Dell LD, **van Wijngaarden E**, Mundt KA, Luippold RS. Latency analysis of angiosarcoma of the liver deaths among men employed in the North America vinyl chloride industry. EPICOH, Barcelona, Spain, September 11-13, 2002. (*La Medicina del Lavoro* 2002;93(5):433-4).
58. **Van Wijngaarden E,** Savitz DA, Kleckner RC, Kavet R, Loomis D. Mortality patterns by occupation in a cohort of electric utility workers. Congress of Epidemiology, Toronto, Canada, June 13-16, 2001 (*American Journal of Epidemiology* 2001;153(11):S77).

†Mentee

Teaching Activities

Undergraduate Program Teaching and Advising

2009 – present **Director**, Concepts of Epidemiology (PH 103), School of Arts and Sciences, University of Rochester, NY (annual undergraduate-level course)

2010 – present Independent Studies (PH 391), School of Arts and Sciences, University of Rochester, NY (4 credits unless otherwise noted):

Spring 2010:	Sahay KM, Peters N
Fall 2010:	Tarantine C
Spring 2011:	Sellstrom P, Attitso K, Coignet M, Cohen P (2 credits), Bhatia R, Williams A, Link S, Gizaw M, Plaisime M
Fall 2011:	Difilippo L, Anugu M
Fall 2012:	Oladeru O, Kruszka B
Spring 2013:	Oladeru O
Fall 2013:	Dziwis J, Grewal J
Spring 2014:	Grewal J, Amidon A, Suter M

2009 – present Advisor, Epidemiology major, Undergraduate Public Health-related Programs, University of Rochester, NY

2010 – 2012 Faculty Sponsor, European Health Sciences Internship Program (CAS 397), University of Rochester, NY (review students' application essays and internship journals on rolling basis)

Graduate Program Teaching

Instructor or Co-instructor

2013 – present **Director**, Scientific Writing for Epidemiologists (PM 494). Department of Public Health Sciences, University of Rochester School of Medicine and Dentistry, NY (annual graduate-level course)

2013 – present **Director**, Principles of Epidemiology (PM 415). Department of Public Health Sciences, University of Rochester School of Medicine and Dentistry, NY (annual graduate-level course)

2005 – present **Director**, Field Epidemiology (PM 413), Department of Public Health Sciences, University of Rochester School of Medicine and Dentistry, NY (annual graduate-level course; taught in 2005-2011)

2008 – present Co-Instructor, Biochemical Toxicology (TOX 521), Department of Environmental Medicine, University of Rochester School of Medicine and Dentistry, NY (annual graduate-level course; taught in 2008-2010)

2011, 2013 Co-instructor, History of Epidemiology (PM 414). Department of Public Health Sciences, University of Rochester School of Medicine and Dentistry, NY (bi-annual graduate-level course; taught in 2011)

2011 – 2013 **Co-Director**, Environmental and Occupational Epidemiology (PM 470), Department of Public Health Sciences, University of Rochester School of Medicine and Dentistry, NY (annual graduate-level course; taught in 2011-2013)

2008, 2010 **Director**, Toxicology in the Workplace Environment (TOX 493), Department of Environmental Medicine, University of Rochester School of Medicine and Dentistry, NY (bi-annual graduate-level course, taught in 2008 and 2010)

2006 – 2010 **Director** (Co-Director in 2006), Multivariate Models for Epidemiology (PM 469), Department of Community and Preventive Medicine, University of Rochester School of Medicine and Dentistry, NY (annual graduate-level course; taught in 2006-2010)

2005 Co-instructor, Practical Skills in Grant Writing (PM 438), Department of Community and Preventive Medicine, University of Rochester School of Medicine and Dentistry, NY (annual graduate-level course; taught in 2005)

2004 – 2007 Co-instructor, Principles of Epidemiology (PM 415), Department of Community and Preventive Medicine, University of Rochester School of Medicine and Dentistry, NY (annual graduate-level course; taught in 2004-2007)

Guest lecturer or Teaching Assistant

2014 Guest Lecturer, Environmental and Occupational Epidemiology (PM 470), Department of Public Health Sciences, University of Rochester School of Medicine and Dentistry, NY

2011 – present Guest Lecturer, Multivariate Models for Epidemiology, Department of Community and Preventive Medicine, University of Rochester School of Medicine and Dentistry, NY

2010 Guest Lecturer, Medical Ecology, Department of Community and Preventive Medicine, University of Rochester School of Medicine and Dentistry, NY

2008 Guest Lecturer, Epidemiologic Methods, Department of Community and Preventive Medicine, University of Rochester School of Medicine and Dentistry, NY

2007 – 2008 Guest Lecturer, Medical Ecology, Department of Community and Preventive Medicine, University of Rochester School of Medicine and Dentistry, NY
2006 – 2013 Guest Lecturer, Molecular Epidemiology, Department of Community and Preventive Medicine, University of Rochester School of Medicine and Dentistry, NY
2006 Guest Lecturer, Recruitment and Retention of Human Subjects into Clinical Trials, Department of Community and Preventive Medicine, University of Rochester School of Medicine and Dentistry, NY
2003, 2004 Guest Lecturer, Advanced Occupational and Environmental Epidemiology, Department of Epidemiology, State University of New York at Albany
2003 Guest Lecturer, Epidemiology Graduate Seminar, Department of Epidemiology, University of Massachusetts at Amherst
2003 Guest Lecturer, Environmental Health Sciences Graduate Seminar, Department of Environmental Health Sciences, University of Massachusetts at Amherst
2001 Teaching Assistant, Fundamentals of Epidemiology, Community Driven Research for Environmental Justice, and Epidemiology Doctoral Seminar, Department of Epidemiology, University of North Carolina at Chapel Hill

Medical Education Courses

2008 Guest Lecturer, Faculty Lecture/Resident Review, Department of Urology, University of Rochester School of Medicine and Dentistry, NY
2007 Co-Director, Mastering Medical Information, Year 1
2007 Tutor, Ambulatory Clerkship Journal Club, Year 2
2007 Guest Lecturer, Oral Epidemiology, Eastman Department of Dentistry, University of Rochester School of Medicine and Dentistry, NY

Research Mentoring: Faculty Career Development

2013 – present Allen J. Research Assistant Professor, Department of Environmental Medicine, University of Rochester School of Medicine and Dentistry (primary mentor as part of K12 BIRCWH program)
2013 – present Jusko TA. Assistant Professor, Division of Epidemiology, Department of Public Health Sciences, University of Rochester School of Medicine and Dentistry (primary mentor as part of K12 BIRCWH program)
2009 – present Mian A. Associate Professor, Pediatric Nephrology, Department of Pediatrics, University of Rochester School of Medicine and Dentistry (co-mentor)
2009 – 2011 UR CTSI KL2 Scholar award, Felhazy M. "Identification of salivary and salivary gland-cell-surface biomarkers in patients with early-stage primary Sjögren's syndrome" (co-mentor)
2007 – 2012 5 K23 DE017230, Kopycka-Kedzierawski D. "Utility of teledentistry to reduce oral disease burden in preschool children" (consultant)

Research Mentoring: Doctoral Dissertations (chair for 10 committees)

1. Herr M (in progress). Antidepressant Use and Risk of Brain Metastases. (Epidemiology, committee member)
2. Olzenak D (in progress). The Association between Motor Proficiency and Participation in School-aged Children with Autism Spectrum Disorder. (Epidemiology, **committee chair**)
3. Wasserman E (in progress). Epidemiology and Correlates of Self-Reported Academic Dysfunction Following a Concussion in High School and College Students. (Epidemiology, **committee chair**)

4. Abdolahi A (in progress). Insular Cortex Damage from Stroke and Possible Disruption of Nicotine Dependence: The MINDS Study. (Epidemiology, **committee chair**)
5. Evans K (2013). Extensions to Model-Based Clustering on Mixed-Type Data: Incorporation of Zero-Augmented Variables, Variable Selection, and Outlier Identification. (Biostatistics, committee member)
6. Parlett L (2013; currently Senior Research Data Analyst, Department of Epidemiology, Johns Hopkins University Bloomberg School of Public Health). The Association of Prenatal and Infant Phthalate Exposure and Childhood Asthma Symptoms. (Epidemiology, **committee chair**)
7. Kobrosly R (2012; currently Post-Doctoral fellow, Mount Sinai School of Medicine). An Epidemiologic Investigation into the Relationship between Stress, Allostatic Load, and Depressive Disorder among Older Adults. (Epidemiology, **committee chair**)
8. Shankar J (2012). Estrogenic Immunomodulation and Breast Cancer Aggressiveness. (Epidemiology, committee member)
9. Hoffmire C (2012; currently Health Science Specialist at the Center of Excellence, Veteran's Administration Medical Center, Canandaigua, NY). Examination of Sleep Disturbances in Children with Down Syndrome and Multiple Comorbidities in New York State. (Epidemiology, **committee chair**)
10. Simning A (2011; currently Psychiatry resident). Anxiety and Depression among Elderly Public Housing High-Rise Residents. (Epidemiology, **committee chair**)
11. Lynch M (2010). Estimation, Correlation Analysis and Identifiability in Finite Mixture Models for Point Mass Data: Methods in a Bayesian Framework. (Biostatistics, committee member)
12. Scosyrev E (2010). Prognostic Role of Squamous Differentiation in Resectable Muscle-Invasive Urothelial Carcinoma of the Bladder Treated with Cystectomy. (Epidemiology, committee member)
13. Stevens VW (2010; currently Research Assistant Professor, Pharmacotherapy Outcomes Research Center, University of Utah College of Pharmacy). Antibiotic Exposure and Risk of Clostridium difficile-Associated Disease: A Retrospective Cohort Study. (Epidemiology, **committee chair**)
14. Elder JL (2009; currently Instructor, The Winifred Masterson Burke Medical Research Institute, Inc.). Assessing the Value of Female-Specific SPECT Parameters to Predict Cardiac Outcomes in Women with Suspected Ischemia. (Epidemiology, **committee chair**)
15. Eisenberg K (2009; currently resident in Family Medicine, University of Rochester School of Medicine and Dentistry). Lead Exposure in Refugee Children in the U.S. (Epidemiology, **committee chair**)
16. Kelly J (2008). Role of Vitamin D in Etiology of Lymphoma. (Epidemiology, committee member)
17. Ringholz C (2008). Characterizing Spatial Heterogeneity and Time Trends among Influenza-Related Hospitalizations and Viral Activity in US States. (Epidemiology, committee member)

<u>Research Mentoring: Masters Theses</u> (chair for 27 committees)

1. Wong C (in progress). The Effect of Fluoride Varnish on the Recurrence of Dental Caries in Children with High Caries Risk. (**committee chair**)
2. Gill CA (2014). Phthalate Exposure via Consumption of Animal Proteins in Reproductive-Aged Women. (**committee chair**)
3. Johnson J (2014). Autism Spectrum Disorders, Months of Gestation, and Stratification Amongst Specific Phenotypes of Autism. (**committee chair**)
4. Holt D (2013). The Relationship between CAG Repeat Length and Clinical Progression in Huntington's Disease: A Secondary Data Analysis of the COHORT De-identified Database. (**committee chair**)
5. Work D (2013). Microalbuminuria and Chronic Kidney Disease in Children. (committee member)
6. Janelsins M (2013). The Relationship between NSAIDs and Cognitive Function among Cancer Patients. (committee member)

7. Concannon C (2013). Central Line Associated Bloodstream Infections: The Effect of Multiple Concurrent Central Lines. (**committee chair**)
8. Tahir N (2012). A Multi-Country Analysis of the Characteristics Associated with Undiagnosed Depression. (committee member)
9. Abbasi A (2012). Pyloric Stenosis: A Cost-Effectiveness Analysis of Medical versus Surgical Treatment. (committee member)
10. Kondabolu S (2012). Comparison of Concussion Incidence in High School Contact and Collision Sports: Perspectives on Concussion Surveillance and Prevention. (**committee chair**)
11. Augustine A (2011). Environmental Tobacco Smoke Exposure is Associated with Reduced Adiponectin Levels in Pre-pubescent Children. (**committee co-chair**)
12. Miller T (2011). The Northeast Rochester Youth and Family Wellness Project: An Evaluation of the "Second Step©" Violence Prevention Program. (committee member)
13. Thomas O (2011). Long-term Effects of Radiation Therapy and Anthracycline Chemotherapy on Cardiac Function and Perfusion Changes in Survivors of Hodgkin Lymphoma and Non-Hodgkin Lymphoma. (committee member)
14. Goldman ML (2010). Burn Education in an Emergency Care Setting. (**committee chair**)
15. Chapman BP (2010). Statistical Learning Analysis of Personality, Education, and Interleukin-6 Over 8 Months in Older Persons (**committee chair**)
16. Bishop C (2010). Association between Methyl Mercury Levels and Atopy in the General US Population. (**committee chair**)
17. Olden A (2010). Palliative Care Needs and Symptom Patterns of Hospitalized Elders Referred for Consultation. (**committee chair**)
18. Smith R (2010). Predictive Factors For Acute Otitis Media: Colonization And Immunity In A Cohort Of Children. (**committee chair**)
19. Gromer K (2010). Adolescent Sexual Risk Behaviors: Does Sport Type Play a Role? (committee member)
20. Khan A (2010). Metabolic Syndrome and Diet in Middle Aged and Elderly Population. (**committee chair**)
21. Fogg T (2009). Relationships between acculturation strategy and the risk of suicidal behavior in deaf individuals (**committee chair**)
22. Panzer AM (2009). Does Breastfeeding Improve Health Outcomes in Preterm Infants? (committee member)
23. Abayon M (2009). Diabetes and Dental Caries Prevalence: Is There an Association? (**committee chair**)
24. Strutz KL (2009). Rural Residence and Perinatal Health in the Finger Lakes Region. (committee member)
25. Fagnano M (2008). Sleep Disordered Breathing and Behaviors of Inner-City Children with Asthma. (**committee chair**)
26. Beiswenger T (2008). Insights and Initiatives for Injury Prevention in Intercollegiate Athletics: Comparative analysis of Rochester collegiate injury surveillance to the NCAA ISS. (**committee chair**)
27. Maupin GM (2008). Association Between Obesity and *Toxoplasma* Infection. (**committee chair**)
28. Songdej N (2008). Blood Lead Levels in Relation to Inflammation: Investigation of the 1999-2004 National Health and Nutrition Examination Survey. (**committee chair**)
29. Crittenden CN (2007). Parenting Styles in Mothers of Two Year Olds With and Without Asthma. (**committee chair**)
30. Carwile JL (2007). Blood lead levels and thyroid function. (**committee chair**)
31. Cooper AR (2007). Electromagnetic field exposure and risk for cardiovascular diseases: A cohort mortality study. (**committee chair**)
32. Stahlhut R (2007). Concentrations of urinary phthalate metabolites are associated with increased waist circumference and insulin resistance in adult U.S. males. (**committee chair**)

33. Carlson P (2006). An analysis of the Medical Expenditure Panel Survey: Impact of health care provider counseling on dental visits by children 2-3 years of age. (**committee chair**)
34. Delemichael A (2006). Is left ventricular concentric remodeling an independent predictor of cardiovascular morbidity in African Americans? The Atherosclerosis Risk in Communities (ARIC) study. (committee member)
35. Glassman M (2006). ICD efficacy by age in the MADIT II study population. (**committee chair**)
36. Gomez PM (2006). Knowledge and Risk of Osteoporosis in Female Dental Patients. (committee member)
37. Jandzinksi D (2006). Comparison of Volume Acquisition Mode (Cine Loop) versus standard 2D gray scale imaging of the kidneys. (**committee chair**)
38. Mener DJ (2006). Trauma Patients in the Prehospital Environment: How well do Emergency Medical Service Personnel's Assessments Agree with the Trauma Triage Protocols? (committee member)
39. Thomas-Taylor D (2006). In children with known exposure to domestic violence, to what extent is it documented in their ambulatory medical charts? (committee member)
40. Conde A (2005). Meta-analysis PET vs. CT in the detection, staging and restaging of head and neck cancers with histopathological confirmation. (committee member)
41. Elder J (2005). Descriptive analysis of Pertussis in the Finger Lakes Region. (**committee chair**)

Research Mentoring: Medical Students

1. Golub N (2008). Lead and Depression in the 1999-2004 National Health and Nutrition Examination Survey (NHANES).
2. Simning A (2006-2007). Literature review of cancer mortality and incidence among dentists.
3. Rao P (2005-2008). Assessing Underlying Reasons for High Postpartum Attrition Rates among Women Workers in Apparel Manufacturing Factories in Bangalore, India.
4. Sharplin C, Li L (2005). What do Women Want? A Survey of Chinese Women Receiving Family Planning Services.

Service

Institutional

2014	Reviewer, University of Rochester School of Medicine & Dentistry (SMD) Strategic Plan Pilot Award Program, Pilot Award Applications for the Prevention Program of Excellence
2013 – present	Member, Policy Committee, Environmental Health Sciences Center, University of Rochester School of Medicine and Dentistry
2011 – present	Member, Medical Scientist Training Program (MSTP) Admissions Committee, University of Rochester School of Medicine and Dentistry
2011	Convocation Awards Committee, University of Rochester School of Medicine and Dentistry
2009 – present	Member, Steering Committee, Undergraduate Public Health-related Programs, University of Rochester, Rochester, New York
2007 – present	Education Policy Group, Department of Public Health Sciences (formerly Community and Preventive Medicine), University of Rochester School of Medicine and Dentistry
2008 – 2011	Member, Search Committee for Chair of the Department of Biostatistics and Computational Biology, University of Rochester School of Medicine and Dentistry
2007 – 2010	Disparities in Oral Health Care Strategic Planning Group, Eastman Department of Dentistry, University of Rochester School of Medicine and Dentistry

2006 – 2009	Member, Search Committee for the Chair of the Division of Community Dentistry and Oral Disease Prevention, Eastman Department of Dentistry, University of Rochester School of Medicine and Dentistry
2006 – 2009	Integrated Health Sciences Facility Core Working Group, Environmental Health Sciences Center, University of Rochester School of Medicine and Dentistry
2006	Mission, Goals and Objectives Committee, Master of Public Health Program, Department of Community and Preventive Medicine, University of Rochester School of Medicine and Dentistry

Professional

2013	External Peer Reviewer, Academic Promotion Package, University of California, Davis
2013	Reviewer, NIH Study Section (National Cancer Institute), ZRG1 PSE-Q (02), Special Emphasis Panel, Epidemiology and Genetics of Cancer; February 28, 2012.
2013, 2014	Abstract Reviewer, Society for Epidemiologic Research, Annual Meeting
2012	Reviewer, NIH Study Section (National Institute of Environmental Health Sciences), ZES1 LKB-K (P0), Children's Environmental Health and Disease Prevention Research Centers, Baltimore, MD; November 6-8, 2012.
2012	Invited Participant, Environmental Exposures to Nickel and Its Relationship to Disease: Respiratory Disease, Asthma, and Cardiovascular Toxicity. ENVIRON, Washington, DC; October 25-26, 2012.
2012	Invited Participant, HESI Emerging Issue Workshop: Evaluating Causality in Epidemiology. ILSI Health and Environmental Sciences Institute. Research Triangle Park, NC; October 22-23, 2012.
2012	External Reviewer of the Cancer Pathology and Prevention PhD program, Roswell Park Cancer Institute Graduate Division, Roswell Park Cancer Institute, Buffalo, NY, October 15-16, 2012.
2012, 2013	Abstract Reviewer, American College of Epidemiology, Annual Meeting
2011	Member, Mercury Review Panel, Science Advisory Board, U.S. Environmental Protection Agency
2011	External Peer Reviewer, Academic Tenure Package, College of Public Health and Human Sciences, Oregon State University
2011	Abstract Reviewer, "Occupational" category, 3rd North American Congress of Epidemiology
2010 – present	Member, Publications Committee, American College of Epidemiology
2010 – present	Associate Editor, NeuroToxicology
2009 – present	Editorial Board, International Archives of Occupational and Environmental Health
2009	Scientist Reviewer, NIOSH NORA Peer Review, Panel C--Epidemiology and Surveillance, FY2010
2009	External peer reviewer of the NIOSH Criteria Document Update: Occupational Exposure to Hexavalent Chromium (NIOSH Docket Number 144)
2008 – present	Editorial board, The Open Prostate Cancer Journal
2004 – present	Member, Committee on Access to Pesticide Registry and Pesticide Application Information, Health Research Science Board, Department of Health, State of New York
2004 – present	Editorial board, Dose-Response
2002 – present	*Ad Hoc* external reviewer for Agency for Toxic Substances and Disease Registry, Centers for Disease Control and National Institute for Occupational Safety and Health, Centers for Disease Control (6 requests)
2000 – present	*Ad Hoc* Peer Reviewer for the following journals (those with multiple requests are *italicized*): Acta Neurologica Scandinavica; *American Journal of Epidemiology;*

Annals of Epidemiology;
American Journal of Industrial Medicine;
Bioelectromagnetics;
BMC Public Health;
British Journal of Cancer;
Cancer Causes & Control;
Cancer Epidemiology, Biomarkers and Prevention;
Critical Reviews in Toxicology;
Environmental Health Perspectives;
Environment International;
Environmental Research;
Epidemiology;
Health & Place;
International Archives of Occupational and Environmental Health;
International Journal of Cancer;
Journal of Occupational and Environmental Hygiene;
Journal of Occupational Medicine and Toxicology;
Journal of Toxicology;
Journal of Toxicology and Environmental Health;
Leukemia Research;
Neurology;
NeuroToxicology;
Neurotoxicology and Teratology;
Nonlinearity in Toxicology, Biology, and Medicine;
Occupational and Environmental Medicine;
Proceedings of the Royal Society B (Biological Sciences)
Regulatory Toxicology and Pharmacology;
Science of the Total Environment;
World Journal of Pediatrics

Community

2011 – present Head coach (2011-2012, U9), Assistant Coach (2012-present, U10 and U11), Penfield Strikers Girls Soccer Club

2013 – present Board member and Field Coordinator, Penfield Strikers Girls Soccer Club

GEORGE L. VAN HOUTVEN

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Education

PhD, Economics, University of Maryland, College Park, Maryland, 1993.
BA, Economics, Johns Hopkins University, Baltimore, Maryland, 1985.

Selected Project Experience

National Ecosystem Services Classification System (NESCS) (2011 to date)—*Project Supervisor*. For EPA's Office of Water (OW) and Office of Research and Development (ORD), conducting study to develop a classification framework that supports comprehensive accounting of ecosystem service flows to the market and nonmarket sectors of the economy. Adapting and applying concepts from existing national income accounting and economic classification systems to identify and classify the multitude of pathways through which natural capital contributes to human welfare. The system is designed primarily to support environmental policy analysis but also provides a framework that can be used for national and local environmental accounting.

Economic Valuation of Groundwater in Abu Dhabi Emirate (2013 to 2015)—*Project Supervisor*. For the Environment Agency-Abu Dhabi (EAD), led a project to assist the agency in evaluating and developing policies to encourage more efficient management of groundwater resources. Supervised the development of a dynamic hydro-economic optimization model, which evaluates the net benefits and economic tradeoffs across alternative water uses by simulating groundwater stocks and withdrawals for different regions, time periods, and sectors in Abu Dhabi. Conducted a 3-day training workshop in Abu Dhabi introducing economic concepts and methods for valuing natural capital and ecosystem services, and developed a final report and presentation summarizing key findings and policy implications emerging from the hydro-economic analysis.

Strengthening the Resilience of the Taunton River Watershed: A Tool to Prioritize Local Action (2013 to 2014)—*Project Supervisor*. For EPA/OW Healthy Watershed Program developed an assessment framework and decision support tool for prioritizing conservation efforts for natural lands in the watershed. Used geospatial methods to divide the landscape into over 900 networked subwatersheds and further subdivided these areas according to natural land cover type and level of current protection. Defined six categories of ecosystem services provided by natural lands and developed GIS-based indicators of these services for each spatial unit within the watershed. The key ecosystem services considered were protection from extreme events/floods, water quantity protection, water quality protection, habitat protection, air quality protection, and open space preservation. Based on this

framework, created an interactive tool that allows users to weight the ecosystem factors that are of most concern to them and, using these inputs, generate a ranked list of land units for protection.

Estimating the Benefits of the Chesapeake Bay TMDL Using Benefits Transfer (2012 to 2014)—*Work Assignment Manager*. For EPA's National Center of Environmental Economics (NCEE), led project to develop and apply benefit transfer techniques to estimate selected benefits of the nutrient and sediment load reductions expected to be achieved by the Chesapeake Bay Total Maximum Daily Load (TMDL) based on the jurisdiction's Phase II Watershed Implementation Plans. Used simulated river segment water quality data, water quality indexing methods, and socio-demographic data for Chesapeake Bay watershed jurisdictions, and applying meta-regression based willingness to pay (WTP) functions to estimate the aggregate benefits of water quality improvements in nontidal tributaries to the Chesapeake Bay. Used Scenario Builder input and output data, carbon sequestration modeling, and social cost of carbon values to estimate greenhouse gas benefits from agricultural and urban best management practices (BMPs). Applied estimates of changes in forest cover and wetland acres, along with average outdoor recreation day values to estimate waterfowl and nonwaterfowl hunting benefits. Led development of report summarizing methods and findings regarding the annual benefits of the Bay TMDL.

Demonstration and Evaluation of Structural Benefit Transfer and Bayesian Benefit Transfer for Valuing Welfare Impacts (2007 to 2013)—*Co-investigator*. On this grant from EPA/ORD, developed and evaluated innovative benefit transfer methods that combine data and results from various types and sources of benefit estimates for environmental improvements. Using the results of several beach width valuation studies, developed and demonstrated a preference calibration approach for structural benefit transfer, which specifically incorporated spatial heterogeneity in beach quality by combining results from stated preference studies and revealed preference random utility models. Applying benefit transfer can also be interpreted as an inherently Bayesian process. In collaboration with Dan Phaneuf (University of Wisconsin) demonstrated a Bayesian benefit transfer approach through a recreation site choice application, which is based on (a) a prior distribution on marginal WTP for the recreation site attribute of interest (beach width); (b) a small amount of policy site choice micro data; and (c) an estimate of the aggregate proportion of times each alternative in the choice set is selected.

Economic Study of Nutrient Credit Trading for the Chesapeake Bay (2011 to 2012)—*Project Manager*. Led study for the Chesapeake Bay Commission that examined nutrient credit trading as a cost-saving strategy for meeting the recently established Chesapeake Bay TMDL limits for nitrogen and phosphorus. In particular, estimated the total potential cost savings that could be achieved under alternative trading scenarios. To estimate the potential costs savings from trading, developed a detailed inventory of potential point and nonpoint source control projects located throughout the watershed and estimated the annual nutrient load reductions and annual costs for each of these projects. Developed and applied a least-cost optimization model using a mixed integer linear programming technique to simulate the trading scenario outcomes. The results of this study indicate that nutrient credit trading would deliver significant cost savings in the implementation of the Bay TMDL.

Economic Optimization Model for Nutrient Controls and Ecosystem Service Enhancements in the Chesapeake Bay Watershed (2009 to 2012)—*Lead Economist.* For EPA/ORD, developed and applied methods for quantifying and valuing the ecosystem service co-benefits associated with converting agricultural lands and applying best management practices to reduce nutrient and sediment runoff in the Chesapeake Bay watershed. These ecosystem services include carbon sequestration, water storage from wetlands, waterfowl hunting, and brook trout recreational fishing services. Applied benefit transfer methods to value these changes on a per acre of land conversion basis. Applied these estimates as cost offsets in a cost-minimization model for nutrient and sediment control in the watershed, to assist EPA in evaluating the optimal mix of control methods.

Measuring Nutrient Reduction Benefits for Policy Analysis Using Linked Non-market Valuation and Environmental Assessment Models (2008 to 2012)—*Co-primary Investigator*. Co-primary investigator on a grant from EPA/OW to develop and apply economic valuation methods to assess benefits from reducing nutrient levels in the nation's water bodies and to aid states in their efforts to evaluate and adopt numeric nutrient criteria into their water quality standards. Collaborated with researchers at RTI, North Carolina State University, and Duke University to (1) develop a eutrophication function mapping quantitative water chemistry measures to a lake eutrophication index, (2) apply combined revealed and stated preference models to value the use and nonuse benefits of lake nutrient reductions expressed in terms of the index, (3) estimate and implement the model using data collected through a survey of households in the southeastern United States, and (4) transfer knowledge on the framework and its use for regulatory analysis via a training workshop for state-level water quality regulators and analysts.

Analysis of Costs for Controlling Nutrient Pollution in South Florida (2011 to 2012)—*Project Manager*. For the Everglades Foundation, led a study that examined several questions regarding the costs of controlling nutrient pollution to the Everglades and other surface waters in South Florida, including (1) how large are the costs of existing nutrient control efforts, (3) how do costs and nutrient reductions vary across sectors, and (3) who bears the burden of the nutrient control costs? Relying on publicly available data sources we estimated total annual costs and nutrient load reductions (in 2010) from agricultural BMPs, urban BMPs, domestic wastewater treatment facilities, and public works projects that further treat and remove nutrient loads. In the basins discharging to the Everglades, we estimated that agriculture accounts for 75 to 80% of the phosphorus loads, and we estimated that $106 million is spent each year to reduce nutrient loads in these basins, with 80% of these costs for treating agricultural runoff. Agriculture pays for 24% of these costs, whereas district property taxes and federal funds pay for 58%.

Valuation Study of Klamath River Basin Restoration (2009 to 2012)—*Co-primary Investigator*. On this study for the Department of the Interior, assessing the benefits, including nonuse values, of implementing a river restoration program for the Klamath River Basin in Oregon and California, including removal of four hydro-electric dams and other fisheries restoration activities. Designing a nationwide mail and Web-based stated preference survey using focus groups and cognitive interviews. The survey uses a choice-based experimental design to elicit respondents' WTP for river restoration, recovery of salmonid populations, and protection of threatened and endangered fish species in the basin.

Climate Change, Water Resources, and Access to Improved Drinking Water and Sanitation (2008 to 2011)—*Project Manager*. Leading a study for EPA's Climate Change Division (CCD) to conduct a country-level analysis investigating the potential impacts of climate change on levels of access to safe drinking water and sanitation. Applying regression analyses to a cross-country panel data set and exploring the determinants of urban and rural access levels, including socio-economic, political, demographic, geographic, water resource, and climate factors. Also conducting a meta-analysis of WTP estimates for improved drinking water access and services, to provide summary estimates of the social welfare impacts of changes in water and sanitation access levels.

Analysis of Ecosystem Services and Benefits from Reductions in Atmospheric Nitrogen and Sulfur Deposition (2007 to 2009)—*Project Manager*. Managing a series of related projects and tasks for EPA's Office of Air Quality Planning and Standards (OAQPS) to develop and apply methods for quantifying and valuing changes in aquatic and terrestrial ecosystem services due to reduced atmospheric deposition of nitrogen and sulfur. These methods link ecological models of acidification and nutrient enrichment processes with market and nonmarket economic valuation methods, including travel cost and benefit transfer models, to evaluate changes in a wide range of water-based recreation, aesthetic, and forest provisioning services. These methods were specifically designed for assessing the benefits of revised secondary ambient standards for nitrogen and sulfur oxides but are equally applicable for evaluating other measures that reduce deposition, such as ambient standards for particulate matter.

Comparative Analysis of Rates and Costs of Respiratory Illness in Coal Mining and other Industries (2007 to 2009)—*Project Manager*. Managed a project for the Centers for Disease Control and Prevention's National Institute of Occupational Safety and Health to estimate and compare the prevalence and costs of respiratory illness among adult males employed in the coal mining industry compared to other industries such as construction, manufacturing, and other mining. Analyzed 5 years of private insurance claims data from a nationwide sample of workers. Applied two-part regression models to assess the determinants of the prevalence and medical costs of respiratory illness, including individuals' socio-demographic characteristics and industry of occupation.

Survey Development for Assessing the Effectiveness and Impact of Advisories for Coastal and Great Lakes Beaches (2006 to 2008). For EPA's Office of Water (OW), developed questionnaires and survey design, and the Information Collection Request package for the Office of Management and Budget for two related data collection activities designed to support the evaluation of beach advisory programs in the United States. One of these activities was designed to support a revealed preference analysis of beach recreation behavior in Florida to measure the effect of advisories on beach site choice and values for improved coastal water quality. The other supports a stated preference conjoint analysis to assess individuals' WTP for the information provided by a beach advisory program.

Benefits Analysis of Real ID (2007)—*Project Manager*. Managed this project for the Department of Homeland Security's Private Sector Office to assess the benefits of a national personal identification program (Real ID Act of 2005). Developed and applied benefit transfer methods to estimate potential avoided mortality, morbidity and property damage losses associated with preventing terrorist attacks of different types. Also estimated benefits for a number of supplemental benefits such as fewer cases of identity theft, fewer automobile accidents, less gun crime, less underage drinking, and less underage smoking.

Understanding Ecological Risks, Costs, and Benefits of Use Attainment in Water Quality Standards (2004 to 2007). In collaboration with researchers from EPA's National Center of Environmental Assessment and OW, developed a detailed report designed to assist decision makers and stakeholders from states, Tribes, and communities with communicating and evaluating management alternatives and tradeoffs in setting water quality standards (WQS). Developed conceptual models for five selected case studies, designed to illustrate the various linkages between WQS management alternatives, aquatic ecosystems components, aquatic ecosystem services, and human welfare effects. Conducted a workshop with 20 water quality standards experts and practitioners to evaluate and refine the methodology and to develop recommendations for incorporating community preferences into water quality management decisions.

National Survey on Recreation and the Environment (NSRE): Freshwater Recreation Module (2005 to 2006)—*Project Manager*. Managed project for EPA/NCEE to revise the freshwater module of the NSRE to optimize its use for water-based recreation demand modeling and nonmarket valuation research. Developed and demonstrated a prototype Web-based data platform to support and promote the use of NSRE for research and policy analysis.

Eliciting Risk Tradeoffs for Valuing Fatal Cancers (2000 to 2006). In collaboration with researchers in EPA/NCEE, developed methods for adjusting mortality risk values to account for the latency and morbidity effects associated with fatal cancers, which addresses a critical data need for assessing the benefits of many environmental and public health programs. Collected data for the analysis through a national survey that used WebTV technology to elicit individual risk-risk trade-offs between auto accident and fatal cancer death risks.

Meta-Analysis of Water Quality Value Estimates (2001 to 2005). For EPA/OW, conducted a meta-analysis of water quality valuation studies to support the development of flexible benefit transfer

functions, which can be used to assess the benefits of a wide variety of water pollution control policies. Compiled a comprehensive bibliography of existing valuation studies and a corresponding database of value estimates and related descriptive information from each study. Used regression-based econometric models to estimate the relationship between value estimates and a variety of explanatory factors, including the magnitude of water quality changes, socioeconomic characteristics, and the valuation methods used. Demonstrated how the resulting regression models can be used as benefit transfer functions.

Benefits Assessment for the Clean Air Mercury Rule (2003 to 2005). For EPA/OAQPS, developed and implemented alternative methods for measuring nationwide exposures to mercury through consumption of recreationally caught freshwater fish. For the regulatory impact analysis of EPA's Clean Air Mercury Rule, used these methods to estimate the number of exposed pregnant women, total IQ losses to their prenatally exposed children, and lost present value of future earnings due to these exposures, and to estimate the corresponding benefits of reducing mercury emissions in the United States.

Costs of Illness for Environmentally Related Health Effects in Older Adults (2003 to 2004). For EPA's Office of Children's Health Protection, developed and implemented a national cost of illness study of older adults in the United States focusing on six major health conditions that are often associated with environmental exposures: chronic lung disease, ischemic heart disease, stroke, lung cancer, pneumonia, and gastrointestinal illness. Estimated the direct and indirect costs attributable to these conditions using Medicare claims and related data from national health surveys.

Meta-Analysis of WTP Estimates for Avoided Morbidity (2001 to 2004)—*Project Manager*. Managed study funded by EPA and the Food and Drug Administration that applied meta-analysis methods to WTP estimates for avoided morbidity to support the development of a benefit transfer tool for environmental, food safety, and other regulatory analyses. Compiled a comprehensive bibliography and database of valuation studies and estimates. Estimated an econometric model that explores the determinants of WTP estimates and tests hypotheses regarding the relationship between WTP and quality-adjusted life-years (QALYs) measures.

Peer Review of EPA's BenMAP Software (2004). For EPA/OAPQS, managed the peer-review process for EPA's BenMAP software, which models avoided health effects and benefits of selected national scale reductions in ambient air pollution levels. Identified and arranged for reviewers in three key fields—environmental economics, epidemiology, and spatial analysis; defined key questions for the review; and developed final report that compiled and summarized written reviews by each expert.

Parents' Air Pollution Averting Behaviors for Protecting Children's Health (2001 to 2004)—*Co-investigator*. Co-investigator on EPA/ORD STAR grant that analyzed parents' behaviors regarding their children's activities on high ozone alert days. Developed a multistage survey, including a series of daily activity diaries, which was administered via the Web to households across the country in the summer of 2002. Conducted econometric analyses of the survey data to assess how spatial and temporal variations in ozone alert conditions affected the level of outdoor activities and how the presence of asthmatic children in the household altered these behaviors.

Economic Analysis of Alternative Hog Waste Management Practices (2001 to 2003)—*Task Leader*. Led the benefits assessment task for a project funded by the State of North Carolina to assess the economic consequences of adopting alternative hog waste management practices in North Carolina. Collaborated with environmental scientists on the development of an integrated approach for assessing the environmental fate and transport of nutrients under alternative waste management scenarios and the benefits to North Carolina residents associated with improved air (including odor), surface water, and groundwater quality.

Benefits Assessment for the Proposed Controls on Precursor Chemicals Used in Production of Illicit Drugs (2003). Assisted Health Canada in evaluating proposed restrictions on precursor chemicals, which are used to manufacture illicit synthetic drugs, by developing a conceptual framework for categorizing and estimating the benefits of restrictions. Identified key data and research needs for completing a quantitative assessment of benefits.

Retrospective Assessment of Clean Water Act Costs (1999 to 2001)—*Project Manager*. Directed project for EPA/OW to estimate the annual costs associated with Clean Water Act (CWA) programs implemented since the early 1970s. Compiled a time series database on actual public and private water pollution abatement expenditures and developed model to simulate counterfactual (i.e., without CWA) conditions. Developed annualized cost estimates for each scenario and computed the incremental costs due to the CWA.

Benefit Analysis of Snowmobile Restrictions in National Parks (2000 to 2001). Conducted a detailed assessment of the benefits of snowmobiling restrictions in the National Park System to support an economic analysis of proposed regulations. Identified and described the full range of potential negative impacts associated with snowmobile use in parks and evaluated how various restrictions, particularly for Yellowstone and Grand Teton National Parks, would reduce these impacts and would improve social welfare.

Retrospective Assessment of the Costs National Water Pollution Control Policies (1999 to 2001)—*Project Manager*. Led project for EPA/OW which estimated the annual costs associated with CWA programs that have been implemented since the early 1970s. Compiled time series database on actual public and private water pollution abatement expenditures and developed model to simulate counterfactual (i.e., without CWA) conditions. Developed annualized cost estimates for each scenario and computed the incremental costs due to the CWA.

Economic Analysis of Miscellaneous Cellulose Manufacturing Industry MACT Standard (1999 to 2000)—*Project Manager*. Managed project for EPA/OAQPS to estimate the economic impacts of proposed toxic air pollution regulations for five small cellulose producing industries. Extended RTI's economic impact modeling framework to include oligopolistic competition and used the model to estimate impacts in two of the affected markets.

Valuing the Benefits of Safe Drinking Water (1997 to 2000). Worked with researchers at EPA's Office of Groundwater and Drinking Water and Office of Policy, Planning, and Evaluation to develop a national survey to assess attitudes and behaviors regarding the quality of publicly supplied drinking water. Developed a questionnaire to elicit information regarding household averting (e.g., bottled water and water filter) expenditures, perceptions of tap water quality, and willingness to pay to improve drinking water quality. Specified a modeling framework for combining the revealed and stated preference data to assess individuals' values from improved drinking water quality.

Willingness-to-Pay Study for Antiviral Therapy in a Developing Country (1998 to 2000)—*Project Manager*. Managed project to develop, implement, and analyze a contingent valuation survey in Mexico, to assess the benefits of providing access to antiretroviral triple-drug therapies for HIV infection. Applied WTP estimates to predict the demand for these therapies by the uninsured HIV-infected population, which can be used to evaluate alternative drug subsidization policies.

Regulatory Impact Analysis for Effluent Limitation on Centralized Waste Treatment Facilities (1997 to 2000). For EPS/OW, conducted benefits assessment for proposed regulations of surface water discharges from centralized waste treatment facilities. Valued reductions in cancer and noncancer health effects from ingesting hazardous pollutants in fish and drinking water. In addition, estimated the changes in

recreational and subsistence fishing behavior and the benefits of improved recreational opportunities due to improvements in water quality.

Benefit Analysis of Proposed Air Pollution Regulations for the Secondary Aluminum Industry (1997 to 1998). For EPA/OAQPS, conducted a benefit analysis of proposed air pollution regulations on the secondary aluminum industry by analyzing and discussing the multiple pathways through which emissions releases can adversely affect human welfare, by summarizing the quantified impacts on human health and ecological systems, and by monetizing the impacts that could be valued using a benefits transfer approach.

Valuing Risk Reductions in Environmental Sources of Infertility Risk Using the Efficient Household Framework (1996 to 1998)—*Primary Investigator*. For this EPA grant, developed and analyzed results of a self-administered computerized contingent valuation survey to collect information on individuals' perceptions and attitudes regarding the risks of experiencing infertility and on their willingness to pay to reduce these risks in the future. Used results to develop a conceptual model that links risk reduction decisions made in a household context to individuals' preferences for the risk reductions.

RCRA Benefits Study: Scoping and Methodology (1996 to 1997). For EPA's Office of Solid Waste, developed strategies for conducting a comprehensive retrospective assessment of the benefits of the Resource Conservation and Recovery Act (RCRA) program. Conducted a review and critique of approaches that have been previously used to analyze the benefits of RCRA regulations and other major environmental programs. Outlined and assessed the advantages of alternative methodologies for evaluating the past and current benefits of the RCRA program

Cost-Benefit Analysis of Proposed New Source Regulations on NO_x Emissions from Electric Utility and Industrial Boilers (1995 to 1996)—*Project Manager*. Managed a regulatory impact analysis for EPA/OAQPS of proposed new source regulations for NO_x emissions from utility and industrial boilers. Conducted an exhaustive qualitative assessment describing the full range of pathways and areas where damages can occur from NO_x emissions and summarized the existing empirical evidence on values related to health, recreation, visibility, ecological, nonuse and materials damages.

Professional Experience

2012 to date	RTI International, Ecosystem Services Research
	Program Director
2008 to 2012	RTI International, Environmental, Technology, and Energy Economics
	Associate Program Director and Senior Economist
2007 to 2008	University of Tilburg, Department of Economics, Tilburg, The Netherlands
	Visiting Assistant Professor
2004 to 2007	RTI International, Environmental and Natural Resource Economics, Research Triangle Park, NC
	Senior Economist and Program Director

1994 to 2004	RTI International, Environmental and Natural Resource Economics, Research Triangle Park, NC
	Senior Economist
1993 to 1994	East Carolina University, Department of Economics
	Assistant Professor
1991 to 1993	Resources for the Future and University of Maryland
	Research Assistant
Fall 1990	University of Maryland, College Park, MD
	Teaching Assistant
1987 to 1990	University of Maryland, College Park, MD
	Instructor

Professional Service

Associate Editor, RTI Press, January 2009 to June 2012

Journal Reviews

American Economic Review
American Journal of Agricultural Economics
Journal of Environmental Economics and Management
Land Economics
Environmental and Resource Economics
Water Resources Research
Energy and Resource Economics
Environmental and Resource Economics
Ecological Economics
Water Resources Management
Journal of Risk and Uncertainty
Risk Analysis
Journal of Policy Analysis and Management
Value in Health
RTI Press

Seminars and Courses Taught

Course instructor, Introduction to Ecosystem Services Valuation: Training Workshop, Environment Agency, Emirate of Abu Dhabi, Abu Dhabi, United Arab Emirates, February 2014

Courses at Tilburg University: Environmental Economics

Courses at East Carolina University: Environmental Economics; Principles of Microeconomics; Principles of Macroeconomics.

Courses at University of Maryland: Principles of Microeconomics; Principles of Macroeconomics.

Books, Book Chapters, and Monographs

Phaneuf, D. & Van Houtven, G. L. (2015). Structural benefits transfer using Bayesian econometrics. In R. Johnston, J. Rolfe, R. Rosenberger, & R Brouwer (Eds.), *Benefit Transfer of Environmental and Resource Values: A Handbook for Researchers and Practitioners*. Springer, Economics of Non-Market Goods and Resources series.

Van Houtven, G. L. (2014). Health and the environment. In J. C. Whitehead and T. Haab, (Eds.), *Environmental and natural resource economics: An encyclopedia*. Santa Barbara, CA: ABC-CLIO.

Van Houtven, G. L., Pattanayak, S. K., & Depro, B. M. (2011). Benefits transfer of a third kind: An examination of structural benefits transfer. In J. Whitehead, J. C. Huang, & T. Habb (Eds.), *Preference data for environmental valuation* (pp. 303–321). New York, NY: Routledge, Explorations in Environmental Economics Series.

Heberling, M. T., Van Houtven, G. L., Beaulieu, S. M., Bruins, R. J., Hansen, E., Sergeant, A., & Thurston, H. W. (2009). Using conceptual models to communicate environmental changes. In H. Thurston, M. Heberling, & A. Schrecongost (Eds.), *Environmental economics for watershed restoration* (pp. 123–140). Boca Raton, FL: CRC Press.

Van Houtven, G. L., Honeycutt, A. A., Gilman, B., McCall, N., Throneburg, W. W., & Sykes, K. E. (2008). *Costs of illness among older adults: An analysis of six major health conditions with significant environmental risk factors*. RR-0002-0809. Research Triangle Park, NC: RTI Press.

Pattanayak, S. K., Smith, V. K., & Van Houtven, G. (2007). Improving the practice of benefits transfers: A preference calibration approach. In S. Navrud & R. Ready (Eds.), *Environmental value transfers: Issues and methods* (Economics of Non-markets Goods and Resources Series). Dordrecht: Kluwer Academic Publishers.

Gupta, S., Van Houtven, G., & Cropper, M. (1995). Do benefits and costs matter in environmental regulation: An analysis of EPA decisions under superfund? In R. Revesz (Ed.), *Superfund reauthorization: Theoretical and empirical issues*. Washington, DC: Resources for the Future.

Van Houtven, G. (1996). Bureaucratic discretion in environmental regulations: The air toxics and asbestos ban cases. In R. Congleton (Ed.), *Political economy of environmental protection: Analysis and evidence*. Ann Arbor: University of Michigan Press.

Peer-Reviewed Journal Articles

Van Houtven, G., Mansfield, C., Phaneuf, D. J., von Haefen, R., Milstead, B., Kenney, M. A., & Reckhow, K. H. (2014). Combining expert elicitation and stated preference methods to value ecosystem services from improved lake water quality. *Ecological Economics*, *99*, 40–52.

Wainger, L., Van Houtven, G. L., Loomis, R. J., Messer, J., Beach, R. H., & Deerhake, M. E. (2013). Tradeoffs among ecosystem services, performance certainty, and cost-efficiency in the implementation of the Chesapeake Bay TMDL. *Agricultural and Resource Economics Review, 42*(1), 196–224.

Rea, A. W., Davis, C., Evans, D. A., Heninger, B. T., & Van Houtven, G. L. (2012). Using ecosystem services to inform decisions on U.S. air quality standards. *Environmental Science and Technology, 46*(12), 6481–6488.

Van Houtven, G. L., Johnson, F. R., Kilambi, V., & Hauber, B. (2011). Eliciting benefit-risk preferences and probability-weighted utility using choice-format conjoint analysis. *Medical Decision Making, 31*(3), 469–480.

Van Houtven, G., Reed, W., Biddle, E.A., Volkwein, J.C., Clayton, L., & Finkelstein, E. (2010). Rates and costs of respiratory illness in coal mining: A cross-industry comparative analysis. *Journal of Occupational and Environmental Medicine*, *52*(6), 610–617.

Van Houtven, G. L., & Poulos, C. (2009). Valuing welfare impacts of beach erosion: An application of the structural benefit transfer method [invited paper]. *American Journal of Agricultural Economics, 91*, 1343–1350.

Johnson, F. R., Van Houtven, G. L., Ozdemir, S., Hass, S., White, J., Francis, G., Miller, D. W., & Phillips, J. T. (2009). Multiple sclerosis patients' benefit-risk preferences: Serious adverse event risk versus treatment efficacy. *Journal of Neurology, 256*, 554–562.

Van Houtven, G. L. (2008). Methods for the meta-analysis of willingness to pay data: An overview. *Pharmacoeconomics, 26(11)*, 901–910.

Whitehead, J., Pattanayak, S. K., Van Houtven, G. L., & Gelso, B. (2008). Combining revealed and stated preference data to estimate the nonmarket value of ecological services: An assessment of the state of the science. *Journal of Economic Surveys*, *22*(5), 872–908.

Van Houtven, G. L., Sullivan, M., & Dockins, C. (2008). Cancer premiums and latency effects: A risk tradeoff approach for valuing reductions in fatal cancer risks. *Journal of Risk and Uncertainty, 36*(2), 179–199.

Van Houtven, G. L., Powers, J., & Pattanayak, S. K. (2007). Valuing water quality improvements using meta-analysis: Is the glass half-full or half-empty for national policy analysis? *Resource and Energy Economics, 29*, 206–228.

Smith, V., Pattanayak, S. K., & Van Houtven, G. L. (2006). Structural benefit transfer: An example using VSL estimates. *Ecological Economics, 60*, 361–371.

Mansfield, C. A., Johnson, F. R., & Van Houtven, G. L. (2006). The missing piece: Valuing averting behavior for children's ozone exposures. *Resource and Energy Economics, 28*(3), 215–228.

Van Houtven, G. L., Powers, J., Jessup, A., & Yang. J. (2006). Valuing avoided morbidity using meta-analysis: What can health status measures and QALYs tell us about WTP? *Health Economics, 15*(8), 775–795.

Farrow, R. S., Schultz, M. T., Celikkol, P., & Van Houtven, G. L. (2005). Pollution trading in water quality limited areas: Use of benefits assessment and efficient trading ratios. *Land Economics, 81*(2), 191–205.

Smith, V. K., & Van Houtven, G. (2004). Recovering Hicksian consumer surplus within a collective model: Hausman's method for the household. *Environmental and Resource Economics, 28*, 153–167.

Smith, V. K., Pattanayak, S. K., & Van Houtven, G. (2003). VSL reconsidered: What do labor supply estimates tell us about risk preferences? *Economics Letters, 80*(2), 147–153.

Whittington, D., Matsui, O., Freiberger, J., Van Houtven, G., & Pattanayak, S. (2002). Private demand for a HIV/aids vaccine: Evidence from Guadalajara, Mexico. *Vaccine, 20*(19/20), 2585–2591.

Mansfield, C., Van Houtven, G. L., & Huber, J. (2002). Compensating for public harms: Why public goods are preferred to money. *Land Economics, 78*(3), 368–389.

Smith, V. K., Van Houtven, G. L., & Pattanayak, S. K. (2002). Benefit transfer via preference calibration "Prudential Algebra" for Policy. *Land Economics, 78*(1), 132–152.

Mansfield, C., Van Houtven, G. L., & Huber, J. (2001). The efficiency of political mechanisms for siting nuisance facilities: Are opponents more likely to participate than supporters? *The Journal of Real Estate Finance and Economics, 22*(2/3), 141–161.

Van Houtven, G., & Morris, G. (1999). Household behavior under alternative pay-as-you-throw systems for solid waste disposal. *Land Economics, 75*(4), 515–537.

Groothuis, P., Van Houtven, G., & Whitehead, J. (1998). Using contingent valuation to measure willingness-to-accept: The case of a hazardous waste disposal facility. *Public Finance Review, 26*(3), 231–249.

Van Houtven, G. (1997). Altruistic preferences for life-saving public programs: Do baseline risks matter? *Risk Analysis, 17*(1), 85–92.

Van Houtven, G., & Cropper, M. (1996). When is a life too costly to save? Evidence from environmental regulations. *Journal of Environmental Economics and Management, 30*(3), 348–368. Reprinted in E. O. Wallace (Ed.), (1999). *The RFF Reader in Environmental and Resource Management* (pp. 43–50). Washington, DC: Resources for the Future.

Gupta, S., Van Houtven, G., & Cropper, M. (1996). Paying for permanence: An economic analysis of EPA's cleanup decisions at superfund sites. *RAND Journal of Economics, 27*(3), 563–582.

Danielson, L., Hoban, T., Van Houtven, G., & Whitehead, J. (1995). Measuring the benefits of local public goods: Environmental quality in Gaston County, North Carolina. *Applied Economics, 27*, 1253–1260.

Other Articles and Papers

Murray, B., Vincent, J. & Van Houtven G. (2014). Different uses of the ecosystem services framework: Scenario analysis and "green accounting." in *Federal Resource Management and Ecosystem Services Guidebook*. Durham: National Ecosystem Services Partnership, Duke University, https://nespguidebook.com

Pattanayak, S. K., Van Den Berg, C., Yang, J., & Van Houtven, G. L. (2006). *The use of willingness to pay experiments: Estimating demand for piped water connections in Sri Lanka* (World Bank Policy Research Working Paper No. 3818). Washington, DC: The World Bank.

Gupta, S., Van Houtven, G., & Cropper, M. (1993). Cleanup decisions under superfund: Do benefits and costs matter? *Resources, 111*, 7–12.

Presentations and Proceedings

Van Houtven, G. L., Loomis, R. J., & Baker, J. S. (2014, December). *Nutrient credit trading and incentives to meet agricultural baseline requirements for the Chesapeake Bay TMDL*. Presented at A Community on Ecosystem Services (ACES) Conference, Washington, DC.

Sinha, P., & Van Houtven, G. L. (2014, December). *National Ecosystem Services Classification System (NESCS)*. Presented at A Community on Ecosystem Services (ACES) Conference, Washington, DC.

Van Houtven, G. L., Loomis, R. J., & Baker, J. S. (Invited Speaker). (2013, August). *Nutrient credit trading and incentives to meet agricultural baseline requirements for the Chesapeake Bay TMDL*. Presented at The American Agricultural Economics Association (AAEA) 2013 Annual Meetings, Washington, DC.

von Haefen, R. H., & Van Houtven, G. L. (2013, May). *Using RP and SP data for preference calibration: An application to the Falls Lake nutrient management strategy.* Presented at Resources for the Future (RFF) Academic Seminar Series, Washington, DC.

Van Houtven, G. L. (Invited Speaker). (2013, January). *Costs and burden sharing for controlling nutrient pollution in South Florida*. Presented at Everglades Coalition Annual Conference, Coral Gables, FL.

Phelan, J. N., Sinha, P., Van Houtven, G. L., Deerhake, M. E., Waite, R., Rea, A., & Tennant, G. (2012). Impacts of nitrogen and sulfur deposition on the growth of red spruce and sugar maple in the United States. In *Moving from status to trends: Forest Inventory and Analysis (FIA) symposium*, pp. 367–370.

Van Houtven, G. L. (Chair). (2012, December). *Restoring water quality and ecosystem services in the Chesapeake Bay watershed*. A Community on Ecosystem Services (ACES) and Ecosystem Markets 2012, Ft. Lauderdale, FL.

Van Houtven, G. L. (2012, December). *Measurement and valuation of ecosystem service co-benefits from the Chesapeake Bay TMDL*. Presented at A Community on Ecosystem Services (ACES) and Ecosystem Markets 2012, Ft. Lauderdale, FL.

Van Houtven, G. L. (Invited Speaker). (2012, June). *Valuation of Klamath River Basin restoration*. Presented at Ecosystem Valuation Workshop Sponsored by NOAA's Office of Habitat Conservation and Office of Response and Restoration and Stratus Consulting, Asheville, NC.

Van Houtven, G. L. (Invited Speaker). (2012, June). *Incorporating ecosystem services in optimization strategies for TMDLs*. Presented at Webinar sponsored by the U.S. Environmental Protection Agency ORD's Ecosystem Services Research Program, Research Triangle Park, NC.

Van Houtven, G. L., Loomis, R. J., Baker, J. S., & Casey, S. E. (2012, June). *The potential economic impact of trading on the cost of implementing the TMDL*. Presented at The Quarterly Meeting of the Scientific and Technical Advisory Committee (STAC) for the Chesapeake Bay, Annapolis, MD.

Van Houtven, G. L., Loomis, R. J., Baker, J. S., & Casey, S. E. (2012, May). *The potential economic impact of trading on the cost of implementing the TMDL*. Presented at Market Solutions and Restoring the Chesapeake: Nutrient Trading and TMDL Implementation. Congressional Luncheon and Briefing by the Chesapeake Bay Commission, Washington, DC.

Messer, J., Wolcott, R., Wainger, L., Deerhake, M., Van Houtven, G., Wood, D., Loomis, R. J., Morin, I., & Zoltay, V. (2011, February). *Considering ecosystem services co-benefits in strategies to restore the Chesapeake Bay*. Presented at North Carolina Water Resources Research Institute annual meeting, Raleigh, NC.

Messer, J., Wolcott, R., Wainger, L., Deerhake, M., Van Houtven, G., Wood, D., Loomis, R. J., Morin, I., & Zoltay, V. (2010, December). *Considering ecosystem services co-benefits in strategies to restore the Chesapeake Bay*. Presented at A Community for Ecosystem Services Conference, Phoenix, AZ.

Mansfield, C., Van Houtven, G. L., von Haefen, R., & Phaneuf, D. J. (2010, February). *Measuring nutrient reduction benefits for policy analysis using linked non-market valuation and environmental assessment models*. Presented at 2010 W2133 annual meetings, Tucson, AZ.

Phelan, J. N., Sinha, P., Cajka, J., Van Houtven, G. L., Deerhake, M. E., Waite, R. G., Rea, A. W., & Tennant, G. M. (2009, November). *Impacts of nitrogen and sulfur deposition on the growth of sugar maple and red spruce in the United States*. Poster presented at Workshop on Nitrogen, Critical Loads and Biodiversity, Edinburgh, United Kingdom.

Phelan, J. N., Sinha, P., Cajka, J., Van Houtven, G. L., Deerhake, M. E., Waite, R. G., Rea, A. W., & Tennant, G. M. (2009, October). *Impacts of nitrogen and sulfur deposition on the growth of sugar maple and red spruce in the United States*. Poster presented at National Atmospheric Deposition annual meeting and scientific symposium, Saratoga Springs, NY.

Phelan, J. N., Sinha, P., Cajka, J., Van Houtven, G. L., Deerhake, M. E., Waite, R. G., Rea, A. W., & Tennant, G. M. (2009, August). *Impacts of nitrogen and sulfur deposition on the growth of sugar maple and red spruce in the United States*. Poster presented at Ecological Society of America conference, Albuquerque, NM.

Rea, A. W., Davis, C. C., Waite, R. G., Hubbell, B., Van Houtven, G. L., & Munns, W. R. (2009, August). *Ecosystem services: Bridging the gap between science and policy in the National Ambient Air Quality Standard setting process*. Presented at Ecological Society of America (ESA) annual meeting, Albuquerque, NM.

Mansfield, C. A., Van Houtven, G. L., Johnson, F. R., & Yang, J. C. (2009, January). Environmental risks and behavior: Do children spend less time outdoors when ozone pollution is high? Presented at Allied Social Science Association 2009 Annual Meeting, San Francisco, CA.

Van Houtven, G. L., Mansfield, C. A., Phaneuf, D., von Haefen, R., Reckhow, K., & Kenney, M. (2008, December). Valuing aquatic ecosystem services from reductions in nutrient loadings. Presented at A Conference on Ecosystem Services (ACES), Naples, FL.

Mansfield, C.A., Van Houtven, G. L., Johnson, F. R., Yang, J. C., Stone, S., & Pekar, Z. (2008, October). *Measuring the effectiveness of the air quality index: Two Web-based studies.* To be presented at the International Health of the 136th APHA Annual Meeting and Exposition, San Diego, CA.

Pattanayak, S. K., Poulos, C., Van Houtven, G. L., Yang, J. C., & Wendland, K. J. (2008, October). *Modeling the role of self-protective behaviors in vector-borne disease epidemiology.* To be presented at the International Health of the 136th APHA Annual Meeting and Exposition, San Diego, CA.

Johnson, F. R., Van Houtven, G. L., & Hauber, A. B. (2008, June). *Expected utility and rank-dependent utility for measuring risk-benefit preferences: A comparison of methods*. Presented at American Society of Health Economists, Durham, NC.

Pattanayak, S. K., Poulos, C., Van Houtven, G. L., Yang, J. C., & Wendland, K. J. (2007, July). *Modeling self-protective behaviors against infectious disease: Estimates of "prevalence elasticity" for malaria.* Poster presented at the International Health Economics Association 6th World Congress: Explorations in Health, Copenhagen, Denmark.

Pattanayak, S. K., Poulos, C., Yang, J., Wendland, K. J., & Van Houtven, G. L. (2007, September). *Modeling self-protective behaviors against infectious disease: Towards a theory of the economics of environmental epidemiology.* Presented at the Infectious Diseases Conference at Cornell University, Ithaca, NY.

Van Houtven, G. L., Pattanayak, S. K., Patil, S. R., Depro, B. M., Smith, V., & Kuminoff, N. (2007, April). *Structural benefits transfer for ecosystem valuation: Preference calibration and structural meta-analysis.* Presented at the EPA Workshop "Valuation for Environmental Policy: Ecological Benefits," Arlington, VA.

Van Houtven, G. L. (2007, March). *Valuing avoided morbidity using meta-regression analysis: What can health status measures and QALYs tell us about WTP?* Presented at the University of Southern California, School of Pharmacy, Research Seminar Series, Los Angeles, CA.

Johnson, R., & Van Houtven, G. L. (2006, October). *Risk-benefit preferences versus measured utility: A comparison of methods.* Presented at the Triangle Health Economics Workshop, UNC Chapel Hill.

Van Houtven, G. L. (2006, June). *Estimating benefits: Lessons from environmental policy analysis.* Presented at the Workshop on Benefit Methodologies for Homeland Security Analysis, Washington, DC.

Van Houtven, G. L., Johnson, F. R., Ozdemir, S., Hass, S., White, J., & Miller, D. (2006, June). *A conjoint analysis of patients' willingness to accept risk-benefit tradeoffs in treatment decisions.* Presented at the Inaugural Conference of the American Society of Health Economics (ASHE), Madison, WI.

Van Houtven, G. L., Sullivan, M., & Dockins, C. (2006, April). *Eliciting risk tradeoffs for valuing fatal cancers.* Presented at the U.S. Environmental Protection Agency, NCER/NCEE Workshop: "Morbidity and Mortality: How Do We Value the Risk of Illness and Death?" Washington, DC.

Van Houtven, G. L., Pattanayak, S. K., & Depro, B. M. (2006, January). *Benefits transfer of the third kind: Why bother with benefit transfer?* Presented at the American Economics Association Meetings, Boston, MA.

Mansfield, C. A., Van Houtven, G. L., Johnson, F. R., & Yang J. (2005, May). *Do parents respond to ozone conditions? A comparison of children who have asthma and those who do not.* Poster presented at EPA Science Forum, Washington, DC.

Heberling, M., Bruins, R., & Van Houtven, G. L (2005, May). *Understanding the ecological risks, costs, and benefits of use attainment.* Poster presented at the EPA Science Forum 2005, Washington, DC.

Van Houtven, G. L. (2004, December). *A health benefits assessment model for mercury emissions control technologies.* Presented at the RTI Fellows Symposium, Research Triangle Park, NC.

Van Houtven, G. L., Johnson, F. R., Mansfield, C.A., &Yang, J. C. (2004, January). *Parental averting behavior with respect to ozone alerts.* Presented at the ASSA/AEA Meetings, San Diego, CA.

Murray, B. C., Van Houtven, G. L., Deerhake, M. E., Dodd, R. C., Lowry, M. I., Yao, C., Miles, A., Phaneuf, D. J., Sommer, A., Cajka, J. C., Coburn, J. B., & Patil, S. (2003, October). *Economic feasibility assessment of the Smithfield foods agreement: Environmental modeling and benefits components.* Proceedings of the North Carolina State University Animal Waste Workshop.

Van Houtven, G. L., & Yang, J. C. (2003, June). *Valuing avoided morbidity using meta-analysis: What can QALY weights tell us about WTP.* Presented at the International Health Economics Association Meetings, San Francisco, CA.

Van Houtven, G. L., Mansfield, C. A., & Johnson, F. R. (2002, July). *Behavioral reactions to ozone alerts: Study design for assessing parents' values for protecting their children's health.* Presented at the Western Economic Association International Meetings, Seattle, WA.

Van Houtven, G. L. & Smith, V. K (2002, April). *Measuring the benefits of river water quality improvements: A preference calibration approach.* Presented at Water Resources Research Institute of UNC Annual Conference, Chapel Hill, NC.

Van Houtven, G. L., Dockins, C., & Williams, M. (2001, November). *Extending the reference lottery approach for valuing cancer risks.* Presented at the USEPA Workshop: *Economic Valuation of Mortality Risk Reduction*, Silver Spring, MD.

Van Houtven, G. L. (2001, February). *A "preference calibration" approach to benefit transfer.* Presented at Workshop entitled *Benefit Transfer: Practical Economic Analysis for Policy,* Research Triangle Park, NC.

Mansfield, C. A., Van Houtven, G. L., & Huber, J. (2002, October). *Measuring the value of environmental degradations based on willingness to accept compensation: Can it be measured? Will it be accepted?* Fuqua School of Business, Duke University, Durham, NC.

Whittington, D., Matsui, O., Freiberger, J., Van Houtven, G, & Pattanayak, S. (2002, July). *Individuals' willingness to pay for a HIV/AIDS vaccine: Evidence from Guadalajara, Mexico.* Presented at the XIII International AIDS Conference, Durban, South Africa.

Van Houtven, G. L., Whittington, D., Pattanayak, S., & Freiberger, J. (2000, February). *Estimating the willingness to pay and demand for triple drug therapy (TDT) in Mexico.* Presented to Global Health Outcomes Group, GlaxoWellcome, Research Triangle Park, NC.

Van Houtven, G. L., & Smith, V. K. (2000, January). *Stopping the clock: Willingness to pay for avoided infertility risks.* Presented at the AEA/ASSA Meetings, Boston, MA.

Van Houtven, G. L. (1999, October). *Willingness-to-pay for health interventions: Contingent valuation and other valuation methods.* Presented at the University of North Carolina, School of Public Health and Pharmacology, Chapel Hill, NC.

Van Houtven, G. L., & Pattanayak, S. (1999, August).*Measuring benefits of the Safe Drinking Water Act: A framework for combining contingent valuation and averting behavior data.* Presented to the AERE Sessions of Nashville AAEA Meetings, Nashville, TN.

Van Houtven, G. L. (1999, May). *EPA-RTI partnership for assessing the benefits of clean water policies.* Presented at the U.S. Environmental Protection Agency, Office of Water, Washington, DC.

Van Houtven, G. L., & Smith, V.K. (1999, March). *Willingness-to-pay for reductions in infertility risks: A contingent valuation study.* Presented at the U.S. Environmental Protection Agency Workshop in Silver Springs, Maryland.

Van Houtven, G. L. (1998, October). *Willingness-to-pay for health interventions: Contingent valuation and other valuation methods.* Presented at the University of North Carolina, School of Public Health and Pharmacology, Chapel Hill, NC.

Van Houtven, G. L. (1998, August). *Benefit analysis for EPA regulations: A discussion of issues and applications.* Presentation to Seminar Series on Environmental Economics, Department of Economics, University of Oregon, Eugene, OR.

Van Houtven, G. L. (1998, April). *Valuing reductions in infertility risks: Individual preferences and household decisions.* Presented at the 1998 Decision-Making and Valuation for Environmental Policy Workshop, Washington, DC.

Gallaher, M., Fox, T., Van Houtven, G., & Walton, T. (1997, March). *Economic methods primer.* Presented at EPA's Industrial Combustion Coordinated Rulemaking (ICCR) meetings, Chicago, IL.

Van Houtven, G., & Cropper, M. *Balancing costs and benefits in regulatory decisions: An analysis of EPA decisionmaking.* Presented at the ASSA/AEA Annual Meeting, Anaheim, CA (1993, January); NBER Summer Institute, Workshop of Environmental Economics (1992, August); M.I.T., Workshop on Energy and Environmental Policy Research (1992, April).

Van Houtven, G., Cropper, M., & Gupta, S. (1993, November). *Do benefit-cost considerations play a role in superfund decisions?* Presented at the Southern Economic Association Meeting, New Orleans, LA.

Technical Reports

Van Houtven, G.L., Loomis, R., & J. Baker (2015, March). *Ecosystem services and environmental markets in Chesapeake Bay restoration.* Final Report. Prepared for U.S. Environmental Protection Agency, Office of Research and Development. EPA/600/R-15/061.

Baker, J.S. & G.L. Van Houtven. (2015, February). *Economic valuation of groundwater in Abu Dhabi Emirate*. Final Report. Prepared for Environment Agency –Abu Dhabi.

Van Houtven, G.L., Eddy, M., Allen, J., Matthews, K. & J. Allpress. (2014, June). *Strengthening the resilience of the Taunton River Watershed: A tool to prioritize local action*. Final Report. Prepared for EPA Healthy Watershed Program.

Heller, K., Guthrie, S. A., Lowry, M. I., & Van Houtven, G. L. (2014, September). *Economic analysis: Proposed revisions to the health and environmental protection standards for uranium and thorium mill tailings rule* (Report No. 0212979.003.017). Prepared for U.S. Environmental Protection Agency.

Heller, K., Guthrie, S. A., Van Houtven, G. L., Lowry, M. I., Depro, B. M., & Smith, K. N. (2013, August). *Economic analysis: Proposed revisions to the health and environmental protection standards for uranium and thorium mill tailings (40 CFR Part 192) final report*. Prepared for U.S. Environmental Protection Agency.

Phaneuf, D. J., von Haefen, R. H., Mansfield, C. A., & Van Houtven, G. L. (2013, February). *Measuring nutrient reduction benefits for policy analysis using linked non-market valuation and environmental assessment models: Final report on stated preference surveys*. Prepared for U.S. Environmental Protection Agency, Office of Water.

Van Houtven, G. L., Loomis, R. J., Baker, J. S., Beach, R. H., & Casey, S. E. (2012, May). *Nutrient credit trading for the Chesapeake Bay: An economic study*. Prepared for Chesapeake Bay Commission.

Van Houtven, G. L., Reckhow, K. H., Loomis, R. J., Cunningham, J. H., & Casey, S. E. (2012, March). *Enterprise assessment for the reduction of nutrient pollution in south Florida waters*. Prepared for The Everglades Foundation.

Mansfield, C. A., Van Houtven, G. L., Hendershott, A. E., Chen, P. P., Porter, J. D., Nourani, V., & Kilambi, V. (2012, January). *Klamath River Basin restoration nonuse value survey*. Prepared for U.S. Department of the Interior.

U.S. Environmental Protection Agency, including Van Houtven, G. L. (2011, October). *An optimization approach to evaluate the role of ecosystem services in Chesapeake Bay restoration strategies* (Report No. EPA/600/R-11/001). Prepared for U.S. Environmental Protection Agency, Office of Research and Development.

Messer, J., Wolcott, R., Wainger, L., Deerhake, M., Van Houtven, G., Wood, D., Loomis, R. J., Morin, I., & Zoltay, V. (2010, December). *Considering ecosystem services co-benefits in strategies to restore the Chesapeake Bay*. Prepared for U.S. Environmental Protection Agency, Office of Research and Development.

Van Houtven, G., Sinha, P., Phelan, J., Cooter, W., Barber, M., Cutrofello, M., & Schimek, J. (2009, October). *Analysis of ecosystem benefits for reductions of NO_x and SO_x: Methodology report.* Prepared for the U.S. Environmental Protection Agency.

U.S. Environmental Protection Agency, including Deerhake, M. E., Phelan, J. N., Barber, M. C., Eddy, M. C., Cajka, J. C., & Van Houtven, G. L. (2009, September). *Risk and exposure assessment for review of the secondary National Ambient Air Quality Standards for oxides of nitrogen and oxides of sulfur: Main content. Final report*. (Report No. EPA-452/R-09-008a). Prepared for U.S. Environmental Protection Agency.

Van Houtven, G., Elswit, J., Yang, J., & Pattanayak, S. (2009, July). *Climate change, water resources, and access to improved drinking water and sanitation: Interim results*. Prepared for the U.S. Environmental Protection Agency.

Van Houtven, G. L., Sinha, P., Mansfield, C. A., Phelan, J. N., Loomis, R. J., & Flight, M. (2009, June). *Analysis of ecosystem services impacts for the NOx/SOx secondary NAAQS review*. Prepared for U.S. Environmental Protection Agency.

Van Houtven, G. L., Sinha, P., & Brandmeyer, J. (2008, October). *PM2.5 benefit-per-ton peer review*. Prepared for U.S. Environmental Protection Agency.

Van Houtven, G. L., & Clayton, L. (2008, September). *Ecosystem benefits of reducing nitrogen deposition in the Chesapeake Bay watershed*. Prepared for the U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards.

Mansfield, C. A., Cutrofello, M., Van Houtven, G. L., O'Neil, M. M., Schimek, J. A., Cooter, W. S., Weitz, K. A., & Barber, M. C. (2008, August). *Methodology development for linking ecosystem indicators to ecosystem services*. Prepared for the U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards.

Van Houtven, G. L., Clayton, L., & Finkelstein, E. (2008, July). *Rates and costs of respiratory illness in coal mining: A cross-industry comparative analysis*. Prepared for the National Institute for Occupational Safety and Health.

Van Houtven, G. L., Clayton, L., & Cutrofello, M. (2008, March). *Assessing the benefits of U.S. coastal waters using property value models*. Prepared for the U.S. Environmental Protection Agency.

Van Houtven, G. L., & Clayton, L. (2008, March). *Aggregate benefits of recreational beach use in the U.S.* Prepared for the U.S. Environmental Protection Agency.

Heberling, M. T., Bruins, R. J., Van Houtven, G. L., Beaulieu, S. M., Cooter, W. S., Driscoll, D. L., Heller, K., Throneburg, W. W., & Gregory, R. (2006, November). *Weighing ecological risks, costs, and benefits in use-attainment decisions.* Prepared for the U.S. Environmental Protection Agency.

Muth, M. K., Beach, R. H., Karns, S. A., Van Houtven, G. L., & Viator, C. L. (2005, December). *Regulatory impact analysis of the final BSE rulemaking using the beef sector facility-level model.* Prepared for the U.S. Department of Agriculture, Food Safety and Inspection Service.

Van Houtven, G. L., Wheaton, W. D., Patil, S. R., Cooter, W. S., Phaneuf, D., & Smith, V. (2005, November). *A proposed data query and delivery system for the NSRE freshwater recreation module.* Prepared for the U.S. Environmental Protection Agency, National Center for Environmental Economics.

Pattanayak, S. K., Van Den Berg, C., Yang, J., & Van Houtven, G. L. (2005, July). *Use and abuse of WTP experiments: Estimating demand for piped water connections.* Prepared for the World Bank.

Van Houtven, G., Patil, S., Corey, C., & Throneburg, W. (2004, November). *Assessment of mercury exposures to women of childbearing age from consumption of recreationally caught freshwater fish in the U.S.* Methodology Report. Prepared for the U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards.

Van Houtven, G., Honeycutt, A., Gilman, B., McCall, N., & Throneburg, W. (2004, November). *Costs of illness in older adults: An analysis of six major health conditions that can be affected by environmental exposures.* Prepared for the U.S. Environmental Protection Agency, Office of Children's Health Protection.

Heller, K. B., Ross, M., Beach, R. H., Van Houtven, G. L., Yang, J., Clayton, L., & Throneburg W. (2004, September). *Estimating employment impacts of water infrastructure spending.* Prepared for the U.S. Environmental Protection Agency, Office of Water.

Morales, R., Van Houtven, G., Cunningham, P., Throneburg, W., Corey, C., & Patil, S. (2004, January). *Methodology development for estimating the benefits of reducing mercury emissions.* Draft Analysis Plan. Prepared for the U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards.

Murray, B. C., Van Houtven, G. L., Deerhake, M. E., Dodd, R. C., Lowry, M. I., Yao, C., Miles, A. M., Bowman, E. J., Bruhn, M. C., Game, J. L., Phaneuf, D., Sommer, A., Yang, J-C., Patil, S., Guthrie, S. A., Cajka, J. C., & Coburn, J. B. (2003, November). *Benefits of adopting environmentally superior swine waste management technologies in North Carolina: An environmental and economic assessment.* Prepared for the Animal and Poultry Waste Management Center, North Carolina State University.

Van Houtven, G. L., & Pringle, C. (2003, September). *Water quality valuation: A summary of the empirical literature.* Prepared for the U.S. Environmental Protection Agency, Office of Water.

Van Houtven, G. L., Bondelid, T. R., Dal Santo, D. J., Miles, A., Game, J. M., & Stoddard, A. (2003, September). *The National Water Pollution Control Assessment Model (NWPCAM) version 2.1: Technical report 1—Surface water system.* Prepared for the U.S. Environmental Protection Agency, Office of Water and Office of Policy, Economics, and Innovation.

Van Houtven, G. L., Bondelid, T. R., Dal Santo, D. J., Miles, A., Game, J. M., & Stoddard, A. (2003, September). *The National Water Pollution Control Assessment Model (NWPCAM) version 2.1: Technical report 2—Point and nonpoint source pollutant loadings.* Prepared for the U.S. Environmental Protection Agency, Office of Water and Office of Policy, Economics, and Innovation.

Van Houtven, G. L., Bondelid, T. R., Dal Santo, D. J., Miles, A., Tulloch, M. L., & Stoddard, A. (2003, September). *The National Water Pollution Control Assessment Model (NWPCAM) version 2.1: Technical report 3—Water quality modeling.* Prepared for the U.S. Environmental Protection Agency, Office of Water and Office of Policy, Economics, and Innovation.

Little, K., Miles, A., Bondelid, T. R., & Van Houtven, G. L. (2003, September). *The National Water Pollution Control Assessment Model (NWPCAM) version 2.1: Technical report 4—Sensitivity analysis and calibration/validation.* Prepared for the U.S. Environmental Protection Agency, Office of Water and Office of Policy, Economics, and Innovation.

Van Houtven, G. L., Pringle, C., & Wagstaff, W. (2003, August). *Valuation of morbidity outcomes: A summary of the empirical literature.* Prepared for the U.S. Environmental Protection Agency, Office of Water.

Van Houtven, G. L., Gibson, T., & McVey, M. (2003, June). *Literature and information resources for ecological benefits assessment.* Prepared for the U.S. Environmental Protection Agency, Office of Policy, Economics, and Innovation.

Van Houtven, G. L., & Corey, C. (2003, April). *Eliciting risk tradeoffs for valuing fatal cancers: Survey design and preliminary results.* Prepared for the U.S. Environmental Protection Agency, Office of Policy, Economics, and Innovation and Office of Water.

Van Houtven, G., Rousu, M., Yang, J-C., Pringle, C., Wagstaff, W., & DePlatchett, J. (2003, March). *Valuation of morbidity losses: Meta-analysis of willingness-to-pay and health status measures.* Prepared for the Food and Drug Administration.

Van Houtven, G. L., Rousu, M., Yang, J-C., Pringle, C., Wagstaff, W., & DePlatchett, J. (2002, December). *Valuation of morbidity losses: Meta-analysis of willingness-to-pay and health status measures.* Prepared for the Food and Drug Administration, Center for Food Safety and Applied Nutrition.

Van Houtven, G. L., Pattanayak, S., Pringle, C., & Yang, J. (2002, September). *Review and meta-analysis of water quality valuation studies.* Prepared for the U.S. Environmental Protection Agency, Office of Water.

Van Houtven, G. L., Pringle, C. (RTI), & Shapansky, B. (Health Canada). (2002, March). *Assessing the benefits of proposed regulations of precursor chemicals: Benefit categories and data needs.* Prepared for the Economic Analysis and Evaluation Division, Health Canada & The Advisory Working Group Members.

Van Houtven, G. L., Bondelid, T. R., Dal Santo, D. J., & Stoddard, A. (2001, September). *National Water Pollution Control Assessment Model (NWPCAM) version 2.0: Technical report 1—Surface water system and point source inventory.* Prepared for the U.S. Environmental Protection Agency.

Van Houtven, G. L., Bondelid, T. R., Dal Santo, D. J., & Stoddard, A. (2001, September). *The National Water Pollution Control Assessment Model (NWPCAM) version 2.0: Technical report 2—Water quality modeling of conventional pollutants and nutrients.* Prepared for the U.S. Environmental Protection Agency.

Van Houtven, G. L., Bondelid, T. R., Dal Santo, D. J., & Stoddard, A. (2001, September). *National Water Pollution Control Assessment Model (NWPCAM) version 2.0: Technical report 3—Water quality modeling of toxic pollutants.* Prepared for the U.S. Environmental Protection Agency.

Murray, B. C., Beach, R. H., & Van Houtven, G. L. (2001, August). *Revised economic analysis for the amended Inventory Update Rule (IUR).* Prepared for the U.S. Environmental Protection Agency.

Van Houtven, G. L., Bondelid, T. R., Dal Santo, D. J., & Stoddard, A. (2001, June). *The National Water Pollution Control Assessment Model (NWPCAM V2), Quality review report for the surface water routing, hydrology, and hydraulics datasets.* Prepared for the U.S. Environmental Protection Agency.

Mansfield, C. A., R. H. Beach, M. Branton, & Countway, R. (2001, November through March). *Proposed restrictions on snowmobile riding in national parks.* (21 national parks (or complexes of parks) plus one summary report).

Van Houtven, G. L., Bondelid, T. R., Dal Santo, D. J., & Stoddard, A. (2000, September). *Surface water system and point source inventory.* Prepared for the U.S. Environmental Protection Agency.

Van Houtven, G. L., Bondelid, T. R., Dal Santo, D. J., & Stoddard, A. (2000, September).*Water quality modeling of conventional pollutants and nutrients.* Prepared for the U.S. Environmental Protection Agency.

Beach, R. H., Van Houtven, G. L., Buckley, M. C., & Depro, B. M. (2000, June). *Economic impact analysis for the proposed miscellaneous cellulose manufacturing industry NESHAP.* Prepared for the U.S. Environmental Protection Agency.

Heller, K. B., Bloch, L., Van Houtven, G. L., & Perry, V. (2000, April). *Economic analysis of effluent limitation guidelines and standards for the centralized waste treatment industry.* Prepared for the U.S. Environmental Protection Agency.

Van Houtven, G. L., Pattanayak, S. K., Richter, A., Whittington, D., Freiberger, J., Komives, K., de Nazelle, A., & Matsui-Santana, O. (2000, April). *WTP survey for TDT in Mexico: Survey instruments and data documentation.* Prepared for a confidential client.

Beach, R. H., Van Houtven, G. L., Buckley, M., & Depro, B. M. (2000, February). *Economic analysis of air pollution regulations: Miscellaneous cellulose manufacturing industry.* Prepared for the U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards.

Beach, R. H., Van Houtven, G. L., Buckley, M., & Depro, B. M. *Methodology for conducting an economic impact analysis: Miscellaneous cellulose manufacturing MACT industry.* Prepared for the U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, February (2000).

Van Houtven, G. L., Pattanayak, S., & Buckley, M. C. (2000, February).*A retrospective assessment of the costs of the Clean Water Act.* Prepared for the U.S. Environmental Protection Agency, Office of Water.

Van Houtven, G. L., Pattanayak, S., & Bingham, T. H. (2000, February). *Improving the practice of benefit transfer: A preference calibration approach.* Prepared for the U.S. Environmental Protection Agency, Office of Water.

Bingham, T. H., Bondelid, T. R., Depro, B. M., Figueroa, R. C., Hauber, A. B., Unger, S.J., & Van Houtven, G. L. (2000, February). *A benefits assessment of water pollution control programs since 1972.* Prepared for the U.S. Environmental Protection Agency.

Van Houtven, G. L., Bondelid, T. R., Buckley, M. C., & Figueroa, R. C. (1999, September). *National surface water toxics study—Status report on model development.* Prepared for the U.S. Environmental Protection Agency.

Brunnermeier, S. B., Buckley, M. C., & Van Houtven, G. L. (1999, August). *Cost assessment of Clean Water Act.* Prepared for the U.S. Environmental Protection Agency, Office of Water.

Van Houtven, G. L., Andrews, T. P., & Parsons, G. R. (1999, August). *Recreational benefits of water pollution control policies—Case study applications of the NWPCAM.* Prepared for the U.S. Environmental Protection Agency, Office of Water.

Van Houtven, G. L., & Smith, V. K. (1999, June). *Valuing risk reductions in environmental sources of infertility risk using the efficient household framework.* Prepared for the U.S. Environmental Protection Agency, Office of Research and Development.

Murray, B. C., & Van Houtven, G. L. (1999, May). *Economic impact analysis of proposed commercial and industrial waste incinerator regulation.* Prepared for the US Environmental Protection Agency, Office of Air Quality Planning and Standards.

Van Houtven, G. L., & Depro, B. M. (1998, September). *Section 4 test rule for high production volume chemicals.* Prepared for the U.S. Environmental Protection Agency, Office of Pollution Prevention and Toxic.

Van Houtven, G. L., Bondelid, T. R., Figueroa, R., & James, C. L. (1998, September). *Feasibility assessment and recommendations for expanding the NWPCAM.* Prepared for the U.S. Environmental Protection Agency, Office of Water.

Van Houtven, G. L., Bondelid, T. R., & Figueroa, R. (1998, August). *National surface water toxics study: Database, model development, and preliminary results.* Prepared for the U.S. Environmental Protection Agency, Office of Water.

Gallaher, M. P., & Van Houtven, G. L. (1998, June). *Industrial combustion coordinated rulemaking (ICCR).* Prepared for the U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards.

Fox, T. J., Van Houtven, G. L., & Depro, B. (1998, June). *Regulatory impact analysis of cement kiln dust rulemaking.* Prepared for the U.S. Environmental Protection Agency, Office of Solid Waste.

Van Houtven, G. L., Whitehead, J., Bingham, T. H., & Depro, B. M. (1998, April). *Valuing drinking water quality: Theory, methods, and research needs.* Prepared for the U.S. Environmental Protection Agency.

Anderson, D. W., Kenyon, A.E., & Van Houtven, G. L. (1997, November). *Consumer attitudes toward potential changes in food standards of identity.* Prepared for the U.S. Food and Drug Administration, Center for Safety and Applied Nutrition.

Hauber, A. B., & Van Houtven, G. L. (1997, November). *RCRA benefits study: Scoping and methodology.* Prepared for the U.S. Environmental Protection Agency, Office of Solid Waste.

Van Houtven, G. L., & Hauber, A. B. (1997, October) *Methodologies for assessing the benefits of RCRA.* Prepared for the U.S. Environmental Protection Agency, Office of Solid Waste.

Van Houtven, G. L., & Hauber, A. B. (1997, September). *Literature review for RCRA benefits study.* Prepared for the U.S. Environmental Protection Agency, Office of Solid Waste.

Van Houtven, G. L., & Muth, M. K. (1997, August). *Exposure impacts and social benefits of reduced nitrogen oxide emissions: A qualitative analysis.* Prepared for the U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards.

Van Houtven, G. L., Fox, T. J., Randall, C. D., & Eggleston, J. L. (1997, May). *Economic analysis of air pollution regulations: Utility and industrial boilers.* Prepared for the U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards.

Fox, T. J., Van Houtven, G. L., & Randall, C. D. (1997, May). *Regulatory impact analysis of air pollution regulations: Utility and industrial boilers.* Prepared for the U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards.

Fox, T. J., Randall, C. D., & Van Houtven, G. L. (1996, September). *Economic analysis of air pollution regulations: Oil and natural gas production.* Prepared for the U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards.

Van Houtven, G. L., T. H. Bingham, & Morris, G. E. (1996, August). *Pricing residential solid waste management services: An experimental evaluation.* Prepared for the U.S. Environmental Protection Agency.

Van Houtven, G. L., & Martin, S. A. (1996, August). *Outreach and extension at North Carolina State University: Process and impact: Phase 2 report: Pilot testing and development of data requirements.* Prepared for North Carolina State University, Outreach and Extension and Division of Continuing Studies.

Van Houtven, G. L., Randall, C. D., & Gross, D. H. (1995, February). *The boiler market: A profile.* Prepared for the U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards.

Jeanne M. VanBriesen

Director, Water QUEST (Water Quality in Urban Environmental Systems) Center
Professor, Department of Civil and Environmental Engineering
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Education

Ph.D. Civil (Environmental) Engineering, Northwestern University (1998)
M.S. Civil (Environmental) Engineering, Northwestern University (1993)
B.S. Education (Chemistry), Northwestern University (1990)

Professional Experience

Carnegie Mellon University	*Pittsburgh, PA*
Director, Water QUEST Center	7/05 to present
Professor	7/08 to present
Associate Professor	7/05 to 6/08
Assistant Professor	7/99 to 6/05

Awards

- Achievement Rewards for College Scientists (ARCS) Foundation annual merit award and summer research stipend, 1993-1998.
- National Science Foundation Career Award, 2001.
- George Tallmann Ladd Award for outstanding research and professional accomplishments and potential, College of Engineering, Carnegie Mellon University, 2001-2002.
- Paul Christiano (E 1964, 1965, 1968) and Norene Christiano (MM 1964, 1971) Faculty Fellowship; Carnegie Mellon University, 2005-2006.
- Pennsylvania Water Environment Association Professional Research Award. 2007.
- Selected Participant Indo-U.S. Frontiers of Engineering Symposium, Infrastructure, 2008.
- Professor of the Year, American Society of Civil Engineers (ASCE) Pittsburgh Chapter, 2009.
- West Chester East High School Hall of Fame (Alma Mater), 2009
- McGraw-Hill / AEESP Award for Outstanding Teaching in Environmental Engineering and Science, 2009.

Publications

1. VanBriesen, J.M. and B.E. Rittmann (**1999**), "Modeling speciation effects on biodegradation in mixed metal/chelate systems," *Biodegradation* 10:315-330.
2. VanBriesen, J.M. and B.E. Rittmann (**2000**), "Mathematical description of microbiological reactions involving intermediates," *Biotechnology and Bioengineering* 67:1:35-52.
3. VanBriesen, J.M. , B.E. Rittmann, L. Xun, D.C. Girvin, H. Bolton, Jr. (**2000**), "The rate controlling form of nitrilotriacetate for biodegradation by *Chelatobacter heintzii*," *Environmental Science and Technology*, 34: 3346-3353.
4. VanBriesen, J.M. (**2001**) "Thermodynamic Yield Predictions for Biodegradation through Oxygenase Activation Reactions *Biodegradation 12(4) 265-281.*
5. Yuan, Z. and VanBriesen, J.M. (**2002**) "Yield prediction and stoichiometry of multi-step biodegradation reactions involving oxygenation," *Biotechnology and Bioengineering* 80:1: 100-113.
6. VanBriesen, J.M.. (**2002**) "Evaluation of methods to predict bacterial yield using thermodynamics," *Biodegradation*, 13:171-190.
7. Karcher, S.C., Small, M.J., and VanBriesen, J.M., (**2004**) "Statistical method to evaluate the occurrence of PCB transformations in river sediments with application to Hudson River Data," *Environmental Science and Technology* 38:6760-6766.
8. Xiao, Jinghua and J.M. Vanbriesen, (**2006**) "Expanded thermodynamic model for microbial yield prediction," *Biotechnology and Bioengineering*. 93:1:110-121.
9. Yuan, Zhiwen and VanBriesen, J.M. (**2006**) "Intermediate formation in biodegradation of EDTA and NTA," *Environmental Engineering Science,* 23:3: 533-544.
10. Escoriza, M., VanBriesen, J.M., Stewart, S., Maier, J., Treado, P. (**2006**) "Raman Spectroscopy and Chemical Imaging for quantification of filtered waterborne bacteria," *Journal of Microbiological Methods*, 66:1:63-72.

11. Weber, C.L., VanBriesen, J.M., and Small, M.J. (**2006**) “A Stochastic Regression Approach to Analyzing Thermodynamic Uncertainty in Chemical Speciation Modeling,” *Environmental Science and Technology*, 40:12: 3872-3878.
12. Escoriza, M.F., VanBriesen, J.M., Stewart, S. and Maier, J., (**2006**) “Studying bacterial metabolic states using Raman spectroscopy,” *Applied Spectroscopy,* 60, no. 9.
13. Karcher, S., VanBriesen, J.M., and Small, M.J (**2007**) "Numerical Method to Elucidate Likely Target Positions of Chlorine Removal in Anaerobic Sediments undergoing Polychlorinated biphenyl dechlorination," *ASCE Journal of Environmental Engineering*, 133(3): 278-286.
14. Helbling, D.E. and J.M. VanBriesen (**2007**) “Free Chlorine Demand and Cell Survival of Microbial Suspensions,” Water Research, 41(19) 4424-4434.
15. Escoriza, M.F. and VanBriesen, J.M. (**2007**) “Raman spectroscopic discrimination of cell response to chemical and physical inactivation,” Applied Spectroscopy 61: 812-823.
16. Yuan, Z and VanBriesen, J.M. (**2008**) “Bacterial Growth Yields on EDTA, NTA, and their Biodegradation Intermediates,” *Biodegradation* 19(2): 41-52.
17. Isovitsch, S. L. and VanBriesen, J. M. (**2008**) "Sensor placement and optimization criteria dependencies in a water distribution system." *ASCE Journal of Water Resources Planning & Management* 134(2): 186-196.
18. Xiao, Jinghua and J.M. VanBriesen (**2008**) “Expanded thermodynamic true yield prediction model: adjustment and evaluation,” *Biodegradation* 19(1): 99-127.
19. Xu, Jianhua; Fischbeck, P., Small, M., VanBriesen, J., Casman, E. (**2008**), “Identifying sets of key nodes for placing sensors in dynamic water distribution networks,” *ASCE Journal of Water Resources Planning and Management*, 134:4: 378-385.
20. Helbling, D.E., and J.M. VanBriesen (**2008**) “Continuous Monitoring of Residual Chlorine Concentrations in Response to Controlled Microbial Intrusions in a Laboratory-Scale Distribution System,” *Water Research* 42(12): 3162-72.
21. Krause, A., Leskovec, J., Guestrin, C., VanBriesen, J., Faloutsos, C. (**2008**) ‘’Efficient Sensor Placement Optimization for Securing Large Water Distribution Networks,’’ *ASCE Journal of Water Resources Planning and Management*, 134(6): 516-526.
22. Francis, R.A., Small, M.J., VanBriesen, J.M. (**2008**). “Statistical analysis of DBP speciation and formation patterns: A compositionally-based mixture approach.” *Proceedings of the UNC Safe Drinking Water Symposium*, 4-6 November, 2008. University of North Carolina-Chapel Hill.
23. Isovitsch, S.L. and VanBriesen, J.M. (**2009**) “Booster disinfection for response to contamination in a drinking water distribution system.” *ASCE Journal of Water Resources Planning & Management* 135 (6) 502-511.
24. Helbling, D.E. and VanBriesen, J.M. (**2009**) “Modeling residual chlorine response to a microbial contamination event in drinking water distribution systems,” *ASCE Journal of Environmental Engineering*. 135 (10): 918-927.
25. Isovitsch, S.L. and VanBriesen, J.M. (**2009**) “Evaluating temporal bias in bacterial indicator samples for an urban watershed,” *ASCE Journal of Environmental Engineering.* 135 (12) 1294-1303.
26. Francis, R.A., Small, M.J., VanBriesen, J.M. (**2009**) “Multivariate distributions of disinfection byproducts in chlorinated drinking water,” *Water Research.* 43: 3453-3468.
27. Xu, J., Small, M., Fischbeck, P.S., and VanBriesen, J.M. (**2010**) “Integrating location models with Bayesian Analysis to inform decision making in deploying sensors in water distribution networks,” accepted and in press *ASCE Journal of Water Resource Planning and Management.*
28. Schoen, M., Small, M.J., and VanBriesen, J.M. (**2010**) “Bayesian Model for Flow-Class Dependent Distributions of Fecal-Indicator Bacterial Concentration in Surface Waters,” *Water Research* 44:3: 1006-1016.
29. Hughes, A., VanBriesen, J.M., Small, M. (**2010**) “Identifying candidate pathways for the augmentation of anaerobic polychlorinated biphenyl (PCB) dechlorination patterns,” *Environmental Science and Technology* 44(8): 2842-2848.
30. Francis, R.A., VanBriesen, J.M., Small, M.J. (**2010**) “Bayesian statistical modeling of disinfection byproduct (DBP) bromine incorporation in the Information Collection Rule (ICR) database.” *Environmental Science and Technology* 44(4): 1232-1239.

Curriculum Vitae, Donald Robert van der Vaart

Education

B.S., Chemistry, University of North Carolina at Chapel Hill, 1979.
M.S., Chemical Engineering (minor in Mathematics), N. C. State University, Raleigh, 1982.
Ph.D., Chemical Engineering, Trinity College, University of Cambridge (England), 1985.
J.D., North Carolina Central University School of Law, *Cum Laude*, 2009

Employment History

2017-pres	NC Division of Air Quality, Environmental Program Manager II
2015-2017	Secretary. NC Department of Environmetal Quality
2014-2015	Chief Deputy Secretary, NCDENR
2014-2015	Energy Policy Advisor, NCDENR
2012-2015	Lecturer for ARE 309: Environemntal Law and Policy, N.C. State University
2006-2014	NC Division of Air Quality, Environmental Program Manager II
1997-2006	NC Division of Air Quality, Environmental Engineering Supervisor II
1996-1997	CP&L, Manager, Environmental Services
1995-1996	CP&L, Manager, Environmental Programs - Air
1994- 1995	NC Division of Environmental Management, Environmental Supervisor II; Adjunct Associate Professor, Department of Environmental Engineering, N. C. State University
1993-1994	NC Division of Environmental Management, Environmental Supervisor I
1989-1992	Virginia Polytechnic Institute and State University, Research Scientist.
1988-1989	Research Triangle Institute, Senior Research Engineer.
1986-1988	Research Triangle Institute, Research Engineer.
1985-1986	Shell Development Company, Assistant Research Engineer.

Professional Societies, Honors

CP&L Council of Leaders
Professional Development Award (RTI)
Shell Safety Award
Trinity College (Cambridge) Bursary Scholarship
Chi Psi Educational Trust Scholarship
Tau Beta Pi (Engineering Honor Society)

Committees and Boards

Member of the CAAAC Title V Task Force
Executive Board of Directors, N.C. Biotechnology Center 1996 - 2000
Member on numerous graduate committees for M.S. and Ph.D. students at Virginia Polytechnic Institute (chemical engineering) and N.C. State University (environmental engineering)
Board of Directors, Carolina Air Pollution Control Association
Member N.C. Energy Policy Council

Publications

Technical Publications

1. Michael A. Freeman, Donald R. van der Vaart, Franklin A, Schultz, and Charles N. Reilley, “Carbon-13 Nuclear Magnetic Resonance Studies of Oxotungsten (VI) Complexes with Aminopolycarboxylic Acid Ligands, *J. Coord. Chem.* Vol. 11 pp. 81-90, 1981.

2. D. R. van der Vaart and J. F. Davidson, "The Combustion of Propane, Premixed with Air, in a Fluidized Bed," Fluidization V Conference, 1986.

3. D. R. van der Vaart, "The Chemistry of Premixed Hydrocarbon/Air Combustion in a Fluidized Bed," *Combustion and Flame*, 71: 35-39, 1988.

4. D. R. van der Vaart, "Freeboard Ignition of Premixed Hydrocarbon Gas in a Fluidized Bed," *Fuel*, 67, 7, 1003-1007, 1988.

5. D. R. van der Vaart and E. P. Stahel, "An Investigation of the Modified Fouling Index as a Test for Plugging Potential of Pretreated Seawater," *Desalination*, 68: 45-56, 1988.

6. D. R. van der Vaart and H. R. van der Vaart, "Use of a Second, Endothermic Reaction to De-Sensitize a Tubular Reactor," *A.I.Ch.E. Journal*, 37, no. 2, pp. 225-232, 1991.

7. D. R. van der Vaart, W. M. Vatavuk and A. Wehe, "Thermal and Catalytic Incinerators for the Control of VOCs," *JAPCA*, 41, no. 1, pp.92-98, 1991.

8. D. R. van der Vaart, W. M. Vatavuk and A. Wehe, "Thermal and Catalytic Incinerators for the Control of VOCs, II: Cost Estimation," *JAPCA*, 41, no. 4, pp.497-501, 1991.

9. D. R. van der Vaart, "Mathematical Modeling of Methane Combustion in a Fluidized Bed," *Ind. Eng. Chem. Res*., 31, no. 4, pp. 999-1007, 1992.

10. D. R. van der Vaart and H. R. van der Vaart, "On the Use of Sensitivity Analysis to Describe an Endothermic/Exothermic Reaction System," *A.I.Ch.E. Journal*, 38, no. 3, pp. 345-349, 1992.

11. D. R. van der Vaart, "Prediction of Axial Concentration Profiles in a Catalytic Fluidized Bed," *A.I.Ch.E Journal*, 38, no. 8, pp. 1157-1160, 1992.

12. D. R. van der Vaart, "Diffusion Coefficients of Alkali Metals in β''/β-Al_2O_3," *Solid State Ionics*, 59, pp. 223-227, 1993.

13. D. R. van der Vaart, "Solid State Hydrogen Conduction in a Novel Process for Hydrogen Addition," *Solid State Ionics*, 67, pp. 45-50, 1993.

14. D. R. van der Vaart, “Calculating the Potential to Emit Particulate Matter,” *Pollution Engineering*, vol. 28, no. 9, pp. 54-55, 1996.

Invited Review

15. D. R. van der Vaart, Marchand, E. and A. Bagley-Pride, "Thermal and Catalytic Incinerators," invited review for *Critical Reviews in Environmental Science and Technology*, vol. 24, no.3, pp. 203-236, 1994.

Legal Publications

16. D. R. van der Vaart and W. D. Willets, "Seeking Alternative Compliance Approaches for North Carolina Air Toxics Regulation," *The North Carolina Environmental Law Letter*, 4, no.8, 1993.

17. C. S. Carter and D. R. van der Vaart, "North Carolina Operating Permits under the Clean Air Act - The 1993 Emissions Inventory and Beyond," *Environmental News*, North Carolina Bar Association, vol. 6, 1, pp. 5-10, 1994.

18. J. C. Evans and D. R. van der Vaart, "Can You Benefit from North Carolina's New Netting Procedures?" *The North Carolina Environmental Law Letter*, 5, no.2, 1994.

19. D. R. van der Vaart and J. C. Evans, "Integration of the State and Federal Air Toxics Programs," *The North Carolina Environmental Law Letter*, 5, no. 11, 1994.

20. J. C. Evans and D. R. van der Vaart, "Pollution Control Projects under New Source Review," *The North Carolina Environmental Law Letter*, 5, no. 9, 1995.

21. W. D. Willets and D. R. van der Vaart, "New Source Performance Standards for Existing and New Medical Waste Incinerators," *Environmental News*, North Carolina Bar Association, March 1995.

22. John C. Evans and D. R. van der Vaart, "EPA Guidance for Air Permit Applications," *The North Carolina Environmental Law Letter*, *6*, no. 5, 1995.

23. D. R. van der Vaart and J. C. Evans, "EPA's Latest Proposed Changes to the Title V Operating Permit Program," *The North Carolina Environmental Law Letter*, *6*, no. 7, 1995.

24. D. R. van der Vaart and J. C. Evans, "Applicability under Case-by-Case MACT: 112(g) of the Clean Air Act," American Bar Association Symposium on the Environment, RTP, September, 1996.

25. D. R. van der Vaart and J. C. Evans, "Any Credible Evidence Rule," *The Environmental Law Letter*, 8, no. 1, 1997.

26. D. R. van der Vaart and J. C. Evans, "Requirements for Class I Impacts under the Clean Air Act," American Bar Association Symposium on the Environment, Asheville, NC, October, 1997.

27. John C. Evans, D. R. van der Vaart and Charles S. Carter, "The Title V Permit Shield: Can It Survive the Credible Evidence Rule?," *Environmental Manager*, April 1998, pp. 13 - 19.

28. D. R. van der Vaart and John C. Evans, "Regulators Clash over Title V Interpretations," in *North Carolina Environmental Insights*, vol. 3, no. 6, June 1998, pp. 2 - 3.

29. D. R. van der Vaart, and John C. Evans, "Proposed Requirements for Class I Impacts under New Source Review," *BNA Environmental Reporter*, 29, no. 15, pp. 763 - 767, August 7, 1998.

30. D. R. van der Vaart and John C. Evans, "New State Air Toxics Rules Compared," in *North Carolina Environmental Insights*," vol. 3, no. 8, August 1998, pp. 8 – 11.

31. C. S. Carter, and D. R. van der Vaart, "The Ozone Transport Dilemma: Is EPA's NO_X SIP Call the Solution?" *Natural Resources & Environment*, American Bar Association, Fall, 1998, pp. 394 – 402.

32. D. R. van der Vaart and John C. Evans, "Title V Permit Shield and Compliance certification" *Proceedings of the AWMA Environmental Permitting Symposium*, Feb. 17 – 19, 1999, pp. 991 – 997.

33. M. D. Huncik, and D. R. van der Vaart, "An Analysis of Visibility and Regional Haze," in *Proceedings of the AWMA Environmental Permitting Symposium*, Feb. 17 – 19, 1999, pp. 612 – 621.

34. D. R. van der Vaart, "Relaxation of NSR Avoidance Limits – Revisited," in *Air Pollution Consultant*, Volume 11, Issue 7, 2001, pp. 5.5-5.6.

35. D. R. van der Vaart and J. C. Evans, "Complaince under Title V: Yes, No, or I Don't Know," in *Virgina Environmental Law Journal*, vol. 21:1, 2002, pp. 1 – 70.

36. D. R. van der Vaart and John C. Evans, "Risk Based Standards for Hazardous Air Pollutants: Finally – A Win-Win for All," in *Environmental News* published by the N. C. Bar Association, Volume 14, no. 2, 2002, pp. 9 – 10.

37. John C. Evans, and D. R. van der Vaart, "EPA's Once in Always In MACT policy: The Controversy Continues" in *Environmental Manager*, February 2003, pp. 36 – 40.

38. D. R. van der Vaart and John C. Evans, "Title V Compliance in the Aftermath of Changes to the Part 70 Rules," *Environmental Manager*, May 2005, pp.23 - 26.

39. John C. Evans and D. R. van der Vaart, "EPA's Startup, Shutdown, and Malfunction Policy: "The Cart and the Horse Are in the Ditch?" in *ELR News and Analysis*, Volume 35, no. 7, July 2005, pp. 10474 – 10480.

40. D. R. van der Vaart and John C. Evans, "Location, Location, Location, Did *North Carolina* Go Far Enough?" *Vermont Journal of Environmental Law*, volume 10, issue 2, pp. 267-290, Winter 2009.

41. D. R. van der Vaart, "Permit Objections under Title V," ABA Section of the Environment, Energy, and Resources, 18th annual meeting, New Orleans, LA, September 29, 2010.

42. D. R. van der Vaart, "The Move to Micro-Scale Nonattainment Areas," *Trends*, ABA Environmental, Energy, and Resources Newsletter, May/June 2011.

43. John C. Evans, and D. R. van der Vaart, "When Maybe is Good Enough: The Title V Citizen Petition," *Environmental Law Reporter*, 41 ELR 10092, issue 2, 2011.

44. D. R. van der Vaart and John C. Evans, "GHG Regulation – The Siren Song of Cap-and-Trade," *Trends*, ABA Environmental, Energy, and Resources Newsletter, May/June 2012.

45. D. R. van der Vaart, John C. Evans, Charles S. Carter, "Clean Air Update," Annual Meeting of Environmental Section, NC Bar Association, Wilmington, NC, April 26, 2013.

46. D. R. van der Vaart and John C. Evans, “PM 2.5 Increment: Winners and Losers,” *Trends*, ABA Environmental, Energy, and Resources newsletter, vol. 45, (Nov., 2013).

47. D. R. van der Vaart and John C. Evans, “The Clean Air Act: An Environmental Veneer for Protectionism?” accepted for publication in *Environemtal Law Reporter*, 2013.

Patents

"A Novel Methane Oxidative Coupling Catalyst," Patent No. 5,321,185, awarded June 14, 1994.
“Oxidative Coupling Catalyst,” Patent No. 5,849,973, awarded December 15, 1998.

Licenses

North Carolina Professional Engineer
North Carolina Bar

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EDUCATION

Ph.D.	University of Iowa	1998	Environmental Engineering
MSCE	University of Iowa	1995	Environmental Engineering
BA	Grinnell College	1993	Chemistry

PROFESSIONAL EXPERIENCE

2002 – Present Full (2013-), Associate (2007-2013) and Assistant (2002-2007) Professor, Department of Civil and Environmental Engineering, Virginia Polytechnic Institute and State University

1999 – 2001 Postdoctoral Associate, Department of Geography and Environmental Engineering, The Johns Hopkins University

1993 – 1998 Graduate Research Assistant, Department of Civil and Environmental Engineering, The University of Iowa

HONORS

- Gastprofessor (Visiting Professor), ETH Zurich (2017)
- Association of Environmental Engineering and Science Professors (AEESP) Distinguished Service Award for Outstanding Service as AEESP President (2017)
- Virginia Tech College of Engineering Dean's Award for Excellence in Research (2017)
- Advisor to Haoran Wei, recipient American Chemical Society Division of Environmental Chemistry Ellen Gonter Paper Award (2017)
- Advisor to Haoran Wei and Marjorie Willner, recipients American Chemical Society Division of Environmental Chemistry Graduate Student Awards (2017)
- Elected Fellow of the Royal Society of Chemistry (2016)
- Advisor to Matthew Chan, recipient American Chemical Society Division of Environmental Chemistry Graduate Student Award (2016)
- *Environmental Science and Technology* "Super Reviewer" Award (2015)
- Lead Guest Editor for a special issue of *Environmental Engineering Science* focused on the Grand Challenges of Environmental Engineering and Science in the 21st Century.
- Advisor to Paramjeet Pati, recipient American Chemical Society Division of Environmental Chemistry Graduate Student Award (2015)
- Advisor to Ronald Kent, recipient American Chemical Society Division of Environmental Chemistry Graduate Student (2013) and Ellen Gonter Paper (2014) Awards

- UPS Foundation Visiting Associate Professor, Stanford University Department of Civil and Environmental Engineering (2012)
- University of Iowa Department of Civil and Environmental Engineering Richard L. Valentine Distinguished Lecturer (2012)
- Inaugural TEDxVirginia Tech Invited Presenter (2012)
- *Environmental Science and Technology* Excellence in Review Award (2012)
- Advisor to Ronald Kent, recipient EPA-STAR Graduate Student Fellowship (2012)
- Advisor to Rebecca Halvorson, recipient American Chemical Society Division of Environmental Chemistry Graduate Student Award (2012)
- Advisor to Rebecca Halvorson, recipient Abel Wolman Doctoral Fellowship, American Water Works Association (2011)
- Advisor to Matthew Hull, recipient American Chemical Society Division of Environmental Chemistry Graduate Student (2011) and Ellen Gonter Paper (2011) Awards
- Advisor to Jason Jones, recipient American Chemical Society Division of Environmental Chemistry Undergraduate Student Award (2011)
- Advisor to Krista Rule Wigginton, recipient AWWA Award for 2nd Place Best Dissertation (2010)
- Advisor to Xiaojun Chang, recipient American Chemical Society Division of Environmental Chemistry Graduate Student Award (2010)
- Association of Environmental Engineering and Science Professors (AEESP) Distinguished Service Award for Outstanding Service as Chair of the Internet Resources Committee (2008)
- Virginia Tech College of Engineering Faculty Fellow (2006-2009)
- Invited Participant at the National Academy of Engineering Japan-America Frontiers of Engineering Symposium (2005)
- Virginia Tech Scholar of the Week (August 22, 2005)
- Invited Participant at the National Academy of Sciences Keck Futures Initiative Conference on Designing Nanostructures at the Interface Between Biomedical and Physical Systems (2004)
- Virginia Tech College of Engineering Dean's Award for Outstanding Assistant Professor (2004)
- National Science Foundation CAREER Award (2004-2009)
- Invited Participant at the National Academy of Engineering Frontiers of Engineering Symposium (2003)
- ASCE Excellence in Civil Engineering Education (ExCEEd) Fellow (2002)
- Alumni Scholar – Grinnell College Department of Chemistry (2001)
- First Place American Water Works Association (AWWA) Dissertation Award (2000)
- Honorable Mention Dissertation Award from the Association of Environmental Engineering and Science Professors (AEESP) (1999)
- American Chemical Society Division of Environmental Chemistry Graduate Student Paper
  Award (1999)
- American Water Works Association Abel Wolman Doctoral Fellowship (1996-1998)

FUNDED RESEARCH PROJECTS

- "PIRE: Halting Environmental Antimicrobial Resistance Dissemination (HEARD)", PI, awarded by the *National Science Foundation*, 2015-2020 ($3,600,000).
- "NNCI: The Virginia Tech National Center for Earth and Environmental Nanotechnology Infrastructure (VT NCE^{2}NI)", co-PI, awarded by the *National Science Foundation*, 2015-2020 ($2,500,000).
- "Controlled Evaluation of Nanoparticle Dissolution Using Atomic Force Microscopy", PI, awarded by the *National Science Foundation*, 2014-2017 ($390,000).
- "Collaborative Research: Fate, Transport, and Organismal Uptake of Rod-Shaped Nanomaterials", PI, awarded by the *National Science Foundation*, 2013-2016 ($120,000). Collaborative project with N. Saleh (U. Texas-Austin) and C. Murphy (U. Illinois Urbana-Champaign).
- "Paper-Based Sensors for Airborne Pathogen Detection", co-PI, awarded by the Institute for Critical Technology and Applied Science at Virginia Tech, 2013-2015 ($248,752). PI: Linsey Marr, Virginia Tech, co-PI: Elankumaran Subbiah, Virginia Tech.
- "Fate of Nanocellulose and Impacts on Microbial Communities During Wastewater Treatment", co-PI, awarded by the *National Science Foundation*, 2012-2103 ($100,000). PI: Amy Pruden, Virginia Tech; co-PI: Scott Renneckar, Virginia Tech.
- "Inkjet Imprinted Paper for Poliovirus Detection and Differentiation", PI, awarded by the *Bill and Melinda Gates Foundation*, 2011-2012 ($100,000). Co-PIs: Krista Wigginton, U. Michigan and Tamar Kohn, EPFL.
- "Aptamer Functionalized Nanoparticles for *S. aureus* detection", PI, awarded by the *National Science Foundation*, 2011-2014 ($396,134). Co-PI: Amy Pruden, Virginia Tech.
- "Virginia Tech – Sustainable Nanotechnology Interdisciplinary Graduate Education Program" (VT-SuN IGEP), PI, awarded by the Virginia Tech Graduate School, 2011-2014 ($500,000).
- "Bionanomaterial Uptake and Fate in *Corbicula fluminea*", PI, awarded by the *National Science Foundation*, 2009-2012 ($230,000).
- "Rapid Concentration and Detection of Microcystins and Other Cyanobacterial Byproducts in Drinking Water", PI, awarded by the *Water Research Foundation*, 2009-2011 ($150,000).
- "Critical Programmatic Expansion of the ICTAS Environmental Nanoscience and Technology (ENT) Research Theme: Nanoparticle/Cell Interactions and Nanotechnology-Enabled Sensor Development", co-PI, awarded by the *Virginia Tech Institute for Critical Technology and Applied Science (ICTAS)*, 2009-2010 ($150,000).
- "Acquisition of a Confocal Raman/Atomic Force Microscope to Support Environmental Interface Research at Virginia Tech", PI, awarded by the *Virginia Tech College of Engineering SCHEV ETF*, 2009 ($493,993).
- "Development of Biosensors for Monitoring Engineered Nanomaterials in the Environment", PI, awarded by the *Virginia Tech Institute for Critical Technology and Applied Science (ICTAS)*, 2008-2009 ($16,000).
- "Collaborative Research: Formation of Polyhalogenated Dioxins and Furans from Triclosan and Polybrominated Diphenyl Ethers", PI, awarded by the *National Science*

Foundation, 2006-2008, (This is a collaborative project with the University of Minnesota; $57,000 is VT portion of total project budget of $240,000).

- "In-situ Detection of *Cryptosporidium* Using Surface Enhanced Raman Spectroscopy", PI, awarded by the *National Science Foundation*, 2006-2008, ($230,000).
- "Magnetite Nanoparticles for Environmental Remediation", PI, subcontract to EPA SBIR Phase II grant to Luna Innovations, 2006-2007 ($75,000 is VT portion).
- "Nanotox: Cross-Media Environmental Transport, Transformation, and Fate of Manufactured Carbonaceous Nanomaterials" co-PI, awarded by the *National Science Foundation*, 2005-2008 ($350,000).
- "CAREER: Formation and Reactivity of Nanoscale Corrosion Products – An Integrated Research and Education Plan" PI, awarded by the *National Science Foundation*, 2004-2009 ($400,000).
- "Construction of the Environmental BioNanoTechnology Laboratory" PI, awarded by the Virginia Tech A Support Program for Innovative Research Strategies (ASPIRES), 2005 ($82,030).
- "Magnetite Nanoparticles for Environmental Remediation" PI, subcontract to EPA SBIR Phase I grant to Luna Innovations, 2005 ($20,000 is VT portion).
- "Autogeneous Healing of Concrete in the Drinking Water Industry" PI, awarded by the *American Water Works Association Research Foundation*, 2005-2007 ($164,969).
- "Upgrading of the Vibrational Spectroscopy Laboratory at Virginia Tech" co-PI, awarded by the *National Science Foundation*, 2004-2005 ($423,009)
- "Treatability Evaluation for Three Rohm and Haas Company Chemicals of Concern" PI, subcontract to Parsons Engineering Science from Rohm and Haas, 2004 ($105,000 is VT portion)
- "Assessment of Seasonal Chlorination Practices and Impacts to Chloraminating Utilities" PI, awarded by the *American Water Works Association Research Foundation*, 2002-2005 ($510,374).
- "Evaluation of Triclosan Reactivity in Chlorinated and Monochloraminated Waters," PI, awarded by the *American Water Works Association Research Foundation*, 2002-2004 ($150,000).
- "Effect of Dissimilatory Iron Reducing Bacteria on the Longevity of Iron Permeable Reactive Barriers," PI, awarded by the *Virginia Water Resources Research Center*, 2003-2004 ($18,500).

PROFESSIONAL SERVICE AND REGISTRATIONS

National and International Service

- Editor-in-Chief, *Environmental Science: Nano*, Published by the Royal Society of Chemistry (2018-)
- President (2016-2017), President-Elect (2015-2016), and Vice-President (2014-2015) of the Association of Environmental Engineering and Science Professors (AEESP)
- Member of editorial advisory boards for *Environmental Science: Water Research and Technology* (2014-present); *Environmental Pollution* (2008-2015).

- Member of American Water Works Association Academic Achievement Award Committee (2012-2018)
- Member of Project Advisory Committee (PAC) for Water Environment Federation sponsored project “Kinetics Modeling and Experimental Investigation of Chloramine Photolysis in Ultraviolet-Driven Advanced Water Treatment” (2016-2019)
- Member of Project Advisory Committee (PAC) for AWWARF sponsored projects “Disinfection By-Product Formation and Control During Chloramination” (2000-2003) and “Exploring the Mechanisms of DXAA Formation During Chloramination (2004-2007).
- Reviewer for *Environmental Science and Technology*, *Journal of the American Chemical Society, Geochimica et Cosmochimica Acta, ASCE Journal of Environmental Engineering, Journal of Contaminant Hydrology, Water Research, Journal of Chromatography, Langmuir, Analytical Chemistry*, *Journal of Environmental Monitoring*, *Analytical Letters*, *Nature Communications*, *Journal of Raman Spectroscopy, PLOS ONE, PNAS, ACS Sustainable Chemistry and Engineering, ACS Applied Materials and Interface, Chemical Communications, ACS Nano.*
- Proposal Reviewer for *US Environmental Protection Agency, US National Science Foundation, National Institute of Environmental Health Sciences, American Chemical Society-Petroleum Research Fund, Hong Kong University of Science and Technology, Swiss National Science Foundation, Singapore Agency for Science Technology and Research (A*STAR), Israeli Ministry of Science and Technology,*
- Tenure package review for *Lafayette College, UC-Riverside, U. Nebraska, U. Akron, Washington University in St. Louis, Rensselaer Polytechnic Institute, Northeastern University, Harvard University, University of South Carolina, Johns Hopkins University, UCLA*
- Member of the AEESP Internet Resources Committee. Vice-Chair (2005), Chair (2006), past-chair (2007).

University Service

- Director of the Virginia Tech Sustainable Nanotechnology Interdisciplinary Graduate Education Program (SuN IGEP; 2012-present)
- Director of the Virginia Tech ICTAS Sustainable Nanotechnology (VTSuN) Program (2014-present)
- Member of the Virginia Tech College of Engineering International Programs Faculty Committee (2015-present)
- Member of the CEE Department Graduate Education Committee (2012-present)
- Member of the Virginia Tech Institute for Critical Technology and Applied Science (ICTAS) Advisory Board (2006-2009)
- Member of the CEE Department Faculty Awards Committee (2005-2007).
- Member of Environmental and Water Resources Engineering Graduate Admissions Committee (2002-2014).

Registrations

- Registered Iowa Engineer Intern # 12964

PROFESSIONAL AFFILIATIONS

- American Association for the Advancement of Science (AAAS)
- American Chemical Society (Environmental Chemistry and Geochemistry Divisions)
- American Society for Engineering Education (ASEE)
- American Society for Microbiology (ASM)
- American Water Works Association (AWWA)
- Association of Environmental Engineering and Science Professors (AEESP)
- Water Environment Federation (WEF)

PUBLICATIONS

1. Wei, H.; McCarthy, A.; Song, J.; Zhou, W.; and Vikesland, P.J. (2017) "Quantitative SERS by Hot Spot Normalization – Surface Enhanced Rayleigh Band Intensity as an Alternative Evaluation Parameter for SERS Substrate Performance" *Faraday Discussions*, *In Press.*
2. Li, Y.; Geng, X.; Leng, W.; Vikesland, P.J.; and Grove, T.Z. (2017) "Gold Nanospheres and Gold Nanostars Immobilized onto Thiolated Eggshell Membranes as Highly Robust and Recyclable Catalysts" *New Journal of Chemistry*, *In Press*.
3. Dai, D.; Prussin, A.J.; Marr, L.C.; Vikesland, P.J.; Edwards, M.E.; and Pruden, A.J. (2017) "Factors Shaping the Human Exposome in the Built Environment: Opportunities for Engineering Control." *Environmental Science and Technology, In Press*. (http://dx.doi.org/10.1021/acs.est.7b01097).
4. Abtahi, S.M.H.; Burrows, N.D.; Idesis, F.A.; Murphy, C.J.; Saleh, N.B.; and Vikesland, P.J. (2017) "Sulfate Mediated End-to-End Assembly of Gold Nanorods". *Langmuir*, Vol. 33, pp. 1486-1495 (http://dx.doi.org/10.1021/acs.langmuir.6b04114).
5. Vikesland, P.J. (2017) "Introduction – Environmental Engineering Science in the 21st Century" *Environmental Engineering Science*, Vol. 34, pp. 1-2 (http://dx.doi.org/10.1089/ees.2016.0548).
6. Pati, P.; McGinnis, S.; and Vikesland, P. (2016) "Waste Not Want Not: Life Cycle Implications of Gold Recovery and Recycling from Nanowaste." *Environmental Science: Nano*, Vol. 3, pp. 1133-1143. (http://dx.doi.org/10.1039/c6en00181e).
7. Singh, G.; Chandoha-Lee, C.; Zhang, W.; Vikesland, P.J.; Renneckar, S.; and Pruden, A. (2016) "Biodegradation of Nanocrystalline Cellulose by Environmentally-Relevant Anaerobic Cellulose-Degrading Consortia." *Water Research,* Vol. 104, pp. 137-146. (http://dx.doi.org/10.1016/j.watres.2016.07.073).
8. Vikesland, P.J. and Raskin, L. (2016) "Editorial: The Drinking Water Exposome" *Environmental Science: Water Research and Technology,* Vol. 2, 561-564. (http://dx.doi.org/10.1039/C6EW90016J).

9. Kent, R.D. and Vikesland, P.J. (2016) "Dissolution and Persistence of Copper-Based Nanomaterials in Undersaturated Solutions with Respect to Cupric Solid Phases" *Environmental Science and Technology*, Vol. 50, 6772-6781. (http://dx.doi.org/10.1021/acs.est.5b04719).
10. Geng, X.; Leng., W.; Carter, N.A.; Vikesland, P.J.; and Grove, T.Z. (2016) "Protein-aided Formation of Triangular Silver Nanoprisms with Enhanced SERS Performance" *Journal of Materials Chemistry B*, Vol. 4, 4182-4190. (http://dx.doi.org/10.1039/C6TB00844E).
11. Riquelme, M.V.; Zhao, H.; Srinivasaraghavan, V.; Pruden, A.; Vikesland, P.J.; and Agah, M. (2016) "Optimizing Blocking of Nonspecific Bacterial Attachment to Impedimetric Biosensors" *Sensing and Bio-Sensing Research*, Vol. 8, 47-54. (http://dx.doi.org/10.1016/j.sbsr.2016.04.003).
12. Wei, H.; Willner, M.; Marr, L.; and Vikesland, P.J. (2016) "Highly Stable SERS pH Nanoprobes Produced by Co-Solvent Controlled AuNP Aggregation" *Analyst*, Vol. 141, 5159-5169. (http://dx.doi.org/10.1039/C6AN00650G).
13. Vikesland, P.J.; Rebodos, R.L.; Bottero, J.Y.; Rose, J.; and Masion, A. (2016) "Aggregation and Sedimentation of Magnetite Nanoparticle Clusters" *Environmental Science: Nano*, Vol. 3, 567-577 (http://dx.doi.org/10.1039/C5EN00155B).
14. Saverot, S.; Geng, X.; Leng, W.; Vikesland, P.J.; Grove, T.Z.; and Bickford, L.R. (2016) "Facile, Tunable, and SERS-Enhanced HEPES Gold Nanostars." *RSC Advances*, Vol. 6, 29669-29673 (http://dx.doi.org/10.1039/C6RA00450D).
15. Afrooz, A.R.M.; Das, D.; Murphy, C.M.; Vikesland, P.J.; and Saleh, N. (2016) "Co-transport of Gold Nanospheres with Single-walled Carbon Nanotubes in Saturated Porous Media." *Water Research*, Vol. 99, 7-15. (http://dx.doi.org/10.1016/j.watres.2016.04.006).
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17. Wei, H. and Vikesland, P.J. (2015) "pH-Triggered Molecular Alignment for Reproducible SERS Detection via an AuNP/Nanocellulose Platform." *Scientific Reports*, Vol. 5, Article number: 18131, (http://dx.doi.org/10.1038/srep18131).
18. Leng, W.; Pati, P.; and Vikesland, P.J. (2015) "Room Temperature Seed Mediated Growth of Gold Nanoparticles: Mechanistic Investigations and Life Cycle Assessment" *ES:Nano*, Vol. 2, 440-453. (http://dx.doi.org/10.1039/C5EN00026B) **Featured Cover Article.**
19. Metch, J.; Pruden, A.; and Vikesland, P.J. (2015) "Enhanced Disinfection By-Product Formation Due to Nanoparticles in Wastewater Treatment Plant Effluents", *ES:WR&T*, Vol. 1, pp. 823-831 (http://dx.doi.org/10.1039/C5EW00114E)
20. Wei, H.; Rodriguez, K.; Renneckar, S.; Leng, W.; and Vikesland, P.J. (2015). "Preparation and Evaluation of Nanocellulose-Gold Nanoparticle Nanocomposites

for SERS Applications" *The Analyst*, Vol. 140, pp. 5640-5649 (http://dx.doi.org/10.1039/C5AN00606F)

21. Saverot, S.-E.; Reese, L.M.; Cimini, D.; Vikesland, P.J.; and Bickford, L.M. (2015). "Characterization of Conventional One-Step Sodium Thiosulfate Facilitated Gold Nanoparticle Synthesis" *Nanoscale Research Letters*, Vol. 10. (http://dx.doi.org/10.1186/s11671-015-0940-1)
22. Lahr, R.H.; Wallace, G.; and Vikesland, P.J. (2015). "Raman Based Characterization of Microfluidic Paper-Based Analytical Devices (µPADs)" *ACS Applied Materials and Interfaces*, Vol. 7, pp. 9139-9146. (http://dx.doi.org/10.1021/acsami.5b01192)
23. Wei, H.; Abtahi, S.H. and Vikesland, P.J. (2015). "LSPR-based Colorimetric and SERS Sensors for Environmental Analysis" *Environmental Science: Nano*, Vol. 2, pp. 120-135. (http://dx.doi.org/10.1039/C4EN00211C).
24. Yuan, L.; Zhi, W.; Liu, Y.; Karyala, S.; Vikesland, P.; Chen, X.; and Zhang, H. (2015). "Lead Toxicity to the Performance, Viability, and Community Composition of Activated Sludge Microorganisms" *Environmental Science and Technology*, Vol. 49, pp. 824-830. (http://dx.doi.org/10.1021/es504207c)
25. Ma, Y.; Metch, J.W.; Vejerano, E.P.; Miller, I.J.; Leon, E.C.; Marr, L.C.; Vikesland, P.J.; and Pruden, A. (2015). "Microbial Community Response of Nitrifying Sequencing Batch Reactors to Silver, Zero-Valent Iron, Titanium Dioxide and Cerium Dioxide Nanomaterials." *Water Research*, Vol. 68, pp. 87-97. (http://dx.doi.org/10.1016/j.watres.2014.09.008)
26. Leng, W.L. and Vikesland, P.J. (2014). "MGITC Facilitated Formation of AuNP Multimers." *Langmuir*, Vol. 30, pp. 8342-8349. (http://dx.doi.org/10.1021/la501807n)
27. Wei, H.; Rodriguez, K.; Renneckar, S.; and Vikesland, P.J. (2014). "Environmental Science and Engineering Applications of Nanocellulose-Based Nanocomposites." *Environmental Science: Nano*, Vol. 1, pp. 302-316. (http://dx.doi.org/10.1039/C4EN00059E)
28. Kent, R.; Oser, J.; and Vikesland, P.J. (2014). "Controlled Evaluation of Silver Nanoparticle Sulfidation in a Full-Scale Wastewater Treatment Plant." *Environmental Science and Technology*, Vol. 48, pp. 8564-8572. (http://dx.doi.org/10.1021/es404989t)
29. Lahr, R.H. and Vikesland, P.J. (2014). "Surface-Enhanced Raman Spectroscopy (SERS) Cellular Imaging of Intracellularly Biosynthesized Gold Nanoparticles." *ACS Sustainable Chemistry and Engineering*, Vol. 2, pp. 1599-1608. (http://dx.doi.org/10.1021/sc500105n) **Featured on Cover.**
30. Pati, P.; McGinnis, S.; and Vikesland, P.J. (2014). "Life Cycle Assessment of "Green" Nanoparticle Synthesis Method." *Environmental Engineering Science*, Vol. 31, pp. 410-420. (http://dx.doi.org/10.1089/ees.2013.0444)
31. Chan, M.Y. and Vikesland, P.J. (2014). "Porous Media Induced Aggregation of Protein Stabilized Gold Nanoparticles" *Environmental Science and Technology*, Vol. 48, pp. 1532-1540 (http://dx.doi.org/10.1021/es404455w)

32. Pati, P.; Kent, R.; and Vikesland, P.J. (2013). “Nanoparticle Based Sensors for Water Quality Testing” in *Nanotechnology for Water and Wastewater Treatment*, Eds. Lens, Virkutye, Jegatheesan, Kim, and Al Abed, IWA Publishing, pp. 357-373.
33. Liu, D.; Xiu, Z.; Liu, F.; Wu, G.; Adamson, D.; Newell, C.; Vikesland, P.; Tsai, A-L; and Alvarez, P.J. (2013). “Perfluorooctanoic Acid Degradation in the Presence of Fe(III) under Natural Sunlight” *J. Hazardous Materials,* Vol. 262, pp. 456-463. (http://dx.doi.org/10.1016/j.jhazmat.2013.09.001)
34. Chang, X. and Vikesland, P.J. (2013). “Effects of Dilution on the Properties of *n*C_{60}” *Environmental Pollution*, Vol. 181, pp. 51-59. (http://dx.doi.org/10.1016/j.envpol.2013.05.054)
35. Chang, X. and Vikesland, P.J. (2013). “Uncontrolled Variability in the Extinction Spectra of C_{60} Nanoparticle Suspensions” *Langmuir,* Vol. 29, pp. 9685-9693. (http://dx.doi.org/10.1021/la401583v)
36. Hull, M.; Warner, M.G.; Vikesland, P.J.; and Schultz, I.R. (2013) “Uptake and Retention of Metallic Nanoparticles in the Mediterranean Mussel *Mytilus galloprovincialis*” *Aquatic Toxicology*, Vol. 140-141, pp. 89-97. (http://dx.doi.org/10.1016/j.aquatox.2013.05.005)
37. Vikesland, P.; Fiss, E.M.; Wigginton, K.R.; McNeill, K.; and Arnold, W.A. (2013). “Halogenation of Bisphenol-A, Triclosan, and Chlorophenols in Chlorinated Waters Containing Iodide.” Environmental Science and Technology, Vol. 47, pp. 6764-6772. (http://dx.doi.org/10.1021/es304927j)
38. Leng, W. and Vikesland P.J. (2013). “Nanoclustered Gold Honeycombs for Surface-Enhanced Raman Scattering.” *Analytical Chemistry*, Vol. 85(3), pp 1342–1349. (http://dx.doi.org/10.1021/ac301028w)
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40. Miller, J.H.; Novak, J.T.; Knocke, W.R.; Young, K.; Hong, Y.; Vikesland, P.J.; Hull, M.S.; and Pruden, A.J. (2013). “Effect of Ag Nanoparticles and Antibiotics on Antibiotic Resistance Genes in Anaerobic Digestion.” *Water Environment Research*, Vol. 85(5), pp 411-421. (http://dx.doi.org/10.2175/106143012X13373575831394)
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45. Halvorson, R.; Leng, W.; and Vikesland, P.J. (2011). "Microcystin, Nodularin, and Component Amino Acid Identification by Drop Coating Deposition Raman Spectroscopy" *Analytical Chemistry*, Vol. 83, pp. 9273-9280. (http://dx.doi.org/10.1021/ac201617g)
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48. Halvorson, R. and Vikesland, P. (2011). "Drop Coating Deposition Raman (DCDR) for Microcystin-LR Identification and Quantitation" *Environmental Science and Technology* Vol. 45, pp. 5644-5651. (http://dx.doi.org/10.1021/es200255y)
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ARTICLES SUBMITTED OR IN PREPARATION

85. Li, A-D; Metch, J.; Wang, Y.; Garner, E.; Zhang, A.N.; Riquelme, M.V.; Vikesland, P.J.; Pruden, A.; and Zhang, T. (201x) "Effects of Sample Preservation and DNA Extraction on Enumeration of Antibiotic Resistance Genes in Wastewater". *In Review*.

86. Metch, J.W.; Burrows, N.D.; Murphy, C.J.; Pruden, A.; and Vikesland, P.J. (201x) "Metagenomic Analysis of Microbial Communities Yields Insight into Impacts of Nanoparticle Design". *In Review*, Nature Nanotechnology.

87. Arango, G.; Garner, E.; Pruden, A.; Heath, L.S.; Vikesland, P.; and Zhang, L. (201x) "DeepARG: A Deep Learning Approach for Predicting Antibiotic Resistance Genes from Metagenomic Data". *In Review*.

88. Chan, M.Y.; Leng, W.; and Vikesland, P.J. (201x) “Surface-Enhanced Raman Spectroscopy Characterization of Salt Induced Aggregation of Gold Nanoparticles”. *In Review*.

89. Riquelme, M.V.; Leng, W.; Carzolio; Pruden, A.; and Vikesland, P.J. (201x) “Stable Oligonucleotide-Functionalized Gold Nanosensors for Environmental Biocontaminant Monitoring”. *In Review*.

90. Vikesland, P.J.; Pruden, A.; Alvarez, P.J.J.; Aga, D.; Bürgmann, H.; Li, X.-D.; Manaia, C.; Nambi, I.; Wigginton, K.; Zhang, T.; and Zhu, Y.-G. (201x). “Towards a Comprehensive Strategy to Mitigate Dissemination of Environmental Sources of Antibiotic Resistance - What does the Presence of a Gene Tell Us?” *In Review.*

91. Wei, H.; Leng, W.; Song, J.; Willner, M.R.; Marr, L.C.; Zhou, W.; and Vikesland, P.J. (201x). “Quantitative SERS Enabled by Surface Plasmon Enhanced Elastic Light Scattering” In Preparation for requested re-submission to *Nature.*

92. Chan, M.; Leng, W.; and Vikesland, P.J. (201x). “Investigating Mono- and Divalent Cation Induced Aggregation of Gold Nanoparticles in Aqueous Environments via Surface-Enhanced Raman Spectroscopy” *In Preparation*

93. Liu, C.; Leng, W.; and Vikesland, P.J. (201x). “Controlled Evaluation of the Effects of Surface Coating on Silver Nanoparticle Dissolution Rates” *In Preparation.*

94. Zhou, X.; Leng, W.; Marr, L.C.; and Vikesland, P.J. (201x) “One-Step Centrifugal Isolation of PEGylated Gold Nanoclusters for Single-Nanocluster Surface-Enhanced Raman Scattering” *In Preparation*.

95. Hull, M.A.; Pati, P.; MacCuspie, R.; and Vikesland, P.J. (201x). “Quantifying the Persistence of Noble Metal Nanoparticles (MetNPs) in Aqueous Matrices” *In Preparation*.

96. Jain, I.; Willner, M.; Lahr, R.H.; and Vikesland, P.J. (201x). “Production of Gold Nanoparticle Embedded Paper for SERS Applications” *In Preparation*.

PRESENTATIONS

1. Vikesland, P.J. 2017 “Antibiotic Resistance and Novel Environmental Monitoring Approaches – The Exposome” Swiss Federal Institute of Aquatic Science and Technology-EAWAG Seminar, September 22 (**Invited Seminar**).

2. Vikesland, P.J. and Wei, H. 2017 “Quantitative SERS Enabled by ‘Hot Spot’ Normalization’ Surface Enhanced Raman Scattering – SERS Faraday Discussion, Glasgow, Scotland, August 30 – September 1 (Abstract, Peer-reviewed paper, Invited Presentation)

3. Chan, M., Leng, W., and Vikesland, P.J. 2017 “Visualization, Characterization, and Analysis of Gold Nanoparticle Fate and Transport in Aqueous Porous Media Environment with Advanced Photonics Technique” 2017 AEESP Research and Education Conference, The University of Michigan, Ann Arbor, MI June 21-22 (Abstract and Oral Presentation).

4. Riquelme, M.V., Metch, J., Garner, E., Vikesland, P., and Pruden, A. 2017 “Global Survey of Antibiotic Resistance Genes in Wastewater Treatment Plants” 2017 AEESP Research and Education Conference, The University of Michigan, Ann Arbor, MI June 21-22 (Abstract and Oral Presentation).
5. Wei, H., Vejerano, E., Leng, W., Marr, L., and Vikesland, P. 2017 “In Situ Detection of pH of Individual Aerosol Droplets by Surface-Enhanced Raman Spectroscopy” 2017 AEESP Research and Education Conference, The University of Michigan, Ann Arbor, MI June 21-22 (Abstract and Oral Presentation).
6. Metch, J.W., Ma, Y., Yang, Y., Burrows, N.D., Murphy, C.J., Zhang, T., Vikesland, P.J.; and Pruden, A. “Metagenomics Reveals Nanoparticle Impact on Resistomes of Activated Sludge” 2017 AEESP Research and Education Conference, The University of Michigan, Ann Arbor, MI June 21-22 (Abstract and Poster Presentation).
7. Dai, D., Metch, J.W., Riquelme, V., Garner, E., Blair, M., Pruden, A., and Vikesland, P.J. “Metagenomics Reveals Nanoparticle Impact on Resistomes of Activated Sludge” 2017 AEESP Research and Education Conference, The University of Michigan, Ann Arbor, MI June 21-22 (Abstract and Poster Presentation).
8. Willner, M., McMillan, K., Zagnoni, M., Graham, D., and Vikesland, P.J. 2017 “Optofluidic Surface-Enhanced Raman Spectroscopy (SERS) Interrogation for Targeted Detection of Individual Cells” 2017 AEESP Research and Education Conference, The University of Michigan, Ann Arbor, MI June 21-22 (Abstract and Poster Presentation).
9. Liu, C.; Leng, W.; and Vikesland, P.J. 2017 “Controlled Evaluation of the Impacts of Surface Coatings on Silver Nanoparticle Dissolution” 2017 AEESP Research and Education Conference, The University of Michigan, Ann Arbor, MI June 21-22 (Abstract and Poster Presentation).
10. Chan, M., Leng, W., and Vikesland, P.J. 2017 “Low Frequency Vibrational Mode Surface Enhanced Raman Spectroscopy Characterization of Gold Interactions with Aqueous Halides” American Chemical Society National Meeting, San Francisco, CA April 2-6 (Abstract and Oral Presentation).
11. Willner, M., McMillan, K., Zagnoni, M., Graham, D., and Vikesland, P.J. 2017 “High Throughput Optofluidic Surface-Enhanced Raman Spectroscopy (SERS) Interrogation: Proof of Concept via Lectin Detection of Cancerous Cells” American Chemical Society National Meeting, San Francisco, CA April 2-6 (Abstract and Oral Presentation).
12. Vikesland, P.J., Wei, H., Leng, W., Breazeal, V.R., and Willner, M. 2017 “Environmental Applications of Nanoparticle-Enabled Sensing” American Chemical Society National Meeting, San Francisco, CA April 2-6 (Abstract and Oral Presentation).
13. Wei, H., Willner, M. Marr, L.C., and Vikesland, P.J. 2017 “Highly Stable SERS Nanoprobes for pH Detection in Confined Water Environment” American Chemical

Society National Meeting, San Francisco, CA April 2-6 (Abstract and Oral Presentation).

14. Willner, M., Graham, D., Zagnoni, M., and Vikesland, P.J. 2017 “Optofluidic Surface-Enhanced Raman Spectroscopy (SERS) Interrogation for Targeted Detection of Individual Cells” American Chemical Society National Meeting, San Francisco, CA April 2-6 (Abstract and Oral Presentation).
15. Liu, C., Leng, W., and Vikesland, P.J. 2017 “Controlled Evaluation of Surface Coating Effects on Silver Nanoparticle Dissolution” American Chemical Society National Meeting, San Francisco, CA April 2-6 (Abstract and Oral Presentation).
16. Chan, M., Leng, W., Walker, S.L., and Vikesland, P.J. 2017 “Three-Dimensional Surface Enhanced Raman Spectroscopy Evaluation and Visualization of Gold Nanoparticle Transport in a Silicon-Based Micromodel” American Chemical Society National Meeting, San Francisco, CA April 2-6 (Abstract and Oral Presentation).
17. Vikesland, P.J. 2017 “All That is Gold Does Not Glitter’ – Environmental Applications of Gold Enabled Plasmonics” Baylor University Environmental Science Department Seminar, March 22 (**Invited Seminar**).
18. Vikesland, P.J. 2017 “Controlled Evaluation of Nanomaterial Transformations” EMPA-NanoImpact Conference, Monte Verità, Switzerland, March 12-17, 2008 (Oral Presentation).
19. Vikesland, P.J. 2016 “Applications of Nanotechnology for Environmental Sensing” Beijing Symposium 2016 on Environmental Processes and Risks of Chemical Contaminants, Xiamen, China, November 30-December 2 (Abstract and **Invited Oral Presentation**).
20. Vikesland, P.J. 2016 “Applications of Nanotechnology for Environmental Sensing” Hong Kong University, Hong Kong, China, November 28 (**Invited Seminar**).
21. Wei, H. and Vikesland, P.J. 2016 “Quantitative Investigation of pK_a-SERS Relationship by ‘Hot-Spot’ Normalization” Sustainable Nanotechnology Organization Annual Conference, Orlando, FL November 10-12 (Oral Presentation).
22. Vikesland, P.J., Wei, H., Willner, M., and Marr, L. 2016 “Applications of SERS pH Nanoprobes Produced by Co-Solvent Controlled AuNP Aggregation” SCIx 2016 Conference, Minneapolis, MN September 19-22 (**Invited Oral Presentation**).
23. Wei, H., Leng, W. and Vikesland, P.J. 2016 “Quantitative Investigation of pK_a-SERS Relationship by ‘Hot-Spot’ Normalization” SCIx 2016 Conference, Minneapolis, MN September 19-22 (Abstract and Oral Presentation).
24. Vikesland, P.J. 2016 “All That is Gold Does Not Glitter’ – Environmental Applications of Gold Enabled Plasmonics” University of Pittsburgh Department of Civil and Environmental Engineering, Pittsburgh, PA September 9 (**Invited Seminar**).
25. Metch, J.W., Vikesland, P.J., Burrows, N.D., Murphy, C.J., and Pruden, A. 2016 “Activated Sludge Microbial Community Response to Variations to Gold

Nanoparticles Morphology and Surface Coating" American Chemical Society National Meeting, Philadelphia, PA August 21-25 (Abstract and Oral Presentation).

26. Vikesland, P.J. and Wei, H. 2016 "Chemical Structure Impacts on SERS Detection of Environmental Pollutants" American Chemical Society National Meeting, Philadelphia, PA August 21-25 (Abstract and Oral Presentation).
27. Vikesland, P.J., Wei, H., Marr, L., Pruden, A., Riquelme, M.V., and Willner, M.R. 2016 "Nanosensors for Water Quality Monitoring: pH and Antibiotic Resistance Gene Detection" Environmental Sciences: Water Gordon Conference, Holderness, NH, June 26-30 (Abstract and Poster Presentation).
28. Vikesland, P. 2016 "Nanoparticle Enabled Contaminant Sensing: Environmental Plasmonics" École polytechnique fédérale de Lausanne, Lausanne, Switzerland March 1 (**Invited Seminar**).
29. Chan, M., Leng, W., Walker, S.L., Borschneck, D., Rose, J., and Vikesland, P.J. 2016 "Three-Dimensional Evaluation and Visualization of AuNP Transport in Silicon-Based Micromodel with SERS and μ-CT" American Chemical Society National Meeting, San Diego, CA March 13-17 (Abstract and Oral Presentation).
30. Leng, W., Gruszewski, H., Schmale, D., and Vikesland, P.J. 2016 "Colorimetric Nanoprobes for Mycotoxin Deoxynivalenol Detection" American Chemical Society National Meeting, San Diego, CA March 13-17 (Abstract and Oral Presentation).
31. Wei, H. and Vikesland, P.J. 2016 "Extending SERS Application to Lower pH: A Stable Platform for Environmental Pollutant Detection" American Chemical Society National Meeting, San Diego, CA March 13-17 (Abstract and Oral Presentation).
32. Pati, P., and Vikesland P.J. 2015. "Nanomaterial Recovery from Wastestreams" Sustainable Nanotechnology Organization Conference, Portland, Oregon, November 8-10 (Abstract and Oral Presentation).
33. Singh, G., Riquelme, M.V., Pruden, A., and Vikesland P.J. 2015. "Biodegradation of Nanocellulose and Microbial Community Response: Effect of Surface Modification and Morphology" Sustainable Nanotechnology Organization Conference, Portland, Oregon, November 8-10 (Abstract and Oral Presentation).
34. Riquelme, M.V., Pruden, A., and Vikesland P.J. 2015. " Gold nanoprobe-Based Detection of Antibiotic Resistance Genes in Treated Wastewater Effluent" Sustainable Nanotechnology Organization Conference, Portland, Oregon, November 8-10 (Abstract and Oral Presentation).
35. Willner, M. and Vikesland P.J. 2015. " High Throughput Optofluidic Surface Enhanced Raman Spectroscopy (SERS) Interrogation: Proof of Concept via Lectin Detection of Cancerous Cells" Sustainable Nanotechnology Organization Conference, Portland, Oregon, November 8-10 (Abstract and Oral Presentation).
36. Wei, H., and Vikesland P.J. 2015. "pH-triggered SERS Detection of Environmental Pollutants" Sustainable Nanotechnology Organization, Portland, Oregon, November 8-10 (Abstract and Oral Presentation).

37. Pati, P., Vikesland, P.J., and McGinnis, S. 2015. “Precious Metal and Rare Earth Element Recovery From Waste Streams” American Chemical Society Fall Meeting, Boston, MA, August 16-20 (Abstract and Oral Presentation).
38. Wei, H., Leng, W., and Vikesland, P.J. 2015. "pH-triggered SERS Detection of Atrazine with AuNP/BC Nanocomposite" Gordon Research Conferences - Environmental Nanotechnology, West Dover, Vermont, June 21-26 (Abstract and Poster Presentation).
39. Kent, R. and Vikesland, P.J. 2015. “Controlled Evaluation of Copper-Based Nanomaterial Dissolution Kinetics” American Chemical Society National Meeting, Denver, CO March 23-26 (Abstract and Oral Presentation).
40. Vikesland, P.J., Pati, P., and McGinnis, S. 2015. “Precious Metal Recovery from Nanowaste for Sustainable Nanotechnology: Current Challenges and Life Cycle Considerations” SUN-SNO-GUIDENANO Sustainable Nanotechnology Conference 2015, Venice, Italy March 9-11 (Abstract and Oral Presentation).
41. Vikesland, P.J. 2015. “The Virginia Tech Interdisciplinary Graduate Education Program” SUN-SNO-GUIDENANO Sustainable Nanotechnology Conference 2015, Venice, Italy March 9-11 (Abstract and Oral Presentation).
42. Vikesland, P.J. 2015. “Nanoparticle Enabled Contaminant Sensing: Environmental Applications of Gold Enabled Plasmonics” University of California–Riverside Department of Chemical and Environmental Engineering Seminar, February 18, Riverside, CA (**Invited Seminar**).
43. Vikesland, P.J. 2014. “Nanosensors for Environmental Quality Assessment” Sustainable Nanotechnology Organization 2014 Conference, November 2-4, Boston, MA (Abstract and **Invited Oral Presentation**).
44. Vikesland, P.J. 2014. “Overview of Sustainable Nanotechnology Education” Sustainable Nanotechnology Organization 2014 Conference, November 2-4, Boston, MA (Abstract and **Invited Oral Presentation**).
45. Abtahi, S.H., Murphy, C.A., Saleh, N., and Vikesland, P.J. 2014. “Stability of Gold Nanorods in Aquatic Environments” Sustainable Nanotechnology Organization 2014 Conference, November 2-4, Boston, MA (Abstract and Oral Presentation).
46. Chan, M.Y. and Vikesland, P.J. 2014. “Applications of Surface Enhanced Raman Spectroscopy for Quantification of Nanoparticle Aggregation” Sustainable Nanotechnology Organization 2014 Conference, November 2-4, Boston, MA (Abstract and Poster Presentation).
47. Metch, J., Vikesland, P.J., and Pruden, A. 2014. “Disinfection by-Product Formation Catalyzed by Silver Nanoparticles in Wastewater Effluent” Sustainable Nanotechnology Organization 2014 Conference, November 2-4, Boston, MA (Abstract and Oral Presentation).
48. Pati, P., Vikesland, P.J., and McGinnis, S. 2014. “Precious Metal Recovery From Nanowaste for Sustainable Nanotechnology: Current Challenges and Life Cycle

Considerations" Sustainable Nanotechnology Organization 2014 Conference, November 2-4, Boston, MA (Abstract and Oral Presentation).

49. Pati, P., Vikesland, P.J., and McGinnis, S. 2014. "Life Cycle Assessment of Cerium Dioxide Nanoparticle-Based Fuel Additives" Sustainable Nanotechnology Organization 2014 Conference, November 2-4, Boston, MA (Abstract and Oral Presentation).
50. Willner, M.R., Simpson, J., Zagnoni, M., Graham, D., and Vikesland, P.J. 2014. "High Throughput Optofluidic Surface Enhanced Raman Spectroscopy (SERS) Interrogation: Proof of Concept Via Lectin Detection of Cancerous Cells" Sustainable Nanotechnology Organization 2014 Conference, November 2-4, Boston, MA (Abstract and Oral Presentation).
51. Vikesland, P.J. 2014."Effects of Aggregation on Nanoparticle Fate and Reactivity – The Importance of Fractal Dimension" China University of Geosciences, September 18, Beijing, China (**Invited Seminar**).
52. Vikesland, P.J. 2014."Effects of Aggregation on Nanoparticle Fate and Reactivity – The Importance of Fractal Dimension" China Institute of Hydrogeology and Environmental Geology, September 17, Shijiazhuang, China (**Invited Seminar**).
53. Vikesland, P.J. 2014."Nanoparticle Enabled Contaminant Sensing: Environmental Applications of Gold Enabled Plasmonics" China University of Geosciences, September 15, Beijing, China (**Invited Seminar**).
54. Vikesland, P.J. 2014. "Occam's Razor: Our Continuing Adventures in Chlorination and Chloramination", American Chemical Society Fall Meeting, August 10-14, 2014, San Francisco, CA (Abstract and **Invited Oral Presentation**).
55. Chan, M.Y., Leng, W., and Vikesland, P.J. 2014. "Three-Dimensional Visualization and Quantification of Gold Nanomaterial Aggregation via Surface Enhanced Raman Spectroscopy" American Chemical Society Fall Meeting, August 10-14, 2014, San Francisco, CA (Abstract and Oral Presentation).
56. Pati, P., Vikesland, P.J., and McGinnis, S. 2014. "Life Cycle Assessment of Nanotechnology: Environmental Impacts of Nanomaterial Production and Precious Metal Recovery from Nanowaste", American Chemical Society Fall Meeting, August 10-14, 2014, San Francisco, CA (Abstract and Oral Presentation).
57. Abtahi S.M.H, Vikesland, P.J., Murphy C., and Saleh N. "Fate and Transport of Elongated Gold Nanoparticles in Aquatic Systems", American Chemical Society Fall Meeting, August 10-14, 2014, San Francisco, CA (Abstract and Oral Presentation).
58. Kent, R., Oser, J., and Vikesland, P. 2014. "Controlled Evaluation of Silver Nanoparticle Sulfidation in a Full-Scale Wastewater Treatment Plant" American Chemical Society Fall Meeting, August 10-14, 2014, San Francisco, CA (Abstract and Oral Presentation).

59. Vikesland, P.J. 2014. “Nanoparticle Enabled Contaminant Sensing: Environmental Applications of Gold Enabled Plasmonics”, Carnegie Mellon University, July 14, Pittsburgh, PA (**Invited Seminar**).
60. Vikesland, P.J. 2014. “Nanoparticle Enabled Contaminant Sensing: Environmental Applications of Gold Enabled Plasmonics”, Environmental Sciences: Water Gordon Conference, June 22-27, Holderness, NH (**Invited Oral Presentation**).
61. Vikesland, P.J. 2014.“All That Is Gold Does Not Glitter: Environmental Applications of Gold Enabled Plasmonics” University of Glasgow, June 3, Glasgow, Scotland (**Invited Seminar**).
62. Vikesland, P.J. 2014.“All That Is Gold Does Not Glitter: Environmental Applications of Gold Enabled Plasmonics” Strathclyde University, June 2, Glasgow, Scotland (**Invited Seminar**).
63. Abtahi, S.H. and Vikesland, P.J. 2014. “Fate and Transformation of Elongated Shaped Metallic Nanoparticles in Aquatic Environments”, CEINT Internal Conference, May 22-23, Durham, NC (Oral Presentation).
64. Pati, P., Vikesland, P.J., and McGinnis, S. 2014. “Lifecycle Assessment of Gold and Ceria Nanoparticles”, CEINT Internal Conference, May 22-23, Durham, NC (Oral Presentation).
65. Kent, R.D. and Vikesland, P.J. 2014. “Controlled Evaluation of Silver Nanoparticle Transformations”, CEINT Internal Conference, May 22-23, Durham, NC (Oral Presentation).
66. Vikesland, P.J. “All That Is Gold Does Not Glitter: Environmental Applications of Gold Enabled Plasmonics” Colloid+Surface Symposium, Virginia Tech, April 29, 2014 (Oral Presentation).
67. Pati, P., Vikesland, P.J., and McGinnis, S. “Incorporating Life Cycle Thinking into Green Synthesis of Nanomaterials” American Chemical Society Spring Meeting, March 16-20, 2014, Dallas, TX (Abstract and Oral Presentation).
68. Abbas, K., Elvinger, F., Eubank, S., Hodgson, J., Hosig, K., Johnson, C., Kerkering, T., Krometis, L.-A., Marmagas, S., O’Dell, M., Pierson, W., Redican, K., Schurig, G., Vikesland, P.J., Widmer, J. “Interprofessional Integration and Sustainability of One Health in Education and Beyond” Association of American Veterinary Medical Colleges Annual Meeting, March 14-16, 2014 (Oral Presentation).
69. Vikesland, P.J. “Virginia Tech’s Unique Interdisciplinary Graduate Education Program: A Response to the Pressing Need for Interdisciplinary Research and Education” Interdisciplinary Research Honor Society Annual Meeting, Virginia Tech, February 27, 2014 (**Invited Keynote Presentation**).
70. Willner, M.R. and Vikesland, P.J. “Nanomaterial Enabled Virus Detection” Interdisciplinary Research Honor Society Annual Meeting, Virginia Tech, February 27, 2014 (Poster Presentation).

71. Vikesland, P.J. “All That Is Gold Does Not Glitter: Environmental Applications of Gold Enabled Plasmonics” School of Sustainable Engineering and the Built Environment, Arizona State University, February 25, 2014 (**Invited Seminar**).
72. Metch, J., Ma, Y., Vikesland, P.J., and Pruden, A. “Implications of Disposal of Engineered Nanoparticles to Wastewater Treatment Plants: Nitrification and Disinfectant By-Product Formation”, 2014 Borchardt Conference, University of Michigan. February 25 (Poster Presentation).
73. Vikesland, P.J. “Applications of Surface Enhanced Raman Spectroscopy for Environmental Sensing”, Osaka University, Osaka, Japan, December 12, 2013 (**Invited Oral Presentation**).
74. Vikesland, P.J. “Applications of Surface Enhanced Raman Spectroscopy for Environmental Sensing”, Japan National Institute for Materials Science, Tsukuba, Japan, December 9, 2013 (**Invited Oral Presentation**).
75. Vikesland, P.J. “Challenges and Opportunities for the Nanotechnology Community”, NSF Nanoscale Science and Engineering Grantees Meeting, Arlington, VA, December 4, 2013 (**Invited Keynote Presentation**).
76. Vikesland, P.J. “Applications of Surface Enhanced Raman Spectroscopy in Environmental Sensing”, Harvard University Environmental Science and Engineering Seminar Series, November 15, 2013 (**Invited Seminar**).
77. Vikesland, P.J. “Nanomaterial Fate in the Environment: Where Have We Been and Where Are We Going?”, Sustainable Nanotechnology Organization 2013 Conference, November 3-5, 2013, Santa Barbara, CA (**Invited Oral Presentation**).
78. Vikesland, P.J., Pruden, A., and Marr, L. “The Virginia Tech Sustainable Nanotechnology Program”, Sustainable Nanotechnology Organization 2013 Conference, November 3-5, 2013, Santa Barbara, CA (Oral Presentation).
79. Chan, M.Y., Leng, W., and Vikesland, P.J. “Three-dimensional Visualization and Quantification of Gold Nanomaterial Deposition and Aggregation in Porous Media via Raman Spectroscopy”, Sustainable Nanotechnology Organization 2013 Conference, November 3-5, 2013, Santa Barbara, CA (Oral Presentation).
80. Kent, R.D., Oser, J.G., and Vikesland, P.J. “Controlled Evaluation of Silver Nanoparticle Sulfidation: Reaction Mechanism and Particle Stability”, Sustainable Nanotechnology Organization 2013 Conference, November 3-5, 2013, Santa Barbara, CA (Oral Presentation).
81. Lahr, R.H. and Vikesland, P.J. “Surface-enhanced Raman Spectroscopy (SERS) Cellular Imaging of Intracellulary Biosynthesized Gold Nanoparticles”, Sustainable Nanotechnology Organization 2013 Conference, November 3-5, 2013, Santa Barbara, CA (Oral Presentation).
82. Metch, J., Ma, Y., Vikesland, P.J., and Pruden, A. “Disinfection By-Product Formation Catalyzed by Nanoparticles in Wastewater Effluents”, Sustainable

Nanotechnology Organization 2013 Conference, November 3-5, 2013, Santa Barbara, CA (Poster Presentation).

83. Pati, P., Vikesland, P.J., and McGinnis, S. “How Green is “Green” Nanotechnology?”, Sustainable Nanotechnology Organization 2013 Conference, November 3-5, 2013, Santa Barbara, CA (Oral Presentation).

84. Riquelme, M.V.; Leng, W., Pruden, A., and Vikesland, P.J. “Aptamer-Functionalized Gold Nanoparticles for the Rapid Detection of *Staphylococcus aureus*”, Sustainable Nanotechnology Organization 2013 Conference, November 3-5, 2013, Santa Barbara, CA (Oral Presentation).

85. Willner, M., Lahr, R.H., and Vikesland, P.J. “Paper Based Sensors for Environmental Contaminants” Sustainable Nanotechnology Organization 2013 Conference, November 3-5, 2013, Santa Barbara, CA (Oral Presentation).

86. Lahr, R. and Vikesland, P.J. “Surface-Enhanced Raman Spectroscopy (SERS) Cellular Imaging of Intracellulary Biosynthesized Gold Nanoparticles” ICTAS Research Day, Virginia Tech, October 11, 2013 (Poster Presentation).

87. Pati, P., Vikesland, P.J., and McGinnis, S. “Evaluating “Green” Synthesis Processes for Nanoparticles Through a Life Cycle Perspective” ICTAS Research Day, Virginia Tech, October 11, 2013 (Poster Presentation).

88. Vikesland, P.J.; Leng, W.; Riquelme, M.V.; Pruden, A. “Aptamer-enabled SERS Detection of *Staphylococcus aureus*”, SCIx Annual Conference, Milwaukee, WI, October 2, 2013 (**Invited Oral Presentation**).

89. Reese, L., Zamani, F., Leng, W., Vikesland, P.J., and Bickford, L.R. “Assessing Pancreatic Canter Cell Uptake of Gold-Based Nanoparticles Using Confocal Raman Microscopy” Biomedical Engineering Society Annual Meeting, September 25-28, 2013 (Poster Presentation).

90. Vikesland, P.J. “Fate of Nanomaterials in the Natural Environment”, IMETE Summer School, September 11, 2013, Gent, Belgium. (Invited Lecture).

91. Vikesland, P.J. “Nanoparticle Based Sensors for Water Quality Testing”, IMETE Summer School, September 11, 2013, Gent, Belgium. (Invited Lecture).

92. Kim, J.Y., Pati, P., Vikesland, P.J. “Nanotechnology Using Waste: Gold Nanoparticle Synthesis Using Coffee and Banana Extracts”, Virginia Tech Summer Undergraduate Research Symposium, July 31, 2013, Blacksburg, VA (Poster Presentation).

93. Vikesland, P.J., Pruden, A., McGinniss, S., Pati, P., and Singh, G. “Sustainable Nanotechnology in the Classroom and in the Laboratory”, Association of Environmental Engineering and Science Professors (AEESP) 50th Anniversary Conference, July 14-16, 2013, Golden, CO. (**Invited Oral Presentation**).

94. Vikesland, P.J. “Sustainable Nanotechnology: Safer by Design” France/U.S. Nanotechnology Policy Forum, March 7-8, 2013, Washington, DC. (Invited Oral Presentation).

95. Oser, J., Kent, R.D. and Vikesland, P.J. 2013. Transformations of Silver Nanoparticles in Wastewater Biosolids. Spring 2013 Virginia Tech Undergraduate Research Symposium, April 19, Blacksburg, VA.
96. Lahr, R.H. and Vikesland, P.J. 2013. "Gold Nanoparticle Biosynthesis and Intracellular Surface Enhanced Raman Spectroscopy (SERS) of *Pseudokirchneriella subcapitata"*, CEINT Internal Conference, March 4-5, Durham, NC.
97. Pati, P., Vikesland, P.J., and McGinnis, S. 2013. "How Green is "Green"? LCA of Gold Nanoparticle Synthesis Processes", CEINT Internal Conference, March 4-5, Durham, NC.
98. Kent, R.D. and Vikesland, P.J. 2013. "Controlled Evaluation of Silver Nanoparticle Transformations", CEINT Internal Conference, March 4-5, Durham, NC.
99. Vikesland, P.J. "Nanomaterial Enabled Detection of Environmental Contaminants" ASME 2013 2nd Global Congress on Nanoengineering for Medicine and Biology, February 4-6, 2013, Boston, MA (**Invited Keynote Presentation**).
100. Vikesland, P.J. "Nanotechnology will Revolutionize Water supply Sustainability", Inaugural TEDxVirginia Tech Conference, November 9, 2012, Blacksburg, VA (**Invited Oral Presentation**).
101. Pati, P.; McGinnis, S.; and Vikesland, P.J. "Gate-to-Gate Life Cycle Assessment of Gold Nanoparticle Synthesis Processes", Sustainable Nanotechnology Organization Conference, November 4-6, 2012, Arlington, VA (Abstract and Oral Presentation).
102. Vikesland, P.J. The 2012 Richard L. Valentine Distinguished Lecture in Civil and Environmental Engineering, "Nanoparticle Based Sensors for Environmental Contaminants" University of Iowa, Department of Civil and Environmental Engineering, October 5, 2012, Iowa City, IA. (**Invited Oral Presentation**).
103. Vikesland, P.J. "Nanomaterials: Environmental Scourge or Environmental Savior?" Stanford University Seminar Series on Issues in Environmental Science, Engineering, and Sustainability, July 16, 2012, Palo Alto, CA. (**Invited Oral Presentation**).
104. Vikesland, P.J. and Kent, R.D. "Controlled Evaluation of Silver Nanoparticle Reactivity Using Atomic Force Microscopy", Environmental Sciences: Water Gordon Conference, June 24-June 29, 2012, Holderness, NH (Abstract and Poster Presentation).
105. Halvorson, R.A. and Vikesland, P.J. "Isolation of Water Contaminants Using Microfluidic Paper-Based Analytical Devices (μPADs) and Surface Enhanced Raman Spectroscopy (SERS) Detection" Environmental Sciences: Water Gordon Conference, June 24-June 29, 2012, Holderness, NH (Abstract and Poster Presentation).
106. Chan, M.Y., Hull, M.S., Jones, J.C. and Vikesland, P.J. "Transport, Stability, and Deposition of Functionalized Gold Nanoparticles in Porous Media", 2012

Goldschmidt Conference, Montreal, June 25-June 29 (Abstract and Oral Presentation).

107. Vikesland, P.J. “Gold Nanomaterials: Environmental Scourge or Environmental Savior?” Noble Metal Nanostructures Gordon Conference, June 17-June 22, South Hadley, MA (Abstract and Poster Presentation).

108. Vikesland, P.J. “Nanoparticle Based Sensors for Environmental Contaminants” Stanford University, Department of Civil and Environmental Engineering, May 18, 2012, Palo Alto, CA (**Invited Oral Presentation**).

109. Vikesland, P.J. and Chang, X. “Probing the *n*C_{60} Solid-Solution Interface Using UV-Vis Spectroscopy”, American Chemical Society Spring Meeting, March 25-29, 2012, San Diego, CA (Abstract and **Invited Oral Presentation**).

110. Vikesland, P.J. “Hypobromous Acid, Bromine Chloride and Other Novel Disinfecting Agents: The Contributions of Martin Reinhard to Our Understanding of Drinking Water Disinfection”, American Chemical Society Spring Meeting, March 25-29, 2012, San Diego, CA (Abstract and Oral Presentation).

111. Halvorson, R.A. and Vikesland, P.J. “Intracellular Gold Nanoparticle Formation by *Pseudokirchneriella subcapitata* and Characterization by ESEM, TEM, and Surface-Enhanced Raman Spectroscopy (SERS)”, American Chemical Society Spring Meeting, March 25-29, 2012, San Diego, CA (Abstract and Oral Presentation).

112. Chan, M.Y., Hull, M.S., Jones, J.C. and Vikesland, P.J. “Transport, Stability, and Deposition of Functionalized Gold Nanoparticles in Porous Media”, American Chemical Society Spring Meeting, March 25-29, 2012, San Diego, CA (Abstract and Oral Presentation).

113. Kent, R.D. and Vikesland, P.J. “Controlled Evaluation of Silver Nanoparticle Dissolution Using Atomic Force Microscopy”, American Chemical Society Spring Meeting, March 25-29, 2012, San Diego, CA (Abstract and Oral Presentation).

114. Vikesland, P.J. “Gold Nanoparticles: Environmental Scourge or Environmental Savior?”, Center for the Environmental Implications of Nanotechnology (CEINT), Duke University, October 27, 2011 (**Invited Oral Presentation**).

115. Hull, M., Chaurand, P., Rose, R., Auffan, M., Bottero, J.Y., Jones, J., Schultz, I., and Vikesland P. “Filter-Feeding Bivalves Store and Biodeposit Colloidally Stable Gold Nanoparticles” American Chemical Society Fall Meeting, August 28-September 1, 2011 (**Invited Oral Presentation**).

116. Vikesland, P.J., Hull, M., Chan, M., Kent, R., and Pati, P. “Alterations to Nanoparticle Associated Proteins”, Goldschmidt Conference, Prague, Czech Republic, August 15-19, 2011 (Oral Presentation).

117. Vikesland, P.J. “Surface Enhanced Raman Spectroscopy (SERS) Based Detection of Waterborne Pathogens”, IWA Specialist Conference – Applications of Nanotechnology in the Water Sector, Monte Verita, Ascona, Switzerland, May 15-May 18, 2011 (**Invited Oral Presentation**).

118. Vikesland, P.J. “Gold Nanoparticles: Environmental Savior or Environmental Scourge?”, Swiss Federal Institute of Technology (ETH), May 13, 2011 (**Invited Oral Presentation**).
119. Vikesland, P.J. “Effects of Fractal Dimension on Nanoparticle Aggregation and Sedimentation”, University of Michigan, Department of Civil and Environmental Engineering, April 13, 2011 (**Invited Oral Presentation**).
120. Halvorson, R.A. and Vikesland, P.J. “Cyanotoxin Monitoring Using Raman Spectroscopy”, American Chemical Society Spring Meeting, March 27-31, 2011, Anaheim, CA (Abstract and Oral Presentation).
121. Hull, M. and Vikesland, P.J. “Concentration and Detection of Engineered Nanoparticles Discharged to Aquatic Ecosystems Using the Asian Clam, *Corbicula fluminea*”, American Chemical Society Spring Meeting, March 27-31, 2011, Anaheim, CA (Abstract and Oral Presentation).
122. Vikesland, P.J., Rebodos, R.L., and Masion, A. “Effects of Fractal Dimension on Nanoparticle Aggregation and Sedimentation”, American Chemical Society Spring Meeting, March 27-31, 2011, Anaheim, CA (Abstract and **Invited Oral Presentation**).
123. Vikesland, P.J. and Rebodos, R.L. “Effects of Particle Aggregation on Nanoparticle Reactivity”, 16th International Conference on Advanced Oxidation Technologies for Treatment of Water, Air, and Soil, San Diego, CA, November 15-18, 2010 (Extended Abstract, Invited Presentation, and Member International Organizing Committee).
124. Chang, X. and Vikesland, P.J. “*n*C_{60} Aggregates and Molecular C_{60} Formation in Sodium Citrate Solutions via Extended Mixing”, Interfaces Against Pollution Conference 2010 (IAP2010), Beijing, China, June 20-22, 2010 (Abstract and Oral Presentation).
125. Hull, M.S.; Chaurand, P.; Rose, J.; Jones, K.; Gloe, K. and Vikesland, P.J. “Uptake and Biotransformation of Gold Nanoparticles by a Freshwater Bivalve”, Goldschmidt 2010, Knoxville, TN, June 14-18, 2010 (Abstract and **Invited Oral Presentation**).
126. Vikesland, P.J. and Rebodos, R.L. “Effects of Oxidation on Nanomagnetite Magnetization, Aggregation, and Sedimentation”, Goldschmidt 2010, Knoxville, TN, June 14-18, 2010 (Abstract and **Invited Oral Presentation**).
127. Hull, M.S. and Vikesland, P.J. “Size-Selective Uptake of Gold NP by Sentinal Filter-Feeder”, ICEIN 2010: International Conference on Environmental Implications of Nanotechnology, Los Angeles, CA, May 11-13, 2010 (Abstract and Oral Presentation)
128. Vikesland, P.J. “Virginia Tech Environmental BioNanoTechnology Laboratory” Virginia Tech-NIST Research Meeting, January 15, 2010.

129. Vikesland, P.J. “Effects of Oxidation on Magnetite Aggregation and Sedimentation”, French & American Young Engineering Scientists Symposium, Saclay, France, November 16-18, 2009 (**Invited Oral Presentation**).
130. Vikesland, P.J. “Effects of Oxidation on Magnetite Aggregation and Sedimentation” Centre Européen de Recherche et d’Enseignement des Géosciences de l’Environnement (*CEREGE*), Aix-en-Provence, France, October 20, 2009 (**Invited Oral Presentation**).
131. Hull, M., Jones, J, and Vikesland, P.J. “Effects of Surface Coating and Solution Ionic Composition on Aggregation of Au Nanoparticles in Freshwater Systems”, International Conference on the Environmental Implications of NanoTechnology 2009, Howard University, September 9-11, 2009 (Oral Presentation).
132. Vikesland, P.J. “Nanotechnology Enabled Pathogen Detection in Drinking Water”, Association of Environmental Engineering and Science Professors Biannual Meeting, Iowa City, IA, July 27-28. 2009 (**Invited Oral Presentation**).
133. Vikesland, P.J., Wigginton, K.R., Anderson, C., Halvorson, R., and Kohn, T. “Pathogen Detection with Nanotechnology Enabled Biosensors”, IWA Leading Edge Technology Conference, Singapore June 23-25, 2009 (Oral Presentation).
134. Rebodos, R.L. and Vikesland, P.J. “Alterations to Magnetite Aggregation State During Oxidation”, American Chemical Society Meeting, Salt Lake City, UT, March 22-26, 2009 (Abstract and Oral Presentation).
135. Fiss, E.M. and Vikesland, P.J. “Reactivity of Bisphenol-A with Free Chlorine in the Presence of Iodide and Bromide”, American Chemical Society Meeting, Salt Lake City, UT, March 22-26, 2009 (Abstract and Oral Presentation).
136. Vikesland, P.J. and Marr, L. “Cross-Media Environmental Transport, Transformation, and Fate of Manufactured Carbonaceous Nanomaterials”, EPA Environmental Nanotechnology Grantees Workshop, Tampa Bay, FL, November 19-21, 2008 (Abstract and Oral Presentation).
137. Vikesland, P.J. and Rule, K.L. “Nanotechnology Enabled Detection of Drinking Water Pathogens”, Sustainable and Safe Drinking Water in Developing and Developed Countries: Where Science Meets Policy, Chapel Hill, NC, November 5-6, 2008 (Manuscript and Oral Presentation).
138. Fiss, E.M. and Vikesland, P.J. “Modeling the Reactivity of Pharmaceutical and Personal Care Products During Chlorination and Chloramination in the Presence of Bromide and Iodide”, Sustainable and Safe Drinking Water in Developing and Developed Countries: Where Science Meets Policy, Chapel Hill, NC, November 5-6, 2008 (Manuscript and Oral Presentation).
139. Diesel, E. A., Schreiber, M. E., van der Meer, J. R., Hull, M.S., Vikesland, P.J., Love, N.G., van Lintel, H., Braschler, T., and Renaud, P. “Novel Uses for Environmental Sensors: Towards a Mode of Action Sensor Array for Arsenic”, Geological Society of America Annual Meeting. Houston, Texas, October 5-9, 2008. (Poster Presentation)

140. Rule, K.L. and Vikesland, P.J. “A Nanotechnology Enabled Detection Method for *Cryptosporidium parvum* and *Giardia lamblia*”, American Chemical Society Meeting, Philadelphia, PA, August 17-21, 2008 (Manuscript and Oral Presentation).
141. Fiss, E.M. and Vikesland, P.J. “Reactivity of Pharmaceutical and Personal Care Products with Chlorine in the Presence of Bromide and Iodide”, American Chemical Society Meeting, Philadelphia, PA, August 17-21, 2008 (Manuscript and Oral Presentation).
142. Khunjar, W.O., Love, N.G., Vikesland, P.J., Skotnicka-Picka, J., Aga, D.S., Yi, T., and Harper, W.F. “Biotransformation and Chlorination of Pharmaceuticals and Their Byproducts During Wastewater Treatment”, American Chemical Society Meeting, Philadelphia, PA, August 17-21, 2008 (Manuscript and Oral Presentation).
143. Halvorson, R. and Vikesland, P.J. “Rapid concentration and Detection of Cyanobacterial Byproducts in Drinking Water”, Gordon Research Conference – Environmental Sciences: Water, June 22-26, 2008 (Poster Presentation).
144. Wigginton, K.R. and Vikesland, P.J. “Surface Enhanced Raman Spectroscopy for Multiplex Pathogen Detection”, Gordon Research Conference – Environmental Sciences: Water, June 22-26, 2008 (Poster Presentation).
145. Vikesland, P.J. and Chang, X. “Citrate Stabilized Molecular Crystals of C_{60}”, Gordon Research Conference – Environmental Sciences: Water, June 22-26, 2008 (Poster Presentation).
146. Vikesland, P.J., Chang, X., Duncan, L.K, Jinschek, J.R., and Chan, M. “Effects of Small Molecular Weight Acids on C_{60} Aggregate Formation and Transport”, American Chemical Society Meeting, New Orleans, LA, April 6-10, 2008 (Manuscript and Oral Presentation).
147. Rule, K.L. and Vikesland, P.J. “SERS-Based Detection Method for Pathogen Monitoring in Drinking Water”, American Chemical Society Meeting, New Orleans, LA, April 6-10, 2008 (Manuscript and Oral Presentation).
148. Chang, X. and Vikesland, P.J. “Novel C_{60} Aggregates Produced by Extended Mixing in the Presence of Citric Acid”, American Chemical Society Meeting, New Orleans, LA, April 6-10, 2008 (Oral Presentation).
149. Vikesland, P.J “Effects of Solution Chemistry on C_{60} Aggregate Formation and Transport” EAWAG, Dubendorf, Switzerland, March 11, 2008 (Oral Presentation).
150. Vikesland, P.J., Marr, L.C., Jinschek, J.R., Chang, X., and Duncan, L.K. “Effects of Solution Chemistry on C_{60} Aggregate Formation and Transport”, EMPA-NanoECO Conference, Monte Verità, Switzerland, March 2-7, 2008 (Oral Presentation).
151. Vikesland, P.J. “The Effects of Particle Aggregation on the Fate and Reactivity of Carbonaceous and Iron Oxide Nanomaterials” Civil and Environmental Engineering, Rice University, Houston, TX, November 2, 2007 (Oral Presentation).

152. Vikesland, P.J. “The Effects of Particle Aggregation on the Fate and Reactivity of Carbonaceous and Iron Oxide Nanomaterials”, Nanoscience and Nanotechnology Institute, The University of Iowa, Iowa City, IA, October 12, 2007 (Oral Presentation).
153. Vikesland, P.J., Marr, L.C., Jinschek, J.R., Duncan, L.K., Yeganeh, B., and Chang, X. “Characterization of C_{60} Aggregates in Aqueous and Airborne Systems”, Association of Environmental Engineering and Science Professors Bi-Annual Conference, Blacksburg, VA, August 2-4, 2007 (Oral Presentation).
154. Vikesland, P.J., Love, N.G., Fiss, E.M., Zaklikowski, A.E., Chandran, K., DiGiano, F., and Carrico, B. “Water Quality Impacts of Disinfectant Switching Practices at Pilot and Full-Scale”, American Water Works Association Annual Conference and Exhibition, Toronto, June 24-28, 2007 (Manuscript and Oral Presentation).
155. Rule, K.L. and Vikesland, P.J. “Nanotechnology Enabled Detection of *Cryptosporidium*”, American Water Works Association Annual Conference and Exhibition, Toronto, June 24-28, 2007 (Manuscript and Oral Presentation).
156. Vikesland, P.J. and Rule, K.L. “Nanotechnology Enabled Detection of *Cryptosporidium*”, International Water Association Leading Edge Technology Conference, Singapore, June 3-6, 2007 (Manuscript and Oral Presentation).
157. Vikesland, P.J.; Fiss, E.M.; Rule, K.L.; and Greyshock, A.E. “Disinfection By-product Formation Resulting From Chlorination of Antimicrobial Personal Care Products”, American Chemical Society Meeting, Chicago, IL, March 25-29, 2007 (Manuscript and Oral Presentation).
158. Rule, K.L. and Vikesland, P.J. “SERS Based Immunoassay for the Detection of *Cryptosporidium parvum* in Drinking Water”, American Chemical Society Meeting, Chicago, IL, March 25-29, 2007 (Manuscript and Oral Presentation).
159. Duncan, L.A. and Vikesland, P.J. “Characterization of the Size, Shape, Crystallinity and Surface Charge of C_{60} Aggregates Formed in Aqueous Systems”, American Chemical Society Meeting, Chicago, IL, March 25-29, 2007 (Manuscript and Oral Presentation).
160. Rebodos, R.F.; Templeton, J.A.; and Vikesland, P.J. “Loss of Reactivity of Magnetite (Fe_3O_4) Due to Particle Aggregation Induced by the Presence of Electrolytes”, American Chemical Society Meeting, Chicago, IL, March 25-29, 2007 (Manuscript and Oral Presentation).
161. Vikesland, P.J. “Nanotechnology - DNAPL Remediation”, Environmental Protection Agency Webinar, March 15, 2007. (Presentation available on-line at: http://www.clu-in.org/conf/tio/nano3_031507).
162. Rule, K.L. and Vikesland, P.J. “Development of a Biosensor for Cryptosporidium in Drinking Water”, American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November 12-17, 2006 (Abstract and Oral Presentation).

163. Duncan, L. and Vikesland, P.J. “Aggregation Behavior of C_{60} in Air and Water”, American Chemical Society Meeting, San Francisco, CA, September 10-14, 2006 (Abstract and Oral Presentation).
164. Rebodos, R.F. and Vikesland, P.J. “Reactivity of Magnetite Nanoparticles Under Anoxic Conditions”, American Chemical Society Meeting, San Francisco, CA, September 10-14, 2006 (Abstract and Oral Presentation).
165. Fiss, E.M., Rule, K.L., and Vikesland, P.J. “Chloroform Formation from the Chlorination of Antibacterial Products”, American Water Works Association Annual Conference, San Antonio, TX, June 11-16, 2006 (Manuscript and Oral Presentation).
166. Zaklikowski, A.; Love, N.G.; Chadran, K.; and Vikesland, P.J. “Effect of Temporal Breakpoint Chlorination Practices on the Activity and Recovery of Nitrifying Bacteria in Chloraminated Water”, American Water Works Association Annual Conference, San Antonio, TX, June 11-16, 2006 (Manuscript and Oral Presentation).
167. Vikesland, P.J. “Environmental Impacts of Nanotechnology”, Johns Hopkins Department of Geography and Environmental Engineering Seminar Series, April 11, 2006 (Oral Presentation).
168. Vikesland, P.J. and Heathcock, A. “Reactivity of Nanoscale Magnetite with Groundwater Contaminants”, American Chemical Society Meeting, Atlanta, GA, March 26-30, 2006 (Abstract and Oral Presentation).
169. Rebodos, R.F. and Vikesland, P.J. “Aggregation of Magnetite and Maghemite Nanoparticles in Anoxic Conditions”, American Chemical Society Meeting, Atlanta, GA, March 26-30, 2006 (Abstract and Oral Presentation).
170. Vikesland, P.J. “Environmental Impacts of Nanotechnology”, The California NanoSystems Institute 2nd Annual Frontiers in Nanosystems Conference, Kauai, HI, February 22, 2006 (Oral Presentation).
171. Vikesland, P.J. “Triclosan Reactivity with Drinking Water Disinfectants”, University of Illinois Urbana-Champaign WaterCAMPWS Seminar Series, February 3, 2006 (**Invited Oral Presentation**).
172. Edwards, M., Vikesland, P., Parks, J., and Dudi, A. “Autogenous Healing of Concrete”, American Water Works Association Water Quality and Technology Conference, Quebec City, Quebec, November 6-10, 2005 (Manuscript and Oral Presentation).
173. Vikesland, P.J. “Water Quality Impacts of Disinfectant Switching Practices at Pilot and Full Scale”, American Water Works Association Annual Conference, San Francisco, CA, June 12-16, 2005 (Manuscript and Oral Presentation).
174. Makus, K.E. and Vikesland, P.J. **“**Reduction of Halogenated Groundwater Contaminants by Nano-Sized Magnetite**”,** 15th V.M. Goldschmidt Conference, Moscow, ID, May 20-25, 2005 (Abstract and Poster Presentation).

175. Rebodos, R. and Vikesland, P.J. “Effects of Co-solutes on Bioaugmented Granular Iron Systems”, 15th V.M. Goldschmidt Conference, Moscow, ID, May 20-25, 2005 (Abstract and Oral Presentation).
176. Vikesland, P.J. and Makus, K.E. “Reduction of Halogenated Groundwater Contaminants at Reduced Iron Surfaces”, ACS National Conference, Philadelphia, PA, August 22-26, 2004 (Manuscript and Oral Presentation).
177. Vikesland, P.J., Rule, K., Greyshock, A. “Triclosan Fate in Chlorinated and Chloraminated Waters”, ACS National Conference, Philadelphia, PA, August 22-26, 2004 (Manuscript and Oral Presentation).
178. Rule, K.R., Ebbett, V.R., and Vikesland, P.J. “The Mechanisms, Kinetics and Products of Triclosan-Disinfectant Reactions”, American Water Works Association Water Quality and Technology Conference, Philadelphia, PA, November 2-6, 2003 (Manuscript and Oral Presentation).
179. Makus, K.E. and Vikesland, P.J., “Iron Corrosion Product Identification Using Micro-Raman Spectroscopy,” 13th V.M. Goldschmidt Conference, Kurashiki, Japan, September 7-13, 2003 (Abstract and Oral Presentation).
180. Ebbett, V.R and Vikesland, P.J., “The Kinetics of the Chlorination of Triclosan”, American Water Works Association Annual Conference, Anaheim, CA, June 15-19, 2003 (Oral Presentation).
181. Vikesland, P.J., “Granular Iron and Bioaugmented Granular Iron: Effects of Co-Solutes”, 7th International Battelle In-Situ and On-Site Bioremediation Conference, Orlando, FL, June 2-5, 2003 (Oral Presentation).
182. Kohn, T., Livi, K., Vikesland, P., Fairbrother, H., and Roberts, A.L., “Characterization of Solution-Dependent Granular Iron Surface Precipitates and Their Influence on Reactivity Towards Trichloroethylene”, ACS National Meeting, New Orleans, LA, March 23-27, 2003 (Extended Abstract and Oral Presentation).
183. Vikesland, P.J., “Co-Solute Effects on the Reactivity of Iron with Groundwater Contaminants”, Oak Ridge National Laboratory, Environmental Science Division, January 11, 2003 (Oral Presentation).
184. Vikesland, P.J., Klausen, J., Kohn, T., Burris, D.R., Ball, W.P., and Roberts, A.L., “Co-Solute Effects on the Reactivity of Iron with Groundwater Contaminants”, Third International Conference on the Remediation of Chlorinated and Recalcitrant Compounds, Monterey, CA, May 20-23, 2002 (Abstract and Oral Presentation).

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Education
Ph.D. Rensselaer Polytechnic Institute, Geochemistry
M.S. University of Massachusetts, Geophysics
B.S. Binghamton University, Geological Sciences

Professional Experience
***Director, NYC Office of Environmental Remediation.* 2008 – present.**

- Appointed by Mayor Bloomberg as founding director of NYC Office for vacant land remediation and economic revitalization; established over 30 associated programs for remediation, sustainability, resilience and equity.
- Established the nation's first municipal land remediation program (NYC Voluntary Cleanup Program), now arguably the most prolific remedial program in the U.S. It has enabled remediation of over 600 properties to produce over 30 million square feet of new building space, 4,000 permanent jobs, $10 billion in new private investment, 4,000 affordable housing units and over $2 billion in new, long-term city and state tax revenue.
- Director of NYC government's environmental response to the Hurricane Sandy recovery program. Assisted FEMA and the Army Corps to lower management costs for recyclable debris by over $80 million.
- Authored the NYC Brownfield Law and numerous environmental regulations and agreements. Established innovative sustainability programs including world's first clean soil exchange (NYC Clean Soil Bank); land certification program to market environmental safety (NYC Green Property Certification); online environmental GIS research engine (SPEED) and environmental database (EPIC); and numerous programs for hazard mitigation, climate change resilience and sustainability.

***Chief, NYC Superfund Program et al., New York State Department of Environmental Conservation.* 2002 – 2008.**
Chief of New York State's Superfund Program, Brownfield Cleanup Program (BCP) and Emergency Spill Remediation Program in NYC. Directed remediation of 150 Superfund and BCP sites and over 5,000 petroleum and gasoline spills in NYC including major oil and fuel storage facilities, airports, bus and train depots, power generation and distribution facilities, and city agencies. Oversaw remedial construction enabling over $10 billion in new development in NYC. Agency spokesman in over 200 public meetings and expert witness on numerous NYS-led enforcement actions and civil and criminal environmental suits.

Professional Experience (continued)

***Chief of Operations, World Trade Center Disaster Response and Recovery, New York State Department of Environmental Conservation.* September 11, 2001 – August, 2002.**

Chief of Operations for New York State's civilian environmental response to the World Trade Center disaster and subsequent recovery operation. Supervised and managed 75 technical staff performing full-time oversight of World Trade Center debris transport, processing, disposal and permitting operations for full duration of the response. Managed communications, environmental regulation and permitting, inspection and spills response.

***Chief, NYC Solid Waste, Recycling, RCRA & Pesticide Programs, New York State Department of Environmental Conservation.* 2000 - 2002.**

Chief of New York State's Solid Waste, Recycling, RCRA and Pesticide programs in New York City. Responsible for regulation of collection, recycling, transfer and export of New York City's solid waste; hazardous waste storage, transport, disposal and corrective action on over 5,000 RCRA sites; and pesticide application, training and permitting including West Nile response regulation.

***Senior Scientist, Divisions of Solid and Hazardous Waste, New York State Department of Environmental Conservation*. 1986 – 2000.**

New York State's principal scientist, project manager and investigator in New York City for remediation of solid waste landfills and hazardous waste sites, including investigation, remediation and closure of Fresh Kills Landfill, the largest landfill cleanup in U.S. history.

***Senior Scientist, LMS Engineers.* 1982-1985.**

Scientist for private engineering consulting firm performing environmental impact statements and aquatic field investigations in the Hudson River Estuary.

***Lab Technician, Columbia University, Lamont Doherty Earth Observatory.* 1979-80.**

Academic Affiliations

***Columbia University, Adjunct Professor & Senior Research Scientist.* 1999 – present.**

Research Scientist, Professor and course instructor at Columbia University. Research on urban sustainability, geochemistry and urban environmental history with emphasis on the evolution of government environmental regulation and protection of urban public health and the environment and historic sources of urban pollution.

***Hunter College, Adjunct Professor, Department of Environmental and Occupational Health Sciences.* 1999.**

Selected Publications

- Walsh, D.C., Glass, K., Morris, S., Zhang, H., McRae, I., Holberton, S., Anderson, N., Egendorf , S.P., Cheng, Z., Alfieri, A., & Owrang, S.N. *Soil Exchange to Mitigate Pollutant Exposure in Urban Community Gardens*. Journal of Environmental Management (accepted for publication).
- Egendorf, S.P., Cheng, J., Walsh, D.C., *Constructed soil mixtures to mitigate lead contamination in urban community gardens.* Journal of Environmental Quality (under review).
- Walsh, D.C. *Financial and environmental return of brownfield remediation in urban areas*. In preparation.
- Walsh, D.C., Glass, K, Morris, S., Zhang, H., Moore, H., McRae, I., Anderson, N., Owrang, S. N., & Wilding, J. *Local Soil Exchange to Improve Coastal Flood Resilience and Reduce Environmental Toxin Exposure in Urban Areas.* Environmental Science and Technology (under review).
- Walsh, D.C. *Municipal regulation of land cleanup: An idea whose time has come.* Brownfield Renewal, September, 2015
- Walsh, D.C. 2014. *Integration of equity principles into government agency operations.* NYC City Hall Press.
- Walsh, D. C., et al., 2014. *SPEED Environmental Research Engine* in *The GIS Guide for Elected Officials*, ed. C. Fleming, ESRI Press, Wash., DC. 212 pp.
- Walsh, D.C. 2013. Regulatory reform to speed government permit approvals. NYC City Hall Press.
- Walsh, D.C. 2011. *New York City Voluntary Cleanup Program*. NYC Office of Environmental Remediation, NY, NY.
- Walsh, D.C. 2010. *New York City Brownfield Incentive Grants*. NYC Office of Environmental Remediation, NY, NY.
- Sayler, G., Walsh, D. C. et al. *Consultation on the United States Environmental Protection Agency's Homeland Security Research Program*; **2008**; Board of Scientific Counselors Homeland Security Committee, EPA-BOSC-08.
- Louchouarn, P., et al., Walsh, D. C. *Elemental and Molecular Evidence of Soot- and Char-Derived Black Carbon Inputs to New York City's Atmosphere during the 20th Century*, Environ. Sci. Technol.; **2007;** *41*(1) pp 82 – 87.
- Fischoff, B., Walsh, D. C. et al. *Consultation on the United States Environmental Protection Agency's Emergency Consequence Assessment Tool and Incident Based Microbial Risk Assessment Tool*; **2007** Science Advisory Board Homeland Security Advisory Committee, EPA-SAB-07-012.
- Fischoff, B., Walsh, D. C. et al. *Consultation on the Water Sentinel Program and Standard Analytical Methods*; **2006**; Science Advisory Board Homeland Security Advisory Committee, EPA-SAB-06-005.
- Alfsen-Norodom, C., Walsh, D. C., et al. *Managing the Megacity for Global Sustainability*. In *Urban Biosphere and Society*, Alfsen-Norodom, C., Lane, B. D., and Corry, M., Eds. Annals of the New York Academy of Sciences, **2004**, 125-141
- Walsh, D. C. *Urban residential refuse composition and generation rates in the 20th century*. Environmental Science & Technology, **2002,** 36, 4936.
- Walsh D. C. *The evolution of refuse incineration*. Environmental Science & Technology, **2002**, *36*, 316.

Publications (continued)

- Walsh, D.C., Chillrud, S. N., Simpson, H. J., and Bopp, R. F. *Refuse incinerator particulate emissions and combustion residues for New York City during the 20th century*. Environmental Science & Technology, **2001**, *35*, 2441.
- Chillrud, S.N, Bopp, R.F., Simpson, H.J., Ross, J., Schuster, E.L., Chaky, D.A., Walsh, D.C., Chin Roy, C., Tolley, L.R. and Yarme, A. *Twentieth Century atmospheric metal fluxes into Central Park Lake, New York City*. Environmental Science & Technology, **1999**, *33*, 657.
- Walsh, D.C. *Geochemistry of Solid-Waste Landfills*. Dissertation, Rensselaer Polytechnic Institute, **1996**.
- Walsh, D.C., R.G LaFleur. *Landfills in New York City: 1844-1994*. Groundwater, **1995**, *33*(4), 556.
- Bopp, R.F. and Walsh, D. C. *Rivers and estuaries - A Hudson perspective*. in: Environmental Science in the Coastal Zone, National Research Council, Commission on Geosciences, Environment and Resources, National Academy Press, Wash. D.C, p. 49-67, **1994**.
- Walsh, D.C., R.G. LaFleur, and R.F. Bopp. *Polycyclic aromatic hydrocarbons in old landfills*. Northeastern Geology, **1994**, *16(2)*, 137.
- Walsh, D.C., R.G LaFleur, and R.F. Bopp. *Stable carbon isotopes in dissolved inorganic carbon of landfill leachate*. Proc., Conf. on Eastern Regional Ground Water Issues, Burlington, Vermont, NGWA, p. 153-168, **1993**.
- Walsh, D.C. *The Landfills of New York City*. The Tidal Exchange, Hudson River Foundation, N.Y., **1992,** *1*, 5.
- Walsh, D.C. *New York Remembers a Century of Recycling*, World Wastes, Atlanta, Georgia, **1991**, *34(3)*, 76.
- Walsh, D.C. *Solid Wastes in New York City: A History*. Waste Age, Wash., D.C., April, p. 114-124, **1989**.
- Walsh, D.C. *New York City's Solid Waste Crisis*. Clearwaters, **1988**, *June*, 18.
- Walsh, D.C., and Rives, S. *Surface water tracer investigation of leachate discharge from a New York City landfill*. Proc., Conf. on Eastern Regional Groundwater Issues, September 27-29, 1988, Stamford, Conn., NGWA, p. 101-120, **1988**.
- Walsh, D.C. *Integration of surface geophysical techniques for landfill investigation: a case study*. Proc., Nat. Conf. on Aquifer Restoration, Las Vegas, Nev., NGWA, p. 753-778, **1988**.

Selected Certification & Appointments

- USEPA, Science Advisory Board, Homeland Security Advisory Committee.
- USEPA, Board of Scientific Counselors, Homeland Security Committee.
- New York Academy of Sciences Technical Advisory Board
- USEPA New York Harbor Contaminant Trackdown Scientific Advisory Board
- Columbia University Industry Advisory Committee
- Association of Groundwater Scientist and Engineers
- Certified Ground Water Professional

Selected Honors

- 2015, Innovation in American Government Award. Five most innovative government programs in U.S. *Harvard University Kennedy School* (Vacant Land Cleanup & Revitalization Initiative)
- 2015, Environmental Excellence Award, *NYS Department of Environmental Conservation*. (NYC Clean Soil Bank.)
- 2013 Environment & Sustainability Steward of Year Award, *American Bar Association*
- 2013 National Brownfield Person of the Year, *National Brownfield Association*.
- 2013 Best Economic Development Program Award, *Northeast Economic Development Association* (NYC Brownfield Incentive Grant Program).
- 2013 National Brownfield Leadership Award, *National Association of Government Environmental Professionals*.
- 2013 Green Service Award, *New Partners for Community Revitalization.*
- 2013 Green Star Award, *UN Environmental Programme* (for Hurricane Sandy Debris recycling).
- 2012 Diamond Award, *American Council of Engineering Companies* (for NYC Voluntary Cleanup Program)
- 2011 People's Choice Award, *ICMA* (for NYC Voluntary Cleanup Program)
- 2001Distinguished Service Award for World Trade Disaster Response, U.S. FBI
- 2001 Meritorious Service Award for World Trade Response NYC Police Department
- 1996 LaFleur Doctoral Award, Rensselaer Polytechnic Institute
- 1992 Polgar Doctoral Fellowship, Hudson River Foundation
- Radke Undergraduate Award, University of Massachusetts

Expert Witness Testimony

Provided expert witness testimony on more than 20 occasions in court cases in New York State Supreme Court, U.S. Federal Court Eastern New York District, New York City Criminal Court, and in numerous administrative and legislative hearings.

Invited Lectures (selected)

United Nations (UNESCO)
U. S. National Research Council
U. S. Environmental Protection Agency
U. S. National Estuary Program
Israel Geological Association
National Brownfield Association
New York Academy of Sciences
New York Business Council
National Groundwater Association
Association of Ground Water Scientists and Engineers
Fresh Water Institute
Lamont-Doherty Earth Observatory
Hudson River Foundation
Ukranian Institute
Environmental Contractors Association
New York City BAR
National Bar Association
Real Estate Board of New York
New York State Attorney General
New Partners for Community Revitalization
New York State Association of Solid Waste Managers
New York State Geological Society
New York State Department of Environmental Conservation
Columbia University
Hunter College
New York University
St. John's University
Rutgers University
SUNY Stonybrook
Rensselaer Polytechnic Institute
University of Massachusetts
College of Staten Island
New York Soil Conservation District
Urban Soil Institute

CURRICULUM VITAE

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Education

1980 - 1984	Harvard University: M.A., Ph.D. (Psychology: Behavior and Decision Analysis)
1976 - 1980	York University: B.A., Summa cum Laude (Psychology)

Professional Positions

2013	Linde Visiting Fellow, Ronald and Maxine Linde Institute for Economic and Management Sciences, California Institute of Technology
2012 - 2014	Visiting Research Collaborator, Princeton Institute for International and Regional Studies, Princeton University
2009 -	Earth Institute Professor, Columbia University
2009	Visiting Professor, Copenhagen Business School
2007 - 2008	Fellow, Russell Sage Foundation
2006	Visiting Professor, London Business School
2004 - 2005	Chair, Management Division, Graduate School of Business, Columbia University
2003 -	Jerome A. Chazen Professor of International Business, Columbia Business School
2004	Guest Professor, Department of Quantitative Economic Research, University of Fribourg, Switzerland
2002	Fellow, Wissenschaftskolleg (Institute for Advanced Study), Berlin, Germany
1999 -	Professor of Management, Graduate School of Business, and Professor of Psychology, Department of Psychology, Columbia University
1995 - 1999	Professor, Department of Psychology and Department of Management & Human Resources, Ohio State University
1994	Professor of Organizational Behavior and Leadership, Guest Chair, Otto Beisheim Graduate School of Corporate Management (WHU), Koblenz, Germany

1992 - 1993	Fellow, Center for Advanced Studies in the Behavioral Sciences, Stanford, CA
1988 - 1995	Assistant and Associate Professor of Behavioral Science, Center for Decision Research, Graduate School of Business, University of Chicago
1985 - 1988	Assistant Professor, Department of Psychology, University of Illinois at Urbana-Champaign
1984 - 1985	Natural Science and Engineering Research Council Post-Doctoral Fellow, Department of Psychology, University of Toronto

Research Interests

Determinants of Risky Decision Making; Cultural, Age, Gender, and Species Differences in Decision Making under Risk and Uncertainty; Measurement of Risk Perception and Risk Attitude; Role of Memory and other Cognitive Processes in Preference Construction; Financial Decision Making; Environmental Decision Making; Decision Neuroscience; Neuroeconomics

Professional Organizations

American Psychological Association (Fellow), American Psychological Society (Fellow), Society for Judgment and Decision Making (Past President), Society for Neuroeconomics (Past President), Society for Mathematical Psychology (Past President), Society for Risk Analysis, Institute for Operations Research and the Management Sciences, Decision Analysis Society (Past Council Member)

Selected Professional Activities

2014 -	US National Academy of Sciences (NAS) National Member Organization (NMO) for the International Institute for Applied Systems Analysis (IIASA) Member
2013 -	Steering Committee Member, International Panel on Social Progress, Foundation Maison des Sciences de l'Homme
2013 -	Columbia University Tenure Review Advisory Committee (TRAC) Member
2012	Co-Chair, Advisory Committee, Green Growth Knowledge Platform (GGKP) of OECD, UNEP, and World Bank
2012 -	Mind Brain Behavior Initiative Faculty Advisory Committee Member, Columbia University
2012 -	Co-Director, Network for Utilization of Social Science Research on Sustainability and Energy (NUSSRoSE)
2012 -	ClimateCoLab Advisor, MIT
2011 -	Provost Faculty Advisory Committee Member, Columbia University
2011	Institute for Advanced Study Visiting Fellow, Technical University Munich, Germany
2011 - 2014	Lead Author, Intergovernmental Panel on Climate Change (IPCC), 5th Assessment Report, Working Group III

2010- 2011	Contributing Author, IPCC Special Report, Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation
2010 -	Decision Strategies International (DSI), Energy Expert Network (DEENET), London, UK
2009 -	Advisory Board Member, Harmony Institute
2009 - 2010	Member, Global Agenda Council on Decision-making and Incentives Systems, World Economic Forum
2009 -	Executive Committee Member, Earth Institute, Columbia University
2009 - 2011	Board Member, Federation of Associations in Behavioral & Brain Sciences (FABBS) Foundation
2008 - 2009	Member, American Psychological Association (APA) Task Force on Interface between Psychology and Global Climate Change
2007 - 2008	President, Society for Neuroeconomics
2007 - 2011	Board of Directors, Association for Psychological Science (APS)
2007 -	Steering Committee Member, Columbia Climate Center (C3)
2007	Carnegie Mellon President's Advisory Board Member for the Department of Social and Decision Sciences
2006 - 2010	Associate, National Intelligence Council
2005 - 2006	Panel Member, Estimating and Communicating Uncertainty in Weather and Climate, National Research Council, National Academy of Sciences
2004 - 2009	Advisory Board Member, Society for Neuroeconomics
2004 -	Co-Director, Center for Research on Environmental Decisions (CRED), Columbia University
2004 - 2007	Chair, Working Group IV (Public Attitudes, Ethical Issues, and Decision Making) for Global Roundtable on Climate Change, Columbia University
2003 - 2006	Member, Academic Advisory Committee, Ethical Globalization Initiative (EGI), Aspen Institute, International Council on Human Rights Policy, and Columbia University
2002 - 2004	Academic Director, Jerome A. Chazen Institute of International Business, Graduate School of Business, Columbia University
2001 - 2003	Director of Graduate Studies, Department of Psychology, Columbia University
2000 -	Co-Director, Center for Decision Sciences, Columbia University

2000 - 2003	Co-Chair, International Scientific and Technical Advisory Committee (ISTAC) for the International Research Institute for Climate Prediction (IRI)
2000 - 2009	Member, Academic Steering Committee, Earth Institute, Columbia University
2000 - 2001	President, Society for Mathematical Psychology
1997 - 2003	Member, Committee on the Human Dimensions of Global Change, National Academy of Sciences
1997 - 2000	Committee Member, Forum on Research Management, Federation of Behavioral, Psychological, and Cognitive Sciences
1997 - 1998	President, Society for Judgment and Decision Making
1997 - 1999	Panel Member, Human Dimensions of Seasonal-to-Interannual Climate Variability, National Research Council, National Academy of Sciences
1997 - 1999	Panel Member, Network on Economic Environments and the Evolution of Individual Preferences and Social Norms (Risk Sub-Network), MacArthur Foundation
1997	Panel Member, Joint National Science Foundation and American Psychological Society, Capital Initiative Workshop
1996 - 1998	Review Panel Member, National Science Foundation: Decision, Risk, and Management Science Program

Editorships and Editorial Advisory Panels

Editor, Chazen Web Journal of International Business (2002 - 2004); Co-Editor, Risk Decision & Policy (1999-2002); Associate Editor, Management Science (2006 - 2009; 2012 - present); Associate Editor, Organizational Behavior and Human Decision Processes (1998 - 2001), Associate Editor, Weather, Climate, and Society (2008 – present); Social Science Editorial Advisory Panel (EAP) Member, Nature Climate Change (2013 – present).

Editorial Boards

American Journal of Psychology (1986 - present); Betriebswirtschaft (2007 – present); Judgment and Decision Making (2007 – present); Journal of Experimental Psychology: Learning, Memory, and Cognition (1994 – 1997; 2002 - 2010); Journal of Experimental Psychology: General (2007 - present); Journal of Mathematical Psychology (1995 - 2003); Journal of Risk and Uncertainty (2010 – present); Management and Organization Review (2005- present); Organizational Behavior and Human Decision Processes (1993 – 1998; 2002 - 2004); Psychological Inquiry (2002 – present); Psychological Review (2001 – present); Psychological Science (2006 – present); Risk Decision & Policy (1998 - 2002)

Ad-Hoc Reviewing

Journals: Academy of Management Journal, Academy of Management Review, Acta Psychologica, American Economic Review, American Journal of Political Science, American Psychologist, Basic and Applied Social Psychology Journal, Brain and Cognition, Climate Policy, Climatic Change, Cognition, Cognitive Processing, Cognitive Psychology, Cognitive Science, Decision Analysis, Economic Psychology, Ecological Economics,

European Journal of Neuroscience, Experimental Economics, Geneva Risk and Insurance Review, Global Environmental Change, Human Ecology Review, IEEE Transactions on Systems, Man, and Cybernetics, International Journal of Intelligent Systems in Accounting, Finance, and Management, International Journal of Risk Assessment and Management, Journal of Behavioral Decision Making, Journal of Business, Journal of Clinical and Experimental Neuropsychology, Journal of Economic Behavior and Organization, Journal of Experimental Psychology: Human Perception and Performance, Journal of Experimental Social Psychology, Journal of the International Neuropsychological Society, Journal of Neuroscience, Journal of Personality and Social Psychology, Journal of Risk and Uncertainty, Journal of Risk and Insurance, Management Science, Manufacturing and Service Operations Management, Marketing Letters, Medical Decision Making, Memory, Memory and Cognition, Nature Neuroscience, Nature Climate Change, Neuron, Neuroscience Letters, Personality and Social Psychology Bulletin, Perspectives on Psychological Science, PLoS Computational Biology, Proceedings of the National Academy of Sciences, Psychological Bulletin, Psychological Review, Psychological Science, Psychonomic Bulletin and Review, Review of Environmental Economics and Policy, Risk Analysis, Social Science & Medicine, Sociological Quarterly, Theory and Decision, Trends in Cognitive Science, Water Resources Research.

Grant Proposals: **National Science Foundation (NSF)**: Decision, Risk, and Management Science; Economics; Cognitive Neuroscience; Social Psychology; Human Cognition and Perception; Methodology, Measurement, and Statistics; Time Sharing Experiments for the Social Sciences; **National Institute of Mental Health (NIMH)**; **National Institute of Aging (NIA**); US Department of Commerce: National Oceanic and Atmospheric Administration (NOAA); Israeli Science Foundation; Australian Research Council Endeavour Awards; Hong Kong Research Grants Council; European Science Foundation; Swiss National Science Foundation; Max Planck Society

Other Reviewing: Nobel Prize in Economic Science; Center for Advanced Studies in the Behavioral Sciences (CASBS); MacArthur Foundation

Honors and Awards

2012	Elected Member of German National Academy of Sciences (Leopoldina)
2012	Honorary Professorship, Economic Science, Technical University Munich, Germany
2011	Fellow, Society for Risk Analysis
2010	Chazen Senior Scholar, Graduate School of Business, Columbia University
2009	Honorary Doctorate in Psychology, University of Basel, Switzerland
2003	Academy of Management, Organizational Behavior Division, Best Paper Award
2000	Chazen International Research Prize, Graduate School of Business, Columbia University
1999	INFORMS Decision Analysis Society Publication Award
1998	Fellow, Association for Psychological Science
1996	Fellow, Division 3 (Experimental Psychology, American Psychological Association
1994	Outstanding Young Investigator Award, Society for Medical Decision Making

1990	James S. Kemper Foundation Research Scholar, Graduate School of Business, University of Chicago
1988	Young Psychologist Award, American Psychological Association, XXIV International Congress, Sydney, Australia
1986	University of Illinois Instructional Award: "List of Faculty Rated Excellent"
1985	Natural Science and Engineering Research Council of Canada: Postdoctoral Fellowship
1980 - 1984	Natural Science and Engineering Research Council of Canada: Postgraduate Scholarship
1980	Vanier Award for Academic Excellence, York University

Grants

Choice architecture to guide infrastructure development decisions that impact energy, National Science Foundation, INSPIRE, $2,496,000, 9/14-8/17, Decision Pending.

RISk and uncertainty in developing and Implementing Climate change pOlicies (RISICO), European Research Council (ERC), subcontract to Columbia University (main contract, PI Valentina Bossetti, Bocconi University, $1,400,000), $100,402, 7/14-6/19.

Rebound vs. Gateway Effects of Pro-Environmental Behavior, National Science Foundation, SES-1325660, $498,000, 7/13 – 6/16.

Doctoral Dissertation Research (Lisa Zaval) in DRMS: Affective Forecasting across the Lifespan, National Science Foundation: $12,880, 9/13-8/14.

Decisions from Experience and the Role of Feedback in Environmental Decisions, National Science Foundation, SES-1227462, $450,000, 9/12-8/14.

Cognitive and Emotional Sources of Wise Decision Making Across the Lifespan, National Institute of Aging, R01, $320,000, 10/12-9/14.

Network for Utilization of Social Science Research on Sustainability and Energy (NUSSRoSE), National Science Foundation: Research Coordination Networks (RCN), DBI-049179401, $318,000, 1/12-12/14.

Testing the capital constraint: Designing policies to promote small farmer organic fertilizer use in sub-Saharan Africa. Cross-Cutting Initiatives, Earth Institute, Columbia University. $30,000, 6/11-5/12.

Understanding and Improving Environmental Decisions, National Science Foundation: Decision Making Under Uncertainty Center Competition, SES-0951516, $6,500,000, 10/10-9/15.

Doctoral Dissertation Research (David Hardisty) in DRMS: Discounting Future Losses, National Science Foundation: Decision Making Under Uncertainty Center Competition, SES-1024599, $22,310, 9/10-7/11.

Development of Dynamic Risky Decision Making: Behavioral Phenomena and Neural Underpinnings. National Science Foundation, SES-0922743. $277,870.00, 10/09-9/13.

Temporal Discounting of Social Goals, National Science Foundation, SES-0820496, $668,503, 9/08-8/12.

Individual and Group Decision Making under Climate Uncertainty, National Science Foundation, SES-0345840S, $500,000, 10/08-9/13.

Environmental Decision Making by Individuals and Groups. National Science Foundation, SES-0720452, $494,390. 10/07-9/10.

Decision Making Over the Life Span: How Memory Affects Preferences. National Institute of Aging, R01AG027931-01A2, $1,602,680, 09/07-08/12.

Affective and Deliberative Risky Decision Making in Children, Adolescents, and Adults. National Science Foundation, SES-0720932, $88,677. 10/07-9/09.

Center for Research on Environmental Decisions (CRED) Communication Guide development. Charles Evans Hughes Memorial Foundation, $25,000, 06/08-05/09.

Salary support for Russell Sage Foundation Fellowship, Russell Sage Foundation, $126,000, 9/07-7/08.

Collaborative Research: Interactions between changing climate and technological innovation: Implications for land use and sustainability. National Science Foundation Special Competition: Human and Social Dynamics: Agents of Change, EF-0709701, CU subcontract level of funding: $175,310. 9/07-8/10.

Neuropsychology of Risk Perception and Risk Taking. National Science Foundation, SES-0452932, $113,196. 3/05-2/07.

Center for Research on Environmental Decisions, National Science Foundation Special Competition: Decision Making Under Uncertainty Center, SES-0345840, $5,900,000, 10/04-9/09.

Center for International Business Education, Department of Education, $100,716, 10/04-9/05.

Understanding and Modeling the Scope for Adaptive Management in Agroecosystems in the Pampas in Response to Interannual and Decadal Climate Variability and Other Risk Factors, National Science Foundation Biocomplexity Initiative, SES-0410348, $1,630,296, 06/04-05/08.

Moral and Ethical Decision Making. Department of National Defense, Canada, $89,196, 5/04-4/06.

Decision-making in agricultural production in the Argentine Pampas: Alternative choice process formulations and the value of climate information. National Oceanographic and Atmospheric Administration, GC04-159, $258,561, 5/04-4/07.

Preferences as Memory. National Science Foundation, SES-0352062, $459,000. 4/04-3/07.

Development of a Domain-Specific Risk-Taking Scale. Department of National Defense, Canada, $19,472, 8/02-7/03.

The Role of Climate Perceptions, Expectations, and Forecasts in Farmer Decision Making in the Argentina Pampas. International Research Institute for Climate Prediction, $42,800, 11/01-10/02.

Developing a Taxonomy of Decision Modes. National Science Foundation, SES-0079664, $160,000, 7/00-6/02.

Predicting Modes of Decision-Making: A Cross-Cultural and Multi-Method Approach. National Science Foundation, SES-9819055, 0096015, $271,000, 4/99-3/01.

Perceived Risk-Attitudes: A New Assessment Scale for a New Model of Risk-Taking. John D. and Catherine T. MacArthur Foundation, $5,000, 2/1/98 - 12/1/99.

Decisions and Interactions Under Risk and Uncertainty Within and Across Cultures. National Science Foundation,SES-9631860, $225,000, 8/96-7/98.

Risk Perception and Decision Making Under Risk and Ambiguity in the U.S.A., Poland, P.R. China, and Hong Kong: National Science Foundation, SES-9422819, $50,000, 3/95-2/96.

Salary support to visit Center for Advanced Studies in the Behavioral Sciences, Stanford University: National Science Foundation, $35,000, 8/92-7/93.

Farm-Level Decisions in the Face of Global Warming: Descriptive and Prescriptive Issues in Complex Decision Making under Uncertainty: National Science Foundation, SES-9109942, $66,000, 8/91-7/92.

Risk Perception and Risk Attitudes: Definitions, Assessment Procedures, Effects on Behavior, and Dynamic Change: National Science Foundation, SES-8910211, $30,000, 8/89-7/90.

Dynamic Decision Models in Medical Diagnosis: University of Illinois Research Board, $19,500, 9/87-8/88.

Information Acquisition in Medical Decision Making: National Institute of Health, $5,000, 6/87-8/88.

Tests and Extensions of Conjoint Expected Risk: National Science Foundation, SES-8606750, $27,000, 10/86-7/88.

Human Perception, Judgment and Decision-Making in the Arms Control Process: University of Illinois Program in Arms Control, Disarmament, and International Security, $5,000, 6/86-7/86.

IBM Project EXCEL Award for Hardware and Software Development of Computer-Based Laboratory of Human Decision Making: IBM, $57,000, 6/86-12/87

Quantifying Perceived Risk in Medical Decision Making: National Institute of Health, $5,000, 6/86-5/87.

Process Model for Decision Making under Risk: University of Illinois Research Board, $18,500, 9/85-8/86.

Publications: Books and Project Reports

Weber, E.U. & Johnson, E.J. (2012). Psychology and Behavioral Economics Lessons for the Design of a Green Growth Strategy. White Paper for Green Growth Knowledge Platform (OECD, UNEP, World Bank). http://econ.worldbank.org/external/default/main?pagePK=64165259&theSitePK=469372&piPK=64165421&menuPK=64166093&entityID=000158349_20121017141002&cid=DEC_PolicyResearchEN_D_INT

Task Force on the Interface between Psychology and Global Climate Change (2009). Psychology and Global Climate Change: Addressing a Multi-faceted Phenomenon and a Set of Challenges. American Psychological Association, Washington, DC (http://www.apa.org/science/climate-change/).

National Research Council Report, Completing the Forecast: Characterizing and Communicating Uncertainty for Better Decisions using Weather and Climate Forecasts, Cutler, P. & Ban, R. (Eds.), (2006), Washington, DC: National Academies Press.

Ancker, J. S. & Weber, E. U. (2005). Moral and ethical decision making: A review. Report for Defence R&D Canada, Toronto. Center for the Decision Sciences, Columbia University.

Hansen, J., Marx, S., Weber, E. U. (2004). The Role of Climate Perceptions, Expectations, and Forecasts in Farmer Decision Making: The Argentine Pampas and South Florida. International Research Institute for Climate Prediction (IRI), Palisades, NY: Technical Report 04-01.

Ostrom, E., Dietz, T., Dolsak, N., Stern P. C., Stonich, S., & Weber, E. U. (Eds.) (2002). The Drama of the Commons. Washington, D. C.: National Academies Press.

Weber, E. U., Baron, J., & Loomes, G. (Eds.) (2001). Conflict and Tradeoffs in Decision Making. Cambridge University Press.

National Research Council Report, Making Climate Forecasts Matter, Stern, P. C., & Easterling, W. E. (Eds.), (1999), Washington, DC: National Academies Press.

Weber, E. U. (1983). Study Guide for Principles of Statistics by Paul A. Herzberg. New York: Wiley.

Herzberg, P. A., & Weber, E. U. (1983). Instructors Manual for Principles of Statistics. New York: Wiley.

Publications: Journal Articles and Book Chapters

(136) Zaval, L., Keenan, E.A., Johnson, E.J., & Weber, E.U. (in press). Understanding local warming: How warm days lead to increased belief in global warming. Nature Climate Change.

(135) Kunreuther, H., & Weber, E.U. (2014). Aiding decision making to reduce the impacts of climate change. Journal of Consumer Policy, in press, published online January 29, 2014: http://download.springer.com/static/pdf/815/art%253A10.1007%252Fs10603-013-9251-z.pdf?auth66=1400262067_7de135e18a15e8b8f14e540c7122d5e3&ext=.pdf (listed on 1/10/2014 as SSRN's Top Ten download list for PSN: Global Warming & Climate Change (Topic) Top Ten, on 1/11/2014 for CSN: General Cognitive Social Science (Topic) Top Ten, SRPN: Architecture (Topic) Top Ten, SRPN: Green Investment (Topic) Top Ten and SRPN: Other Sustainable Technology (Topic) Top Ten), on 1/17/2014 for SRPN: Energy Politics (Topic) Top Ten, on 2/4/2014 for Environmental Economics eJournal Top Ten and Political Economy - Development: Environment eJournal Top Ten, on 2/12/2014 for Built Environment eJournal Top Ten, on 2.27 for Political Economy - Development: Environment eJournal Top Ten and Politics & Energy eJournal Top Ten).

(134) Pinto, A., Steinglass, J.E., Greene, A.L.,Weber, E.U., Simpson H.B. (2014). Capacity to delay reward differentiates obsessive compulsive disorder and obsessive compulsive personality disorder. American Journal of Psychiatry, 75, 653-659.

(133) Patt, A. & Weber, E. U. (2013). Perceiving and communicating climate change uncertainty. WIREs: Climate Change.

(132) Weber, E.U. (in press), Individual and collective behavior change. World Social Science Report **2013** Changing Global Environments.

(131) Gong, M., Heal, G., Krantz, D.H., Kunreuther, H., & Weber, E. U. (in press). The role of subsidies in coordination games with interconnected risk. Revise and resubmit, Journal of Behavioral Decision Making.

(130) Hershfield, H.E., Bang, H.M., & Weber, E.U. (2013). National differences in environmental concern and performance predicted by country age. Psychological Science.

(129) Li, Y., Baldassi, M., Johnson, E.J., & Weber, E.U. (2013). Complementary cognitive competencies, economic decision making, and aging. Psychology and Aging, 28, 595-613. doi 10.1037/a0034172 (listed on 10/13/2013 as SSRN's Top Ten download for Human Cognition in Evolution & Development eJournal Top Ten, MKTG: Consumer Decision Making & Search (Topic) Top Ten, Neuroeconomics eJournal Top Ten, ORG: Other Decision Making, Organizational Behavior & Performance (Topic) Top Ten and ORG: Rationality, Cognition, & Decision Making (Topic) Top Ten, and on 10/18/2013 for MKTG Subject Matter eJournals Top Ten and MRN Marketing Network Top Ten).

(128) Gong, M., Krantz, D.H., & Weber, E. U. (in press). Why Chinese discount future financial and environmental gains but not losses more than Americans. Journal of Risk and Uncertainty.

(127) Weber, E.U. (2013). Seeing is believing. Nature Climate Change, 3, 312-313.

(126) Lerner, J., Li, Y., & Weber, E.U. (2013). Sadder but not wiser: The myopia of misery. Psychological Science, 24, 72-79 (listed on 08/07/2013 as SSRN's Top Ten download for ERN: Other Microeconomics: Intertemporal Consumer Choice & Savings (Topic) Top Ten, and on 08/10/2013 as SSRN's Top Ten download for Microeconomics: Intertemporal Consumer Choice & Savings eJournal Top Ten).

(125) Weber M., & Weber E. U., & Nosić, A. (2013). Determinants of changes in investor risk taking. Review of Finance, 17, 847-883 (listed on 12/30/2010 as SSRN's Top Ten download for ERN: Search; Learning; Information Costs & Specific Knowledge; Expectation & Speculations (Topic) Top Ten).

(124) Tobler, P. & Weber, E. U. (2013). Valuation for risky and uncertain choices. In: P. Glimcher & E. Fehr (Eds.), Neuroeconomics: Decision making and the brain , 2nd edition, (pp.). New York: Elsevier.

(123) Markiewicz, L., & Weber, E.U. (2013). DOSPERT's gambling risk-taking scale predicts excessive stock trading. Journal of Behavioral Finance, 14, 1-14.

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Under Review and In Preparation

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Savani, K., Westfall, J. E., Johnson, E. J., & Weber, E. U. (2013). Construing actions as choices: Focusing attention on relevant information during decision-making. Revise and resubmit, Psychological Science.

Greenspan Bell, R., & Weber, E.U. Build better habits: Applying behavioral insights to reduce greenhouse gas emissions. Under review, Goao Review.

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Smith, J.A., Konnikova, M., Handgraaf, M.J.J., & Weber, E.U. Patient and risky alone, impatient and cautious with others: Are groups the best forum for environmental decision making? Working paper, Center for Decision Sciences.

Konnikova, M., Figner, B., Mischel, W., & Weber, E. U. When self-control hurts: Financial risk-taking, stress, and illusory control. Working Paper, Center for Decision Sciences.

Weber, E.U., Kates, R.K., Krantz, D., Leiserowitz, A., Parris, T.M., & Vasi, I.B. Political and societal goodwill. In: J.S. Sachs and P. Schlosser (Eds.), Is Sustainable Development Feasible? Columbia University Press. Working Paper.

Slovic, P. & Weber, E.U. (2012). Perception of risk posed by extreme events. Working Paper, Center for Decision Sciences (listed on 08/26/2013 as SSRN's Top Ten download for ERN: Other Game Theory & Bargaining Theory (Topic) Top Ten).

Other Publications

Weber, E.U. & Bell, R. B. (2014). Focus on the habits: Applying behavioral insights to reduce greenhouse gas emissions. Boao Review, July 2014.

Hershfield, H.E & Weber, E.U. (2013). To Change Environmental Behavior, Should We Really Tell People the World Is Ending? Huffington Post, 09/03/2013: http://www.huffingtonpost.com/hal-e-hershfield/to-change-environmental-behavior_b_3845707.html

Weber, E.U. (2013). How can psychologists help make Earth Day every day? Behavioral Expert Elke Weber, PhD, Discusses Psychology and Environmental Protection. American Psychological Association Website, http://www.apa.org/news/press/releases/2013/04/earth-day.aspx

Weber, E. U. (2006). The Determinants of Risk Taking. Transcript and Webcast of Invited Presentation, Thought Leader Forum, Legg Mason Capital Management, Baltimore MD, September 28, 2006. http://www.leggmason.com/thoughtleaderforum/2006/conference/weber.html

Weber, E. U. (2003). Origins and functions of perceptions of risk. Transcript of Invited Presentation, National Cancer Institute (NCI) Workshop *Conceptualizing and Measuring Risk Perceptions*, February 13, 2003. http://dccps.nci.nih.gov/brp/presentations/weber.pdf

Weber, E. U. (2003). Objetivos y emociones en la toma de decisión. Suplemento de la edición No. 269 de la Revista CREA, Uso de informacion climatica: Para la toma de decisiones en la produccion agricola (p. 7).

Selected Mentions in the Popular Media

NPR: Marketplace

Climate change: how to talk about bad news
April 25, 2014
BYLINE: Sarah Gardner
http://www.marketplace.org/topics/sustainability/climate-change-how-talk-about-bad-news

MANCHESTER GUARDIAN
The communication of uncertainty is hindering climate change action
January 31, 2014
BYLINE: Adam Corner
http://www.theguardian.com/sustainable-business/climate-change-communication-uncertainty
Discusses the role of uncertainty in behavioral responses to climate change based on my 2014 WIRE Climate Change paper with Tony Patt.

The following publications all discuss my Nature Climate Change (2014) paper on "Local Warming"
CHRISTIAN SCIENCE MONITOR
Global warming? Public attitudes often at mercy of the weather, study finds.
January 13, 2014
BYLINE: Julie S
http://www.livescience.com/42526-weather-influences-climate-change-belief.html
US WORLD| AND NEWS REPORT
No, Global Warming Isn't Suddenly a Myth Because It's Really Cold Out
January 25, 2014
BYLINE: Yarrow Axford
http://www.usnews.com/opinion/articles/2014/01/25/no-global-warming-isnt-suddenly-a-myth-because-its-really-cold-out
Other publicity for "Local Warming":
http://conservationmagazine.org/2014/01/art-makes-environmental-change-real/; http://arstechnica.com/science/2014/01/acceptance-of-global-warming-rises-on-warm-days/?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+arstechnica%2Findex+%28Ars+Technica+-+All+content%29; http://www.natureworldnews.com/articles/5638/20140114/todays-weather-affects-peoples-beliefs-global-warming-trends.htm; http://www.alaskadispatch.com/article/20140114/global-warming-public-attitudes-often-mercy-weather-study-finds Weather Changes People's Climate Beliefs, Study Finds (right click for link) Headlines & Global News, http://www.livescience.com/42526-weather-influences-climate-change-belief.html; http://blogs.ei.columbia.edu/2014/01/12/why-do-we-run-hot-and-cold-on-climate-change/; http://news.discovery.com/earth/global-warming/how-weather-messes-with-our-global-warming-opinions-140112.htm; http://www.eenews.net/climatewire/2014/01/13/stories/1059992779; http://www.livescience.com/topics/global-warming/; http://www.climatenewsnetwork.net/2014/01/how-weather-shapes-our-climate-ideas/; http://www.rtcc.org/2014/01/13/publics-climate-change-concerns-shaped-by-weather-outside/; http://www.eco-business.com/news/how-weather-shapes-our-climate-ideas/; http://www.business-standard.com/article/news-ians/day-s-weather-influence-people-form-global-warming-opinions-114011300828_1.html; http://economictimes.indiatimes.com/environment/global-warming/days-weather-influence-people-form-global-warming-opinions/articleshow/28745569.cms; http://zeenews.india.com/news/eco-news/day-s-weather-influence-people-form-global-warming-opinions_903832.html

AARP BULLETIN
Declutter your Finances: Put wisdom to work for you
December 2013
BYLINE: Jane Bryant Quinn
http://www.aarp.org/money/investing/info-12-2013/simplify-financial-investments.html

Discusses my recent *Psychology and Aging* paper with Li, Johnson, et al. on the complementary contributions of fluid and crystallized intelligence to sound financial decisions across the life span, where fluid intelligence decreases with age and crystallized intelligence increases, at least into people's 60s.

PSYCHOLOGICAL SCIENCE BLOG
Heat wave psychology: Long past, greener future?
BYLINE: Wray Herbert
http://www.psychologicalscience.org/index.php/news/full-frontal-psychology/heat-wave-psychology-a-long-past-and-a-greener-future.html#comments
Discusses my recent *Psychological Science* paper with Hershfield and Bang on Gott's principle.
Other media mentions of this paper are at http://www.npr.org/2013/11/26/247297844/why-countries-invest-differently-in-environmental-issues; http://www.weather.com/health/how-make-people-care-about-climate-change-20131202; http://www.huffingtonpost.com/hal-e-hershfield/to-change-environmental-behavior_b_3845707.html

FOCUS ONLINE
DLDwomen 2013: Wieso wir 85 Hahre alt warden und mit 75 Jahren sterben
June 7, 2013
http://www.focus.de/wissen/mensch/psychologie/tid-32370/dldwomen-2013-wieso-wir-85-jahre-alt-werden-und-mit-75-jahren-sterben_aid_1044897.html
Discusses my joint presentation with Eric Johnson at DLDwomen in Munich

WALL STREET JOURNAL
What makes a risk taker:New research shows often-cautious people become daredevils in right context
May 22, 2013
BYLINE: Sue Shellenbarger
http://online.wsj.com/article/SB10001424127887324102604578497133593217870.html?mod=WSJ_LifeStyle_LeadStoryNA
Discusses my research on domain-specific risk taking and the DOSPERT scale

STATE OF THE PLANET BLOG (EARTH INSTITUTE, COLUMBIA UNIVERSITY)
Making Green Behavior Automatic
May 23, 2013
BYLINE: Renee Cho
http://blogs.ei.columbia.edu/2013/05/23/making-green-behavior-automatic/
Covers uses of "green" choice defaults and Choice Architecture Conference organized by Center for Decision Sciences

COVERAGE of 2013 Psychological Science paper with Jenn Lerner and Ye Li on the effect of sadness on consumer behavior (i.e., greater discounting of future rewards or a greater present bias) got covered by a broad range of publications and blogs, including: Boston Globe, Cosmopolitan, The Examiner, Huffington Post, Globe and Mail, Daily Telegraph, MoneyScience, Prevention, PsychCentral, Psychology Today, Salon, Science Daily, ScienceBlog, Wall Street Journal, Women's Health, CNNMoney (http://money.cnn.com/2012/11/29/pf/sadness-money/index.html), The Consumerist (http://consumerist.com/2012/11/29/if-youre-unhappy-you-know-it-keep-an-eye-on-how-you-spend-your-money/), Harvard Business Review, Daily Stat, April 19, 2013: http://links.mkt3142.com/servlet/MailView?ms=NTk5NDY2NQS2&r=Mzc4OTkyMDUzS0&j=NzE1NTAyNTIS1&mt=1&rt=0

BOSTON GLOBE

Policy paper from the Federal Reserve Bank of Boston examines financial panics
Dec. 5, 2012
BYLINE: Beth Healey
http://www.boston.com/businessupdates/2012/12/05/policy-paper-from-the-federal-reserve-bank-boston-examines-financial-panics/IGJdNmrqM58bQaFbJpG76J/story.html
Describes my paper with Anat Brancha from the Boston Federal Reserve Bank on the role of the human desire for control in the origin of financial panics.

FRANKFURTER RUNDSCHAU
Mit Psychotricks die Welt retten
Dec. 5, 2012
BYLINE: Simone Einzmann
Describes my work on choice architecture for environmental decisions.

NEW YORKER
Top Ten Myths About China in 2012
Dec. 3, 2012
BYLINE: Evan Osnos
http://www.newyorker.com/online/blogs/evanosnos/2012/12/top-ten-myths-about-china-in-2012.html#ixzz2GC7CstCo
Cites my work with Chris Hsee in the 1990s, showing that Chinese are less risk averse than Americans due to their larger social networks that cushion them against large losses.

STERN MAGAZINE
Wir moechten nicht glauben, dass sich die Welt veraendert
Nov. 9, 2012
BYLINE: Christoph Koch
Two-page interview with me about my work on the status quo bias as a barrier to people's willingness to embrace change.

TIME MAGAZINE
Handprints, Not Footprints
Mar. 12, 2012
BYLINE: Daniel Goleman
http://www.time.com/time/magazine/article/0,9171,2108015,00.html
Quotes my work on the importance of positive vs. negative motivators for environmentally-aware actions.

FALLING WALLS CONFERENCE (http://falling-walls.com/?intro), BERLIN, GERMANY, 2011
Video of talk: http://www.facebook.com/fallingwalls?sk=app_142371818162 (Session 2, time point 41:38). Synopsis of press coverage of my work on human resistance to change, triggered by my TED-like (general audience accessible) presentation (http://falling-walls.com/lectures/elke-u-weber/) on November 9, 2011 in Berlin, Germany, attended by business, political, and thought leaders from around Europe: BBC news interview with: http://soundcloud.com/falling-walls/bbc-elke-weberTwo print media interviews, in "Die Zeit," influential German weekly, and "Hamburger Abendblatt": http://www.zeit.de/2011/45/Interview-Elke-Weber http://www.abendblatt.de/ratgeber/wissen/article2088508/Mauern-einreissen-neue-Wege-gehen.html. My talk was referenced by German Chancellor Angela Merkel, who gave the lunch keynote address at the conference. The transcript of her remarks is published at:
http://www.bundesregierung.de/nn_1264/Content/DE/Rede/2011/11/2011-11-09-merkel-falling-walls.html.
English translation of selection from Angela Merkel's address: "Mr. Turner told me that you discussed this morning the research of Elke Weber, who works as an economic psychologist at Columbia University. Perhaps her research can give us some hints on why it is so difficult to convert our knowledge in action. Her research

makes it clear that we need insight into existing problems, but that we also need a cause or trigger for acting on such insight. Particularly suitable triggers are unpleasant events. Therefore we should take the unpleasantness of the current [European] debt crisis as a trigger to think about whether we can make significant changes in our current operations. One could say that this could be a silver lining in the unpleasantness of the current crisis. This could be a turning point, a trigger that causes important and long lasting change."

DALAI LAMA MIND & LIFE INSTITUTE WORKSHOP, October 17 – 21, 2011
5-day meeting with His Holiness the Dalai Lama in his private residence in Dharamsala, India, with other climate, behavioral and environmental scientists and Buddhist scholars to discuss *Ecology, Ethics and Interdependence* as part of the Mind and Life XXIII Conference,. I led the session "Ethics and Action: The Psychology of Action and Behavior Change" and presented the Dalai Lama with the CRED Communications Guide. See the Mind & Life Institute website for an overview and video recordings. For additional coverage of the event, read my guest postcard entry written with University of Arizona's Diana Liverman, in Andrew Revkin's NYT Dot Earth blog, news bulletins by APS http://www.psychologicalscience.org/index.php/video/aps-fellow-talks-psychological-science-with-the-dalai-lama.html, India Times http://oneclick.indiatimes.com/photo/0cBU5ea7y6dvG?q=Dalai+Lama, Kevin Krajick's *State of the Planet* entry, *Methane, Modern Science and the Dalai Lama*, San Francisco Examiner http://www.examiner.com/spirituality-in-san-francisco/dalai-lama-leads-way-on-environment-and-ethics, Dallas Morning News http://topics.dallasnews.com/photo/0cBU5ea7y6dvG, Toronto Star http://themes.thestar.com/photo/0cBU5ea7y6dvG, Columbia Business School http://www4.gsb.columbia.edu/news/item/7321319/Professor+Elke+Weber+Talks+Environment+with+the+Dalai+Lama, MBA Periodical http://mba-periodical.blogspot.com/2011/11/dalai-lama-talks-with-chazen-senior.html, Vineyard Voice http://vineyardvoice.org/content/methane-modern-science-and-dalai-lama, FirstPost http://firstpost.com/topic/person/dalai-lama-the-dalai-lama-right-attends-a-session-of-the-mi-image-0cBU5ea7y6dvG-45484-1.html, International Network of Engaged Buddhists http://www.inebnetwork.org/news-and-medias/8-news/226-mind-and-life-institutes-23rd-meeting-with-his-holiness-the-dalai-lama.

CFA MAGAZINE
"Out of the Sky: How can advisors help clients who struggle with financial windfalls?"
Sept-Oct 2010
BYLINE: Rhea Wessel

COLUMBIA IDEAS@WORK
"Remembering the Future"
March 26, 2010
http://www4.gsb.columbia.edu/ideasatwork/feature/7211690/Remembering+the+Future
Discusses my research on Query Theory and discounting
(one of five most popular stories of 2010)

PSYCHOLOGY HEUTE (German Edition of PSYCHOLOGY TODAY)
Warum wir uns oft falsch entscheiden: Elke Weber im Gespräch
February 2010
BYLINE: Wolfgang Streitboerger
http://www.psychologie-heute.de/artikel/heft1002.html#a1
Interview about my work on risk perception and risk reactions and the current financial crisis
Reprinted in Special Issue of PSYCHOLOGIE HEUTE on "Die Qual der Wahl: Wie trifft man Entscheidungen?", 2011

SÜDDEUTSCHE ZEITUNG
Wir Neandertaler

September 12, 2009
BYLINE: Michaela Hass
Describes my work on environmental decisions making and my Center for Research on Environmental Decisions (CRED)

NPR MARKETPLACE
Built on Belief: Crisis rattled belief in financial system
BYLINE: Kay Rysdall
http://marketplace.publicradio.org/display/web/2009/09/10/pm-built-on-belief-essay/

NEW YORK TIMES MAGAZINE
Why Isn't the Brain Green?
April 16, 2009
BYLINE: Jon Gertner
Describes my work on environmental decisions making and my Center for Research on Environmental Decisions (CRED)

WALL STREET JOURNAL
The Intelligent Investor: Pay Collars Won't Hold Back Wall Street's Big Dogs
February 7, 2009
BYLINE: Jason Zweig
http://online.wsj.com/article/SB123396963383059235.html
Quotes me on my work on discounting

Museum of Natural History, New York City
Interview Video accompanying exhibit: Climate Change*:* The Threat to Life and A New Energy Future
October 2008 – August 2009
Features interview excerpts of me and other New Yorkers like Michael Bloomberg

COLUMBIA MAGAZINE
The Deep Sleep
Fall 2008
BYLINE: David J. Craig
http://www.columbia.edu/cu/alumni/Magazine/Fall2008/feature1.html
Cites my work on the perception and communication of climate change

Wallace Global Fund and Dyslexic Film Documentary by Adolfo Doring
"Blind Spot"
Official Selection of Woodstock Film Festival 2008 and London Independent Film Festival 2008
http://www.blindspotdoc.com/
Interview appearance on human misperceptions of risk

GREATER GOOD MAGAZINE
Are Human Beings Hard-Wired to Ignore the Threat of Catastrophic Climate Change?
November 17, 2008
BYLINE: Lisa Bennett
http://www.alternet.org/story/106982/
Interview about human perceptions of and reactions to climate risks

MORE MAGAZINE
"Mind over Money: Do You dare?"

March 2008, p. 60
BYLINE: Jolie Soloman
Interview about gender differences in risk taking

THE RECORD, Columbia University
"Do We Have Your Attention Now?"
January 24, 2008
BYLINE: Stacy Parker Aab
Describes my Center for Research on Environmental Decisions (CRED) and my research on human responses to climate change.

THE NEW YORK TIMES
"Stuck on Coal, and Stuck for Words in a High-Tech World"
December 4, 2007
BYLINE: Andrew C. Revkin
Mentions my research on risk perception and climate change
http://www.nytimes.com/2007/12/04/science/earth/04comm.html?_r=1&oref=slogin

FORTUNE MAGAZINE
"The greatest money manager of our time"
November 26, 2006
BYLINE: Andy Serwer
Article on Legg Mason money manager Bill Miller mentions me as one of eight "Bill's brainiacs," " deep thinkers that have influenced his understanding of how markets behave."
http://money.cnn.com/magazines/fortune/fortune_archive/2006/11/27/8394343/index.htm

COLUMBIA IDEAS@WORK
"Risk-Averse vs. Risk-Aware"
Fall 2005
Discusses my research on risk perception
http://www0.gsb.columbia.edu/null?&exclusive=filemgr.download&file_id=5910207&rtcontentdisposition=filename%3Drisk-management.pdf

THE ECONOMIST
"National Stereotypes: A fair bet, but wrong"
September 18, 2004
Discusses my research with colleague Christopher Hsee on cross-cultural differences in risk perception and risk preference in the USA and PRC
http://www.economist.com/business/displaystory.cfm?story_id=3209530

THE BOND BUYER ONLINE
"Staying in for the Long Haul: What Keeps Muni Professionals in the Business"
November 20, 2003
BYLINE: Nicholas Chesla
Cites me on a number of psychological reasons that may prevent people from switching to a different occupation
http://www.bondbuyer.com/article.html?id=20031120KMWKI3EC&from=home

PSYCHOLOGY TODAY
"Confucius Say: Risky Business"
March/April 1999
Discusses my research on cross-cultural differences in risk taking based on a comparative study of proverbs

http://psychologytoday.com/articles/pto-19990301-000006.html

AMERICAN PSYCHOLOGICAL ASSOCIATION MONITOR
"How do different cultures weigh the same decision? Psychologists are beginning to uncover differences in how Chinese and Americans make decisions"
May 1999
BYLINE: Beth Azar
Discusses my research on cross-cultural differences in risky decision making
http://www.apa.org/monitor/may99/weigh.html

CAPITAL IDEAS
"Researching Risk Preference"
Vol. 1, No. 3, Summer 1998
University of Chicago Graduate School of Business alumni magazine discusses my research with colleague Christopher Hsee on cross-cultural differences in risk perception and risk preference in the USA and PRC
http://www.chicagogsb.edu/capideas/sum98/hsee.htm

lnvited Presentations

1985
Harvard University, School of Public Health

1986
Columbia University, Department of Psychology; University of Alberta, Department of Psychology; Sloan Foundation Research Conference on Risk Measurement: Axiomatics, Experiments, and Applications, Lake Arrowhead, California.

1987
University of Chicago, Graduate School of Business; State University of California at Fullerton, Department of Psychology; Purdue University, Department of Psychology

1988
Zentrum fuer Umfragen und Meinungs-Analysen (ZUMA), Mannheim, W. Germany; University of Heidelberg, Department of Psychology; University of Illinois at Urbana-Champaign, Illinois Interdisciplinary Workshop on Decision Making, Keynote Address; University of Western Australia, Symposium on Implicit Memory, Invited Talk; University of Milan, Department of Information Sciences

1989
U.S. Department of Agriculture, Economic Research Service: Southern Regional Risk Project; University of California, Irvine, Department of Mathematical Behavioral Sciences

1990
Annual Meeting of the Society of Mathematical Psychology, Toronto, Canada, Invited Address; University of Maine, Orono, Department of Agricultural and Resource Economics

1991
Annual Meeting of the Society for Judgment and Decision Making, New Orleans, Louisiana, Symposium on Distributed Representation and Parallel Processing Models of Neural and Cognitive Processes; University of Illinois at Chicago, College of Medicine, Department of Medical Education; University of California, Berkeley, Department of Psychology; University of Iowa, Department of Management and Organizations; Joint U.S. -- U.S.S.R. Research Conference on Preference, Risk, and Social Choice: University of California, Irvine, Research Unit in Mathematical Social Sciences, and Central Economic and Mathematical Institute of the U.S.S.R.; University of Illinois at Urbana-Champaign, Finance and Management Workshop, Department of Agricultural Economics

1992
Stanford University, Department of Psychology; University of Haifa, Department of Psychology, Israel; Hebrew University, Department of Psychology and Center for Rationality, Jerusalem, Israel; University of Oklahoma, Department of Psychology, Norman, OK; International Congress of Psychology, Brussels, Belgium, Symposium on Decision Making in Clinical Contexts; Annual Meeting of the Society for Medical Decision Making, Portland, Oregon, Workshop on Frontiers of Utility Theory

1993
Stanford University, Graduate School of Business; Annual Meeting of the Society of Mathematical Psychology, Norman, Oklahoma, Symposium on Cognition and Decision Making; Wesleyan University, Department of Psychology; Washington University, Olin School of Management, Workshop in Organizational Behavior; University of California, Irvine, Department of Mathematical Behavioral Sciences; 31st Bayesian Research Conference, Savage Memorial Lecture, Los Angeles, California; University of Oregon, Department of

Psychology

1994
RAND Corporation, Santa Monica, CA; Koblenz School of Corporate Management, Otto-Beisheim Graduate School, Vallendar, Germany; European Association of Agricultural Economists 38th Annual Meeting, Invited Keynote Address, Copenhagen, Denmark; Harvard Business School, Symposium in Honor of Howard Raiffa; University of Colorado, Department of Psychology; Rutgers University, School of Business, Department of Organizational Behavior; University of Illinois at Chicago, College of Medicine, Department of Medical Education; University of Chicago, Cognitive Science Program, Department of Psychology; GSB/Kellogg Workshop on Decision Theory and Negotiation, Kellogg School of Management, Northwestern University; McMaster University, Department of Psychology, Hamilton, Canada; Midwestern Economics Association Annual Meeting, Symposium on Microeconomic Modeling, Uncertainty, and Risk, Chicago, Illinois; University of Mannheim, Department of Finance

1995
The Ohio State University, Department of Psychology; University of North Carolina, Department of Psychology; Ohio State University, Summer Institute in Political Psychology; Ohio State University, Behavioral Decision Theory Colloquium Series; Gesellschaft fuer unendliche Versuche (GUV), Ann Arbor, Michigan; INFORMS Fall Conference, New Orleans, Louisiana, Symposium on Behavioral Decision Theory; Symposium on Risk and Value; Annual Meeting of the Society for Judgment and Decision Making, Los Angeles, California, Symposium on Medical Decision Making; University of Mannheim, Department of Economics; Research Conference: Psychological Perspectives to Environmental and Ethical Issues in Management, Kellogg Environmental Research Center, Kellogg Graduate School of Management, Northwestern University

1996
Ohio University, Department of Psychology; University of Arizona, School of Business and Public Administration, Department of Management, Tucson, Arizona; Carnegie Mellon University, Department of Social and Decision Sciences; International Association for Conflict Management Annual Meeting, Ithaca, New York, Symposium on Environmental Conflicts: The Role of Perceptions; Ohio State University, Summer Institute in Political Psychology

1997
Swiss Federal Institute of Technology (ETH), Zurich, Switzerland, Department of Economics; University of Fribourg, Switzerland, Department of Statistics; Ohio State University, College of Pharmacy; Ohio State University, Department of Statistics; INFORMS Spring Conference, San Diego, California, Symposium on Behavioral Decision Theory; Symposium on Risk and Perception; Ohio State University, Summer Institute in Political Psychology; SPUDM 16, Leeds, United Kingdom, Invited Organizer of Workshop "Cross-cultural Approaches to Decision Making; University of Mannheim, Workshop in Finance and Banking, Germany; Max Planck Institute for Social Research, Munich, Germany; John D. and Catherine T. MacArthur Foundation Invited Research Conference on Risk, Chicago; Gesellschaft fuer unendliche Versuche (GUV), Ann Arbor, Michigan; INFORMS Fall Conference, Dallas, Texas, Symposium on Risk and Decision Making: Generic Models and Phenomena across Cultures; Research Conference: New Ideas in Decision Making; Dispute Resolution Research Center and Cognitive Science Program, Northwestern University

1998
INFORMS Spring Conference, Montreal, Canada, Invited Session on Implications of Recent Psychological Results for Decision Analysis Practice; University of Fribourg, Switzerland, Departments of Psychology and Statistics; Fourth Invitational Choice Symposium, Workshop on Modeling Bounded Rationality (B. Meunier and R. Selten, Chairs), Groupe HEC, Paris, France; Annual Meeting of the Society for Judgment and Decision Making, Dallas, Texas, Presidential Address; Ohio State University, School of Public Policy and Management;

New York University, Stern School of Business, Department of Management and Organizational Behavior

1999
American Economic Association Annual Meeting, New York City, Invited Talk in Session on Risk Aversion; New York University, Department of Psychology; Columbia University, Department of Psychology; Indiana University, Department of Psychology; University of Chicago, Graduate School of Business; University of Toulouse, Department of Psychology; Annual Meeting, Dutch Psychonomics Society, Netherlands, Invited Address

2000
Zentrum fuer interdisziplinaere Forschung (ZiF), Bielefeld, Germany; University of Pennsylvania, Wharton School, OPIM Workshop; International Forum on Climate Prediction, Agriculture, and Development, International Research Institute for Climate Prediction; National Academy Summer Study Session on Creation of a National Climate Service, Invited Talk, Woods Hole, MA; Annual Meeting, Economic Science Association, Tucson, AZ, Psychology-Economics Panel Discussion

2001
Association of American Geographers 97th Annual Meeting, Invited talk in Session on Seasonal Climate Forecasts: Linking Climate and Users, New York, NY; Subjective Probability, Utility, and Decision Making (SPUDM) Biannual Meeting, Invited Address, Amsterdam, Netherlands; New York University, Department of Economics

2002
International Speaker Series, University of Calgary, School of Management; University of Calgary, School of Management, Finance Workshop; Brown University, Department of Cognitive and Linguistic Sciences; Cornell University, Johnson Graduate School of Management, Department of Management and Organizations; Duke University, Fuqua School of Business, Department of Management; Wissenschaftskolleg zu Berlin, Fellows' Colloquium, Berlin, Germany; Columbia/Wharton Risk Roundtable, Arden House, Harriman, NY; Max Planck Institute, Bonn, Germany, Project Group: Common Goods: Law, Politics, and Economics; Max Planck Institute for Research into Economic Systems, Jena, Germany, Project Group: Strategic Interaction; Max Planck Institute for Human Development, Berlin, Germany, Center for Adaptive Behavior and Cognition; German Association of Experimental Economics, Annual Meeting, Wittenberg, Germany; Columbia Center for Economy, Environment, and Society, Conference on Climate Change/Variability and the Insurance Industry

2003
American Economic Association Annual Meeting, New York City, Invited Talk in Session on Risk Modeling; National Cancer Institute, Workshop on Conceptualizing and Measuring Perceived Risk; Columbia University, Earth Institute, Strategic Plan Lecture Retreat; Georgia Institute of Technology, School of Public Policy; Drexel University, Department of History and Politics, Speaker Series on Science, Technology and Society; Harvard University, Department of Economics, Behavioral and Experimental Economics Workshop; University of Miami, Rosenstiel School of Marine & Atmospheric Science, Climate Research Workshop;Carnegie Mellon University, Social and Decision Sciences; University of Pennsylvania, Wharton School of Management, Pension Research Council Symposium; American Psychiatric Association Annual Meeting, San Francisco, Invited Talk in Session on Application of Behavioral Decision Sciences in Clinical Psychiatry; Society for Mathematical Psychology Annual Meeting, Invited Talk in Amos Tversky Honorary Symposium, Ogden, Utah; 2nd Tilburg Symposium on Psychology and Economics: Games and Decisions, Keynote Address, Tilburg University, Netherlands; University of Toronto, Rotman School of Business, Organizational Behavior Workshop; Center for Interuniversity Research and Analysis on Organizations (CIRANO), Presentation, Montreal, Canada; Washington University, Olin School of Business, Organizational Behavior Workshop; New York University, Department of Psychology, Cognition and Perception Workshop; Chinese University of Hong Kong, Marketing Workshop, Hong Kong, China

2004
Heidelberg Meetings on Judgment and Decision Processes, Intuition in Judgment and Decision Making, Invited Talk, Heidelberg, Germany; Geophysical Fluid Dynamics Lab, NOAA, Climate Impacts Meeting, Princeton, NJ; International Research Institute for Climate Prediction (IRI), Lamont-Doherty, Columbia University, Palisades, NY; University of Fribourg, Switzerland, Department of Psychology; Dahlem Workshop on "Heuristics and the Law", Deutsche Forschungsgemeinschaft and Stifterverband fuer die Deutsche Wissenschaft, Berlin, Germany; International Association for Chinese Management Research, Inaugural Conference, Invited Talk, Beijing, China; University of Mannheim, Germany, Workshop in Finance and Banking; NeuroEconomics 2004 Meeting, Invited Talk, Kiawah Island, SC; Princeton University, Woodrow Wilson School, Workshop on Global Warming: The Psychology of Long Term Risk

2005
London School of Economics, Workshop on Knowledge, Information and Environmental Decisions, Invited Talk; Subjective Probability, Utility, and Decision Making (SPUDM) Biannual Meeting, Symposium on Small Economic Decisions, Stockholm, Sweden; Columbia University, Department of Psychology, Departmental Colloquium; Dartmouth College, Tuck School of Business, Workshop on How to Increase the Effectiveness of Financial Education: Lessons from Economics and Psychology, Keynote Address; Asociación Argentina de Consorcios Regionales de Experimentación Agrícola (AACREA) Annual Meeting, Invited Address, Buenos Aires, Argentina; New York University, Department of Psychology; Society for Personality and Social Psychology Annual Meeting, Cultural Psychology Pre-Conference, Invited Talk, New Orleans, LA; Center for Experimental Social Science, Workshop on Neuroeconomics, New York University; Darden Graduate School of Business, University of Virginia, Visitor and Featured Speaker, Behavioral Economics Seminar

2006
Department of Defense (DOD), MURI Workshop on Decision Modeling and Behavior in Uncertain and Complex Environments, Invited Presentation, University of Arizona; University of Chicago, Graduate School of Business, Center for Decision Research Workshop; University of Haifa, Department of Psychology, Israel; Hebrew University, Center for Rationality, Jerusalem, Israel; University College London, London Judgement and Decision Making Seminar; London Business School, Joint Marketing and Management Workshop; Universitat Pompeu Fabre, Department of Economics and Business, Workshop Talk; Research Conference on Conversational Pragmatics in Psychology, Laboratoire Dynamiques Sociocognitives et Vie Politique, Invited Presentation, University of Toulouse; Max Planck Institute, Bonn, Germany, Project Group: Common Goods: Law, Politics, and Economics; World Meteorological Organization (WMO) International Conference: Living with Climate Variability and Change: Understanding the Uncertainties and Managing the Risks, Espoo, Finland, Invited Address; National Institute on Aging, Behavioral and Social Research Program, Decision Making and Aging Workshop, Invited Presentation, Bethesda, MD; Thought Leader Forum, Legg Mason Capital Management, Invited Presentation, Baltimore MD; Columbia University Medical School, Cognitive Neuroscience Seminar; Lamont Doherty Earth Observatory, Columbia University, "Science of Diversity" Lecture Series, Palisades NY; National Institute on Aging Research Conference, Mind the Gap! Behavioral Perspectives on the Medicare Part D Market for Prescription Drug Insurance, Invited Talk, Berkeley CA

2007
National Intelligence Agency, Research Conference Improving Analytic Practices: Lessons from Outside the Intelligence Community, Invited Presentation on Promising Research with Potential Application to Analytic Practices, Chantilly, VA; Utah Winter Operations Management Conference, Invited Talk on Behavioral Decision Theory; Society for Personality and Social Psychology Annual Meeting, Judgment and Decision Making Pre-Conference, Invited Presentation, Memphis, TN; INSEAD, Department of Decision Sciences; National Science Foundation and Michigan State University, International Symposium on Decision Making under Climate Change Uncertainty, Invited Address, East Lansing MI; Eastern Psychological Association Annual Meeting, Invited Address in Presidential Symposium on Behavioral Economics in Three Flavors,

Philadelphia, PA; MIT, Atmospheric Science Seminar; Ernst Strüngmann Forum "Better than conscious," Invited Presentation and Participation, Frankfurt, Germany; University of Zurich, Swiss Banking Institute, Invited Presentation; Subjective Probability, Utility, and Decision Making (SPUDM) Biannual Meeting, Invited Panelist, "Challenges to Descriptive Models of Choice," Warsaw, Poland; National Institute on Aging, Workshop on Refining Economic Phenotypes for Genetic Analysis, Invited Presentation, Bethesda, MD; Duke University, NSF Statistical and Applied Mathematical Sciences Institute (SAMSI) Workshop
"Risk: Perceptions, Policy, and Practice," Keynote Address; UCLA, Anderson School of Business, Strategy Workshop; Society for Risk Analysis Annual Meeting, Keynote Address, San Antonio, TX

2008
New York University, Neuroeconomics Symposium; Russell Sage Foundation, Invited Talk, New York City, NY; University of Pennsylvania, Wharton School, Marketing Workshop; Harvard University, Behavioral and Experimental Economics Workshop; Behavioral Finance Forum, Invited Presentation, Miami Beach, FL; Copenhagen Business School, Conference on Neuroeconomics, Invited Talk; American Psychological Society Annual Meeting, Pre-Conference Workshop on "Opportunities for Advancing Behavioral and Social Research on Aging: An Introduction for Behavioral Scientists," Invited Panelist; International Conference on Thinking, Invited Symposium Talk, Venice, Italy; New York State Psychiatric Institute, Division of Clinical Therapeutics, Invited Presentation; Harvard University, Kennedy School of Government, Management and Leadership Workshop; Annual Meeting of the Society for Judgment and Decision Making, Chicago, Illinois. Invited Discussant in Panel on Medical Decision Making

2009
National Center for Atmospheric Research (NCAR), Boulder, CO; Stanford University, Department of Psychology, Departmental Colloquium; Westminster Business School and London Business School, Joint Workshop in Economics of Behavior and Decision Making; Columbia Business School Alumni Association, London, UK; Yale School of Management, Marketing Seminar; Dondena Center for Research in Social Dynamics, Department of Decision Sciences, Bocconi University, Milan, Italy; University of Basel, Psychology, Departmental Colloquium; Copenhagen Business School, Decision NeuroScience Research Group Workshop; Association for Psychological Science (APS) Annual Meeting, Symposium on "Risk Perception and Risk Taking," San Francisco CA; Princeton University, Workshop on Science, Democracy, and Global Environmental Regulation; Clinton Foundation C40 Cities Climate Leadership Group, Connecting Delta Cities International Workshop; Federation of Associations in Behavioral & Brain Sciences (FABBS), Congressional Briefing, Showcasing Research from a NSTC Report: Social Behavioral and Economic Research in the Federal Context; Subjective Probability, Utility, and Decision Making (SPUDM) Biannual Meeting, Invited Workshop Presentation, Rovereto, Italy; H209 Forum: Water Challenges for Coastal Cities – From the Dutch Delta to New York Harbor, Invited Panelist in Session on Creating Greener Brains: Driving the Environmental Message Home, Jersey City, NJ; National Institute on Aging/National Institute of Health (NIA/NIH), Neuroeconomics of Aging Workshop, Evanston, IL; National Institute on Aging/National Institute on Drug Abuse (NIA/NIDA), Conference on Aging, Motivation, and Addiction, Washington, DC; Carnegie Mellon University, Department of Social and Decision Sciences, Colloquium; City University of New York, Graduate Center, Applied Economics Seminar; Duke University, Center for Neuroeconomic Studies Colloquium; Duke University, Social Science Research Institute, Workshop on Social Interactions; Behavior, Energy, and Climate Change (BECC) Conference, Washington, DC; Earth Institute, Columbia University, Sustainable Development Seminar Series: Focus on Climate; Columbia Business School, Panel on Environmental Policy and Climate Change; University of Basel, Department of Psychology, Honorary Doctorate Invited Public Talk, Basel, Switzerland,; National Academy of Science, Workshop on Addressing the Challenges of Climate Change Through the Behavioral and Social Sciences, Washington, DC; Earth Institute, Columbia University, Faculty Retreat, Invited Presentation on Social System Challenges to Sustainable Development.

2010
Resources for the Future (RFF), Washington, DC; Center for Environmental Research and Conservation

(CERC), Columbia University, New York, NY; Mount Sinai School of Medicine, Workshop on Global Environmental Change, New York, NY; School of International and Public Affairs, Columbia University; University of British Columbia, Peter Wall Institute for Advanced Studies, Invited Talk in Virtual Colloquium "Changing Perceptions of Climate Change through Community Action," Vancouver, BC; Pacific Institute for Climate Solutions, Workshop on Social Mobilization for Climate Solutions, Vancouver, BC; Arctic Research Consortium of the U.S. (ARCUS), State of the Arctic Conference, Invited Address, Miami, FL; Colorado State University, Rocky Mountain Series on Social Science and Global Change, Keynote Address (per interactive video), Fort Collins, CO; Garrison Institute, Climate, Mind and Behavior Project, Executive Luncheon Keynote Address, Century Association, New York NY; Prince of Wales's Business & the Environment Programme, University of Cambridge Programme for Sustainable Leadership, New York Senior Executive Seminar, Invited Address, Glen Cove Mansion, Long Island, NY; Eight Triennial Invitational Choice Symposium, Workshop on Decision Architecture, Invited participation and presentation, Key Largo FL; Deutsche Forschungsgemeinschaft, Workshop on Computations, Decisions, and Movement, Invited Talk, Rauischholzhausen Castle, Germany; Association for Psychological Science (APS) Annual Meeting, Invited Talk, Boston MA; National Oceanic and Atmospheric Administration (NOAA) and US Geological Survey (USGS), 2010 California Extreme Precipitation Symposium, Invited Presentation (prerecorded video), Sacramento CA; Columbia University, Applied Statistics Center, Invited Presentation, Conference on Risk Perception, New York, NY; National Institute on Aging, Division of Behavioral and Social Research, Meeting on Economic Phenotypes. Invited Presentation. Kellogg School of Management, Evanston, IL; Columbia Climate Center at the Earth Institute, Columbia University and the Consulate General of Denmark in New York, Invited Panel Presentation at Climate Symposium: Revitalizing the Debate, New Yoirk NY; University of Alaska, Fairbanks, Geophysical Institute & International Arctic Research Center, Invited Talk; University of Alaska, Anchorage, Institute of Social and Economic Research, Invited Talk; American Academy of Arts & Science. Invited presentation in workshop The Alternative Energy Future: A Social Science Agenda, Cambridge, MA; Society for Judgment and Decision Making, Annual Meeting, Preconference Tribute Panel to Sarah Lichtenstein, Invited Presentation, St. Louis, MO; Carnegie Mellon University, Center for Formal Epistemology, Workshop on Foundational Issues in Bounded Rationality, Invited Talk,, Pitrtsburgh, PA; University of Pennsylvania, Wharton School, Penn Symposium on Fostering and Financing Long-Term Investments in Prevention and Protection, Philadelphia, PA; Columbia Business School, Faculty Showcase Research Presentation.

2011

University of Missouri, Invited Address at Interdisciplinary Symposium on Realistic Decision Making, Columbia, MO; Max Planck Gesellschaft, Wissenschaftlicher Rat, Munich, Germany; Garrison Institute, Climate Mind and Behavior Symposium, Invited Talk, Garrison NY; University of Texas at Austin, Schools of Engineering and Law, Invited Talk at Research Conference on Smart Grid Dynamics; University of Pennsylvania, Department of Psychology, Departmental Colloquium; Northwestern University, Kellogg School of Business, Management Colloquium; Martin E. Segal Theatre Center, Graduate Center, City University of New York, Panel Discussion Member for Earth Day: The Civilians' The Great Immensity, New York, NY; Garrison Institute, Climate Cities and Behavior Symposium, Invited Address, Garrison NY; Technical University Munich, Institute for Advanced Studies, Invited Talk; NeuroPsychoEconomics Conference, Keynote Address, Munich, Germany; Intergovernmental Panel on Climate Change (IPCC), Invited Address, WGII/WGIII Expert Meeting on Economic Analysis, Costing Methods, and Ethics; Lima, Peru; Subjective Probability, Utility, and Decision Making (SPUDM) Biannual Meeting, Invited Workshop Presentation, Kingston, UK; World Bank, Sustainable Development Leadership Program, Invited Talk, Washington DC; Mind & Life Institute Conference on "Ecology, Ethics and Interdependence. Invited Talk and Participation, Dalai Lama Private Residence, Dharamsala, India; Society for Judgment and Decision Making (SJDM) Annual Meeting, Seattle WA; Falling Walls Conference, International Conference on Future Breakthroughs in Science and Society, Invited Talk, Berlin, Germany; Center for Economics and Neuroscience, University of Bonn, Keynote Address for Center Inauguration, Bonn, Germany; Decision Center for a Desert City, Annual Water/Climate Briefing, Keynote Address, Arizona State University, Tempe, AZ.

2012

World Bank, Green Growth Platform Launch Conference; University of Maryland, College of Behavioral and Social Sciences and Smith School of Business, Judgment and Decision Making Symposium, Keynote Address; University of Mannheim, Department of Psychology, Invited Workshop, Mannheim, Germany; Columbia Business School, No Free Lunch Seminar Series, Program for Financial Studies, Invited Talk; Barnard College, Interdisciplinary Workshop on Environmental Learning, Ignorance, and Fear, Invited Commentary; University of Indiana, Cognitive Science and School of Environmental and Public Affairs, Invited Talk, Bloomington, IN; World Bank, Sustainable Development Network, Invited Talk, Washington DC; U.S. Congressional briefing on *Energy Choices: Moving People Toward Change*, Invited Presentation, Washington, DC; Technical University Munich, Faculty of Management, Invited Talk, Munich, Germany; Bertelsmann AG, Seminar on Psychology and Economics, Keynote Address, Berlin, Germany; Federal Reserve Bank of Boston, Invited Talk at conference on Incorporating Episodes of Panic into Macroeconomic Models, Boston, MA; Potsdam Institute for Climate Research Impact (PIK), Invited Presentations at Global Sustainability Summer School, Potsdam, Germany; American Psychological Association, Annual Meeting, Keynote Address, Orlando, FL; International Institute for Applied Systems Analysis (IIASA), Invited Presentation to Young Scientist Program, Laxenburg, Austria; Duke University, Law School and Nicholas School of the Environment, Invited Presentation at Conference on Recalibrating Risk: How Regulatory Institutions Respond to Shifts in Risk Perceptions, Durham, NC; Santa Fe Institute and Morgan Stanley joint conference on Risk: The Human Factor, Invited Talk, New York City; New York University Educating for Sustainability Speaker Series, Invited Faculty Research Talk and Public Lecture, New York, NY; Princeton University, Princeton Institute for International and Regional Studies, Communicating Uncertainty Workshop, Invited Presentation; Princeton University, Cognitive Lunch Series, Department of Psychology, Invited Talk.

2013

University of New South Wales, Climate Change Research Center and Department of Psychology, Invited Talk, Sydney, Australia, February 14, 2013.

UCLA, Anderson School of Management. Behavioral Decision Making Group Colloquium, March 8, 2013.

Caltech, Humanities and Social Science Colloquium, March 12, 2013.

UC Riverside, Business School, Dean's Speaker Series, March 14, 2013.

Fordham University, Department of Psychology, Research Colloquium, New York, NY, April 10, 2013.

Princeton University, Workshop on the Ethics of Risk and Climate Change, Invited Discussant, April 12, 2013

American Psychological Association, Earth Day Facebook Chat, Behavioral Expert on Psychology and Environmental Protection, https://www.facebook.com/AmericanPsychologicalAssociation /posts/10151546693312579, April 22, 2013.

Princeton University, Princeton Institute for International and Regional Studies, Communicating Uncertainty Workshop, Invited Presentation, April 24, 2013.

White House Workshop on Psychological Science and Behavioral Economics in the Service of Public Policy, sponsored by President's Office of Science and Technology Policy (OSTP), Council of Economic Advisors (CEA), NIA, and APS, Washington DC, May 22, 2013.

Garrison Institute, Climate Mind Behavior Symposium, Invited Talk, Garrison, NY, June 11, 2013.

Digital Life Design (DLD) Conference, Invited Address, Munich, Germany, July 15, 2013.

University of Duisburg/Essen, Centre for Global Cooperation Research, Invited Talk in Masterclass Retreat 2013, Towards a better understanding of complexity and scale and their relevance for global cooperation, Duisburg, Germany, August 31, 2013.

Harvard University, Radcliffe Institute for Advanced Study, Public Policy and the Brain Workshop, Invited Speaker, Cambridge, MA, September 20, 2013.

University of Gothenburg, Centre of Finance, Invited Talk, Gothenburg, Sweden, September 25, 2013.

University of Gothenburg, Dept. of Psychology, Invited Talk, Gothenburg, Sweden, September 26, 2013.

Global Economic Symposium (GES), Beyond Individualism towards Social Responsibility, Invited Panelist, Kiel, Germany, October 1, 2013.

Duke University Energy Initiative and the Harvard Environmental Economics Program, Workshop on Energy Efficiency Paradox, Invited Presentation, Harvard U., Kennedy School of Government, October 24, 2013.

1st Multidisciplinary Conference on Reinforcement Learning and Decision Making, Invited Talk, Princeton University, October 25, 2013.

Rutgers University, Center for Cognitive Science, New Brunswik, NJ, November 5, 2013.

Columbia Business School Sanford Bernstein Center Conference "The Big Big Question: Can MY Company, University or Organization Change?", Invited Presentation, Italian Academy, New York, NY, November 8, 2013.

Café Science, Columbia University, Alumni Center, New York, December 9, 2013.

Council of Scientific Society Presidents, C.H.E.S.S. Club, Invited Presentation, Asilomar, CA, December 14.

2014

National Institute on the Teaching of Psychology (NITOP), 36th Annual Conference, Invited Address, St. Petersburg, FL, January 3, 2014.

Department of Defense, Invited Presentation to Navy N45 on Behavioral Approaches to Energy Conservation. Pentagon, Washington DC, March 4, 2014.

SUSSTAIN, Invited Talk at Behavioral World Meets the Navy World, Woodrow Wilson Center, Washington, DC, April 1, 2014

NMO IIASA, Invited presentation on Risk Research and Issues in the United States. National Academy of Sciences, Washington DC, March 28, 2014

We need to talk! Climate Change Communication Symposium organized by Danish Monday Morning Weekly Magazine, Copenhagen, Denmark, April 7, 2014.

The New School for Social Research, Climate Change Demands We Change. Why Don't We? Invited Conference Talk, New York City, NY, April 24, 2014.

United Nations, Psychology at the UN Day, Invited Talk, April 24, 2014.

University of Tilburg, Joint Psychology and Marketing Seminar Talk, Tilburg, Netherlands, May 28, 2014.

Council of Scientific Society Presidents, CHESSClub, Invited Presentation, Cambridge, MA, May 30, 2014.

NYSERDA/AAAS workshop on Applying Behavioral Strategies to Energy Decisions and Behaviors, Invited Panelist, Pace Energy and Climate Center, Pace Law School, White Plains, NY, June 18/19, 2014.

Carnegie Mellon University, Center for Environmental Decision Making Seminar, Invited Talk, October 14, 2014.

World Wildlife Fund, Science for Nature Seminar, Washington DC, October 16, 2014.

Outside Activities 2008-2014

Columbia Business School requires faculty members to disclose any activities that might present a real or apparent conflict of interest. The list below complies with this requirement.

Consulting

Occasional behavioral-science based consulting assignments for the The Greatest Good, 2012 – present.
Commissioned Paper on Behavioral Economics for Green Growth Knowledge Platform, World Bank, 2011-12.
Research directions and research design for National Intelligence Council, 2006 -2010.

Paid Speaking Engagements

Prince of Wales's Business & the Environment Programme, University of Cambridge Programme for Sustainable Leadership, New York Senior Executive Seminar, Invited Talk, 2010.

Unpaid Speaking Engagements

Clinton Foundation C40 Cities Climate Leadership Group, Connecting Delta Cities Workshop, 2009.
Federation of Associations in Behavioral & Brain Sciences (FABBS), Congressional Briefing, Showcasing Research from a NSTC Report: Social Behavioral and Economic Research in the Federal Context, 2009.
H209 Forum: Water Challenges for Coastal Cities – From the Dutch Delta to New York Harbor, Session on Creating Greener Brains: Driving the Environmental Message Home, Jersey City, NJ, 2009.
Resources for the Future (RFF), Workshop on Climate Change and Extreme Events: Managing the Tail Risks, Invited Presentation, Washington, DC, 2010.
Pacific Institute for Climate Solutions, Workshop on Social Mobilization, Vancouver, BC, 2010.
Garrison Institute, Climate, Mind and Behavior Project, Executive Luncheon Keynote Address, Century Association, New York NY, 2010.
National Oceanic and Atmospheric Administration (NOAA) and US Geological Survey (USGS), 2010 California Extreme Precipitation Symposium, Invited Presentation, Sacramento CA, J2010.
Garrison Institute, Climate Mind and Behavior Symposium, Invited Talk, Garrison NY, March 2, 2011.
Garrison Institute, Climate Cities and Behavior Symposium, Invited Address, Garrison NY, April 27, 2011.
World Bank, Green Growth Platform Launch Conference, Mexico City, January 13, 2012.

Unpaid Service

Faculty Advisor, ClimateCoLab, MIT, 2012 – 2014.
Lead Author, Intergovernmental Panel on Climate Change (IPCC), 5th Assessment Report, Working Group III, 2011 – 2014.
Member, Energy Expert Network (DEENET), Decision Strategies International (DSI), London, UK, 2010 – present.
Advisory Board Member, Harmony Institute, 2009 – present.
Member, Global Agenda Council on Decision-making and Incentives Systems, World Economic Forum, 2009 - 2010
Executive Committee Member, Columbia Earth Institute, 2009 – present.
Board Member, Federation of Associations in Behavioral & Brain Sciences (FABBS) Foundation, 2009 - 2011.
Member, American Psychological Association (APA) Task Force on Interface between Psychology and Global Climate Change, 2008 - 2009
Board of Directors, Association for Psychological Science (APS) 2007 - 2010
Steering Committee Member, Columbia Climate Center (C3), 2007 – present.
Advisory Board Member (2004 – 2009) and President (2007 - 2008), Society for Neuroeconomics,

CURRICULUM VITAE

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Education

1980 - 1984	Harvard University: M.A., Ph.D. (Psychology: Behavior and Decision Analysis)
1976 - 1980	York University: B.A., Summa cum Laude (Psychology)

Professional Positions

2013	Linde Visiting Fellow, Ronald and Maxine Linde Institute for Economic and Management Sciences, California Institute of Technology
2012 - 2014	Visiting Research Collaborator, Princeton Institute for International and Regional Studies, Princeton University
2009 -	Earth Institute Professor, Columbia University
2009	Visiting Professor, Copenhagen Business School
2007 - 2008	Fellow, Russell Sage Foundation
2006	Visiting Professor, London Business School
2004 - 2005	Chair, Management Division, Graduate School of Business, Columbia University
2003 -	Jerome A. Chazen Professor of International Business, Columbia Business School
2004	Guest Professor, Department of Quantitative Economic Research, University of Fribourg, Switzerland
2002	Fellow, Wissenschaftskolleg (Institute for Advanced Study), Berlin, Germany
1999 -	Professor of Management, Graduate School of Business, and Professor of Psychology, Department of Psychology, Columbia University
1995 - 1999	Professor, Department of Psychology and Department of Management & Human Resources, Ohio State University
1994	Professor of Organizational Behavior and Leadership, Guest Chair, Otto Beisheim Graduate School of Corporate Management (WHU), Koblenz, Germany

1992 - 1993	Fellow, Center for Advanced Studies in the Behavioral Sciences, Stanford, CA
1988 - 1995	Assistant and Associate Professor of Behavioral Science, Center for Decision Research, Graduate School of Business, University of Chicago
1985 - 1988	Assistant Professor, Department of Psychology, University of Illinois at Urbana-Champaign
1984 - 1985	Natural Science and Engineering Research Council Post-Doctoral Fellow, Department of Psychology, University of Toronto

Research Interests

Determinants of Risky Decision Making; Cultural, Age, Gender, and Species Differences in Decision Making under Risk and Uncertainty; Measurement of Risk Perception and Risk Attitude; Role of Memory and other Cognitive Processes in Preference Construction; Financial Decision Making; Environmental Decision Making; Decision Neuroscience; Neuroeconomics

Professional Organizations

American Psychological Association (Fellow), American Psychological Society (Fellow), Society for Judgment and Decision Making (Past President), Society for Neuroeconomics (Past President), Society for Mathematical Psychology (Past President), Society for Risk Analysis, Institute for Operations Research and the Management Sciences, Decision Analysis Society (Past Council Member)

Selected Professional Activities

2014 -	US National Academy of Sciences (NAS) National Member Organization (NMO) for the International Institute for Applied Systems Analysis (IIASA) Member
2013 -	Steering Committee Member, International Panel on Social Progress, Foundation Maison des Sciences de l'Homme
2013 -	Columbia University Tenure Review Advisory Committee (TRAC) Member
2012	Co-Chair, Advisory Committee, Green Growth Knowledge Platform (GGKP) of OECD, UNEP, and World Bank
2012 -	Mind Brain Behavior Initiative Faculty Advisory Committee Member, Columbia University
2012 -	Co-Director, Network for Utilization of Social Science Research on Sustainability and Energy (NUSSRoSE)
2012 -	ClimateCoLab Advisor, MIT
2011 -	Provost Faculty Advisory Committee Member, Columbia University
2011	Institute for Advanced Study Visiting Fellow, Technical University Munich, Germany
2011 - 2014	Lead Author, Intergovernmental Panel on Climate Change (IPCC), 5th Assessment Report, Working Group III

2010- 2011	Contributing Author, IPCC Special Report, Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation
2010 -	Decision Strategies International (DSI), Energy Expert Network (DEENET), London, UK
2009 -	Advisory Board Member, Harmony Institute
2009 - 2010	Member, Global Agenda Council on Decision-making and Incentives Systems, World Economic Forum
2009 -	Executive Committee Member, Earth Institute, Columbia University
2009 - 2011	Board Member, Federation of Associations in Behavioral & Brain Sciences (FABBS) Foundation
2008 - 2009	Member, American Psychological Association (APA) Task Force on Interface between Psychology and Global Climate Change
2007 - 2008	President, Society for Neuroeconomics
2007 - 2011	Board of Directors, Association for Psychological Science (APS)
2007 -	Steering Committee Member, Columbia Climate Center (C3)
2007	Carnegie Mellon President's Advisory Board Member for the Department of Social and Decision Sciences
2006 - 2010	Associate, National Intelligence Council
2005 - 2006	Panel Member, Estimating and Communicating Uncertainty in Weather and Climate, National Research Council, National Academy of Sciences
2004 - 2009	Advisory Board Member, Society for Neuroeconomics
2004 -	Co-Director, Center for Research on Environmental Decisions (CRED), Columbia University
2004 - 2007	Chair, Working Group IV (Public Attitudes, Ethical Issues, and Decision Making) for Global Roundtable on Climate Change, Columbia University
2003 - 2006	Member, Academic Advisory Committee, Ethical Globalization Initiative (EGI), Aspen Institute, International Council on Human Rights Policy, and Columbia University
2002 - 2004	Academic Director, Jerome A. Chazen Institute of International Business, Graduate School of Business, Columbia University
2001 - 2003	Director of Graduate Studies, Department of Psychology, Columbia University
2000 -	Co-Director, Center for Decision Sciences, Columbia University

2000 - 2003	Co-Chair, International Scientific and Technical Advisory Committee (ISTAC) for the International Research Institute for Climate Prediction (IRI)
2000 - 2009	Member, Academic Steering Committee, Earth Institute, Columbia University
2000 - 2001	President, Society for Mathematical Psychology
1997 - 2003	Member, Committee on the Human Dimensions of Global Change, National Academy of Sciences
1997 - 2000	Committee Member, Forum on Research Management, Federation of Behavioral, Psychological, and Cognitive Sciences
1997 - 1998	President, Society for Judgment and Decision Making
1997 - 1999	Panel Member, Human Dimensions of Seasonal-to-Interannual Climate Variability, National Research Council, National Academy of Sciences
1997 - 1999	Panel Member, Network on Economic Environments and the Evolution of Individual Preferences and Social Norms (Risk Sub-Network), MacArthur Foundation
1997	Panel Member, Joint National Science Foundation and American Psychological Society, Capital Initiative Workshop
1996 - 1998	Review Panel Member, National Science Foundation: Decision, Risk, and Management Science Program

Editorships and Editorial Advisory Panels

Editor, Chazen Web Journal of International Business (2002 - 2004); Co-Editor, Risk Decision & Policy (1999-2002); Associate Editor, Management Science (2006 - 2009; 2012 - present); Associate Editor, Organizational Behavior and Human Decision Processes (1998 - 2001), Associate Editor, Weather, Climate, and Society (2008 – present); Social Science Editorial Advisory Panel (EAP) Member, Nature Climate Change (2013 – present).

Editorial Boards

American Journal of Psychology (1986 - present); Betriebswirtschaft (2007 – present); Judgment and Decision Making (2007 – present); Journal of Experimental Psychology: Learning, Memory, and Cognition (1994 – 1997; 2002 - 2010); Journal of Experimental Psychology: General (2007 - present); Journal of Mathematical Psychology (1995 - 2003); Journal of Risk and Uncertainty (2010 – present); Management and Organization Review (2005- present); Organizational Behavior and Human Decision Processes (1993 – 1998; 2002 - 2004); Psychological Inquiry (2002 – present); Psychological Review (2001 – present); Psychological Science (2006 – present); Risk Decision & Policy (1998 - 2002)

Ad-Hoc Reviewing

Journals: Academy of Management Journal, Academy of Management Review, Acta Psychologica, American Economic Review, American Journal of Political Science, American Psychologist, Basic and Applied Social Psychology Journal, Brain and Cognition, Climate Policy, Climatic Change, Cognition, Cognitive Processing, Cognitive Psychology, Cognitive Science, Decision Analysis, Economic Psychology, Ecological Economics,

European Journal of Neuroscience, Experimental Economics, Geneva Risk and Insurance Review, Global Environmental Change, Human Ecology Review, IEEE Transactions on Systems, Man, and Cybernetics, International Journal of Intelligent Systems in Accounting, Finance, and Management, International Journal of Risk Assessment and Management, Journal of Behavioral Decision Making, Journal of Business, Journal of Clinical and Experimental Neuropsychology, Journal of Economic Behavior and Organization, Journal of Experimental Psychology: Human Perception and Performance, Journal of Experimental Social Psychology, Journal of the International Neuropsychological Society, Journal of Neuroscience, Journal of Personality and Social Psychology, Journal of Risk and Uncertainty, Journal of Risk and Insurance, Management Science, Manufacturing and Service Operations Management, Marketing Letters, Medical Decision Making, Memory, Memory and Cognition, Nature Neuroscience, Nature Climate Change, Neuron, Neuroscience Letters, Personality and Social Psychology Bulletin, Perspectives on Psychological Science, PLoS Computational Biology, Proceedings of the National Academy of Sciences, Psychological Bulletin, Psychological Review, Psychological Science, Psychonomic Bulletin and Review, Review of Environmental Economics and Policy, Risk Analysis, Social Science & Medicine, Sociological Quarterly, Theory and Decision, Trends in Cognitive Science, Water Resources Research.

Grant Proposals: **National Science Foundation (NSF)**: Decision, Risk, and Management Science; Economics; Cognitive Neuroscience; Social Psychology; Human Cognition and Perception; Methodology, Measurement, and Statistics; Time Sharing Experiments for the Social Sciences; **National Institute of Mental Health (NIMH)**; **National Institute of Aging (NIA**); US Department of Commerce: National Oceanic and Atmospheric Administration (NOAA); Israeli Science Foundation; Australian Research Council Endeavour Awards; Hong Kong Research Grants Council; European Science Foundation; Swiss National Science Foundation; Max Planck Society

Other Reviewing: Nobel Prize in Economic Science; Center for Advanced Studies in the Behavioral Sciences (CASBS); MacArthur Foundation

Honors and Awards

2012	Elected Member of German National Academy of Sciences (Leopoldina)
2012	Honorary Professorship, Economic Science, Technical University Munich, Germany
2011	Fellow, Society for Risk Analysis
2010	Chazen Senior Scholar, Graduate School of Business, Columbia University
2009	Honorary Doctorate in Psychology, University of Basel, Switzerland
2003	Academy of Management, Organizational Behavior Division, Best Paper Award
2000	Chazen International Research Prize, Graduate School of Business, Columbia University
1999	INFORMS Decision Analysis Society Publication Award
1998	Fellow, Association for Psychological Science
1996	Fellow, Division 3 (Experimental Psychology, American Psychological Association
1994	Outstanding Young Investigator Award, Society for Medical Decision Making

1990	James S. Kemper Foundation Research Scholar, Graduate School of Business, University of Chicago
1988	Young Psychologist Award, American Psychological Association, XXIV International Congress, Sydney, Australia
1986	University of Illinois Instructional Award: "List of Faculty Rated Excellent"
1985	Natural Science and Engineering Research Council of Canada: Postdoctoral Fellowship
1980 - 1984	Natural Science and Engineering Research Council of Canada: Postgraduate Scholarship
1980	Vanier Award for Academic Excellence, York University

Grants

Choice architecture to guide infrastructure development decisions that impact energy, National Science Foundation, INSPIRE, $2,496,000, 9/14-8/17, Decision Pending.

RISk and uncertainty in developing and Implementing Climate change pOlicies (RISICO), European Research Council (ERC), subcontract to Columbia University (main contract, PI Valentina Bossetti, Bocconi University, $1,400,000), $100,402, 7/14-6/19.

Rebound vs. Gateway Effects of Pro-Environmental Behavior, National Science Foundation, SES-1325660, $498,000, 7/13 – 6/16.

Doctoral Dissertation Research (Lisa Zaval) in DRMS: Affective Forecasting across the Lifespan, National Science Foundation: $12,880, 9/13-8/14.

Decisions from Experience and the Role of Feedback in Environmental Decisions, National Science Foundation, SES-1227462, $450,000, 9/12-8/14.

Cognitive and Emotional Sources of Wise Decision Making Across the Lifespan, National Institute of Aging, R01, $320,000, 10/12-9/14.

Network for Utilization of Social Science Research on Sustainability and Energy (NUSSRoSE), National Science Foundation: Research Coordination Networks (RCN), DBI-049179401, $318,000, 1/12-12/14.

Testing the capital constraint: Designing policies to promote small farmer organic fertilizer use in sub-Saharan Africa. Cross-Cutting Initiatives, Earth Institute, Columbia University. $30,000, 6/11-5/12.

Understanding and Improving Environmental Decisions, National Science Foundation: Decision Making Under Uncertainty Center Competition, SES-0951516, $6,500,000, 10/10-9/15.

Doctoral Dissertation Research (David Hardisty) in DRMS: Discounting Future Losses, National Science Foundation: Decision Making Under Uncertainty Center Competition, SES-1024599, $22,310, 9/10-7/11.

Development of Dynamic Risky Decision Making: Behavioral Phenomena and Neural Underpinnings. National Science Foundation, SES-0922743. $277,870.00, 10/09-9/13.

Temporal Discounting of Social Goals, National Science Foundation, SES-0820496, $668,503, 9/08-8/12.

Individual and Group Decision Making under Climate Uncertainty, National Science Foundation, SES-0345840S, $500,000, 10/08-9/13.

Environmental Decision Making by Individuals and Groups. National Science Foundation, SES-0720452, $494,390. 10/07-9/10.

Decision Making Over the Life Span: How Memory Affects Preferences. National Institute of Aging, R01AG027931-01A2, $1,602,680, 09/07-08/12.

Affective and Deliberative Risky Decision Making in Children, Adolescents, and Adults. National Science Foundation, SES-0720932, $88,677. 10/07-9/09.

Center for Research on Environmental Decisions (CRED) Communication Guide development. Charles Evans Hughes Memorial Foundation, $25,000, 06/08-05/09.

Salary support for Russell Sage Foundation Fellowship, Russell Sage Foundation, $126,000, 9/07-7/08.

Collaborative Research: Interactions between changing climate and technological innovation: Implications for land use and sustainability. National Science Foundation Special Competition: Human and Social Dynamics: Agents of Change, EF-0709701, CU subcontract level of funding: $175,310. 9/07-8/10.

Neuropsychology of Risk Perception and Risk Taking. National Science Foundation, SES-0452932, $113,196. 3/05-2/07.

Center for Research on Environmental Decisions, National Science Foundation Special Competition: Decision Making Under Uncertainty Center, SES-0345840, $5,900,000, 10/04-9/09.

Center for International Business Education, Department of Education, $100,716, 10/04-9/05.

Understanding and Modeling the Scope for Adaptive Management in Agroecosystems in the Pampas in Response to Interannual and Decadal Climate Variability and Other Risk Factors, National Science Foundation Biocomplexity Initiative, SES-0410348, $1,630,296, 06/04-05/08.

Moral and Ethical Decision Making. Department of National Defense, Canada, $89,196, 5/04-4/06.

Decision-making in agricultural production in the Argentine Pampas: Alternative choice process formulations and the value of climate information. National Oceanographic and Atmospheric Administration, GC04-159, $258,561, 5/04-4/07.

Preferences as Memory. National Science Foundation, SES-0352062, $459,000. 4/04-3/07.

Development of a Domain-Specific Risk-Taking Scale. Department of National Defense, Canada, $19,472, 8/02-7/03.

The Role of Climate Perceptions, Expectations, and Forecasts in Farmer Decision Making in the Argentina Pampas. International Research Institute for Climate Prediction, $42,800, 11/01-10/02.

Developing a Taxonomy of Decision Modes. National Science Foundation, SES-0079664, $160,000, 7/00-6/02.

Predicting Modes of Decision-Making: A Cross-Cultural and Multi-Method Approach. National Science Foundation, SES-9819055, 0096015, $271,000, 4/99-3/01.

Perceived Risk-Attitudes: A New Assessment Scale for a New Model of Risk-Taking. John D. and Catherine T. MacArthur Foundation, $5,000, 2/1/98 - 12/1/99.

Decisions and Interactions Under Risk and Uncertainty Within and Across Cultures. National Science Foundation,SES-9631860, $225,000, 8/96-7/98.

Risk Perception and Decision Making Under Risk and Ambiguity in the U.S.A., Poland, P.R. China, and Hong Kong: National Science Foundation, SES-9422819, $50,000, 3/95-2/96.

Salary support to visit Center for Advanced Studies in the Behavioral Sciences, Stanford University: National Science Foundation, $35,000, 8/92-7/93.

Farm-Level Decisions in the Face of Global Warming: Descriptive and Prescriptive Issues in Complex Decision Making under Uncertainty: National Science Foundation, SES-9109942, $66,000, 8/91-7/92.

Risk Perception and Risk Attitudes: Definitions, Assessment Procedures, Effects on Behavior, and Dynamic Change: National Science Foundation, SES-8910211, $30,000, 8/89-7/90.

Dynamic Decision Models in Medical Diagnosis: University of Illinois Research Board, $19,500, 9/87-8/88.

Information Acquisition in Medical Decision Making: National Institute of Health, $5,000, 6/87-8/88.

Tests and Extensions of Conjoint Expected Risk: National Science Foundation, SES-8606750, $27,000, 10/86-7/88.

Human Perception, Judgment and Decision-Making in the Arms Control Process: University of Illinois Program in Arms Control, Disarmament, and International Security, $5,000, 6/86-7/86.

IBM Project EXCEL Award for Hardware and Software Development of Computer-Based Laboratory of Human Decision Making: IBM, $57,000, 6/86-12/87

Quantifying Perceived Risk in Medical Decision Making: National Institute of Health, $5,000, 6/86-5/87.

Process Model for Decision Making under Risk: University of Illinois Research Board, $18,500, 9/85-8/86.

Publications: Books and Project Reports

Weber, E.U. & Johnson, E.J. (2012). Psychology and Behavioral Economics Lessons for the Design of a Green Growth Strategy. White Paper for Green Growth Knowledge Platform (OECD, UNEP, World Bank). http://econ.worldbank.org/external/default/main?pagePK=64165259&theSitePK=469372&piPK=64165421&menuPK=64166093&entityID=000158349_20121017141002&cid=DEC_PolicyResearchEN_D_INT

Task Force on the Interface between Psychology and Global Climate Change (2009). Psychology and Global Climate Change: Addressing a Multi-faceted Phenomenon and a Set of Challenges. American Psychological Association, Washington, DC (http://www.apa.org/science/climate-change/).

National Research Council Report, Completing the Forecast: Characterizing and Communicating Uncertainty for Better Decisions using Weather and Climate Forecasts, Cutler, P. & Ban, R. (Eds.), (2006), Washington, DC: National Academies Press.

Ancker, J. S. & Weber, E. U. (2005). Moral and ethical decision making: A review. Report for Defence R&D Canada, Toronto. Center for the Decision Sciences, Columbia University.

Hansen, J., Marx, S., Weber, E. U. (2004). The Role of Climate Perceptions, Expectations, and Forecasts in Farmer Decision Making: The Argentine Pampas and South Florida. International Research Institute for Climate Prediction (IRI), Palisades, NY: Technical Report 04-01.

Ostrom, E., Dietz, T., Dolsak, N., Stern P. C., Stonich, S., & Weber, E. U. (Eds.) (2002). The Drama of the Commons. Washington, D. C.: National Academies Press.

Weber, E. U., Baron, J., & Loomes, G. (Eds.) (2001). Conflict and Tradeoffs in Decision Making. Cambridge University Press.

National Research Council Report, Making Climate Forecasts Matter, Stern, P. C., & Easterling, W. E. (Eds.), (1999), Washington, DC: National Academies Press.

Weber, E. U. (1983). Study Guide for Principles of Statistics by Paul A. Herzberg. New York: Wiley.

Herzberg, P. A., & Weber, E. U. (1983). Instructors Manual for Principles of Statistics. New York: Wiley.

Publications: Journal Articles and Book Chapters

(136) Zaval, L., Keenan, E.A., Johnson, E.J., & Weber, E.U. (in press). Understanding local warming: How warm days lead to increased belief in global warming. Nature Climate Change.

(135) Kunreuther, H., & Weber, E.U. (2014). Aiding decision making to reduce the impacts of climate change. Journal of Consumer Policy, in press, published online January 29, 2014: http://download.springer.com/static/pdf/815/art%253A10.1007%252Fs10603-013-9251-z.pdf?auth66=1400262067_7de135e18a15e8b8f14e540c7122d5e3&ext=.pdf (listed on 1/10/2014 as SSRN's Top Ten download list for PSN: Global Warming & Climate Change (Topic) Top Ten, on 1/11/2014 for CSN: General Cognitive Social Science (Topic) Top Ten, SRPN: Architecture (Topic) Top Ten, SRPN: Green Investment (Topic) Top Ten and SRPN: Other Sustainable Technology (Topic) Top Ten), on 1/17/2014 for SRPN: Energy Politics (Topic) Top Ten, on 2/4/2014 for Environmental Economics eJournal Top Ten and Political Economy - Development: Environment eJournal Top Ten, on 2/12/2014 for Built Environment eJournal Top Ten, on 2.27 for Political Economy - Development: Environment eJournal Top Ten and Politics & Energy eJournal Top Ten).

(134) Pinto, A., Steinglass, J.E., Greene, A.L.,Weber, E.U., Simpson H.B. (2014). Capacity to delay reward differentiates obsessive compulsive disorder and obsessive compulsive personality disorder. American Journal of Psychiatry, 75, 653-659.

(133) Patt, A. & Weber, E. U. (2013). Perceiving and communicating climate change uncertainty. WIREs: Climate Change.

(132) Weber, E.U. (in press), Individual and collective behavior change. World Social Science Report **2013** Changing Global Environments.

(131) Gong, M., Heal, G., Krantz, D.H., Kunreuther, H., & Weber, E. U. (in press). The role of subsidies in coordination games with interconnected risk. Revise and resubmit, Journal of Behavioral Decision Making.

(130) Hershfield, H.E., Bang, H.M., & Weber, E.U. (2013). National differences in environmental concern and performance predicted by country age. Psychological Science.

(129) Li, Y., Baldassi, M., Johnson, E.J., & Weber, E.U. (2013). Complementary cognitive competencies, economic decision making, and aging. Psychology and Aging, 28, 595-613. doi 10.1037/a0034172 (listed on 10/13/2013 as SSRN's Top Ten download for Human Cognition in Evolution & Development eJournal Top Ten, MKTG: Consumer Decision Making & Search (Topic) Top Ten, Neuroeconomics eJournal Top Ten, ORG: Other Decision Making, Organizational Behavior & Performance (Topic) Top Ten and ORG: Rationality, Cognition, & Decision Making (Topic) Top Ten, and on 10/18/2013 for MKTG Subject Matter eJournals Top Ten and MRN Marketing Network Top Ten).

(128) Gong, M., Krantz, D.H., & Weber, E. U. (in press). Why Chinese discount future financial and environmental gains but not losses more than Americans. Journal of Risk and Uncertainty.

(127) Weber, E.U. (2013). Seeing is believing. Nature Climate Change, 3, 312-313.

(126) Lerner, J., Li, Y., & Weber, E.U. (2013). Sadder but not wiser: The myopia of misery. Psychological Science, 24, 72-79 (listed on 08/07/2013 as SSRN's Top Ten download for ERN: Other Microeconomics: Intertemporal Consumer Choice & Savings (Topic) Top Ten, and on 08/10/2013 as SSRN's Top Ten download for Microeconomics: Intertemporal Consumer Choice & Savings eJournal Top Ten).

(125) Weber M., & Weber E. U., & Nosić, A. (2013). Determinants of changes in investor risk taking. Review of Finance, 17, 847-883 (listed on 12/30/2010 as SSRN's Top Ten download for ERN: Search; Learning; Information Costs & Specific Knowledge; Expectation & Speculations (Topic) Top Ten).

(124) Tobler, P. & Weber, E. U. (2013). Valuation for risky and uncertain choices. In: P. Glimcher & E. Fehr (Eds.), Neuroeconomics: Decision making and the brain , 2nd edition, (pp.). New York: Elsevier.

(123) Markiewicz, L., & Weber, E.U. (2013). DOSPERT's gambling risk-taking scale predicts excessive stock trading. Journal of Behavioral Finance, 14, 1-14.

(122) Hardisty, D., Appelt, K.C., & Weber, E.U. (2013). Good or bad, we want it now: Fixed-cost present bias for gains and losses explains magnitude asymmetries in intertemporal choice. Journal of Behavioral Decision Making, 26, 348-361.

(121) Hardisty, D., Thompson, K.J., Krantz, D.H., & Weber, E.U. (2013). How to measure discount rates? An experimental comparison of three methods. Journal of Behavioral Decision Making, 8, 236-249.

(120) Dietz, T., Stern, P., & Weber, E. U. (2013). Reducing carbon-based energy consumption through changes in household behavior. *Daedalus, 142,* 1-12 (listed on 08/10/2013 as SSRN's Top Ten download for PSN: Environment (Topic) Top Ten, SRPN: Carbon Reduction (Topic) Top Ten and SRPN: Consumer Behavior Issues (Topic) Top Ten, on 08/11/2013 as SSRN's Top Ten download for Consumer Social Responsibility eJournal Top Ten, and on /8/12/2013 as SSRN's Top Ten download for Environmental

Economics eJournal Top Ten).

(119) Weber, E. U. (2013). Doing the right thing willingly: Behavioral decision theory and environmental policy. In E. Shafir (Ed), The Behavioral Foundations of Policy, (pp. 380-397). Princeton University Press.

(118) Johnson, E.J., Shu, S.B., Dellaert, B.G.C., Fox, C., Goldstein, D.G., Haeubl, G., Larrick, R.P., Payne, J.W., Schkade, D., Wansink, B., & Weber, E.U. (2012). Beyond nudges: Tools of a choice architecture. Marketing Letters, 23, 487-504 (listed on 08/13/2013 as SSRN's Top Ten download for Consumer Social Responsibility eJournal Top Ten and SRPN: Consumer Behavior Issues (Topic) Top Ten).

(117) Handgraaf, M.J.J., Schuette, P., Yoskowitz, N.A., Milch, K.F., Appelt, K.C., Weber, E.U. (2012). Web-conferencing as a viable method for group decision research, Judgment and Decision Making, 7, 659-668.

(116) Krosch, A., Figner, B., & Weber, E. U. (2012). Choice processes and their consequences in morally conflicting military decisions. Journal of Behavioral Decision Making, 7, 224-234.

(115) Steinglass, J., Figner, B., Berkowitz, S., Weber, E.U., Walsh, T. (2012). Increased capacity to delay reward in anorexia nervosa. Journal of International Neurological Society, 18, 1-8.

(114) Ames, D. R., Weber, E. U., & Zou, X. (2012). Mind-reading in strategic interaction: The impact of perceived similarity on projection and stereotyping. Organizational Behavior and Human Decision Processes, 117, 96-110.

(113) Slovic, P. & Weber, E.U. (in press). Perception of risk posed by extreme events. In: Regulation of Toxic Substances and Hazardous Waste (2nd edition) (Applegate, Gabba, Laitos, and Sachs, Editors), Foundation Press (listed on 08/26/2013 as SSRN's Top Ten download for ERN: Other Game Theory & Bargaining Theory (Topic) Top Ten).

(112) Marx, S., & Weber, E. U. (2012). Decision making under climate uncertainty: The power of understanding judgment and decision processes. In T. Dietz & D.C. Bidwell (Eds.), Climate change in the Great Lakes region: Navigating an uncertain future. East Lansing, MI: Michigan State University Press (kisted on 08/13/2013, 08/19/2013, and 09/03/2013 as SSRN's Top Ten download for Consumer Social Responsibility eJournal Top Ten, on 09/16/2013 as SSRN's Top Ten list for: ERN: Behavioral Economics (Topic) Top Ten,.and on 08/15/2013 and on 9/13/2013 as SSRN's Top Ten download for Environmental Economics eJournal Top Ten).

(111) Bert F., G.P. Podestá, S. Rovere, A. Menéndez, M., North, E. Tatara, C. E. Laciana, E. Weber, and F. Ruiz Toranzo (2011). An agent-based model to simulate structural and land use changes in agricultural systems of the Argentine pampas. Ecological Modelling, 222, 3486-3499.

(110) Appelt, K.C., Hardisty, D., & Weber, E.U. (2011). Asymmetric discounting of gains and losses: A Query Theory approach. Journal of Risk and Uncertainty, 43, 107-126. doi: 10.1007/s11166-011-9125-1

(109) Weber, E. U. (2011). Climate change hits home. Nature Climate Change, 1, 25-26. doi:10.1038/nclimate1070

(108) Weber, E.U. & Stern, P. (2011). The American public's understanding of climate change. American Psychologist, 66, 315-328. doi: 10.1037/a0023253

(107) Weber, E.U., & Johnson, E. J. (2011). Query Theory: Knowing what we want by arguing with ourselves. Behavioral and Brain Sciences, 34, 91-92. doi: 10.1017/S0140525X10002797

(106) Swim, J., Stern, P., Doherty, T., Clayton, S., Reser, J.P., Weber, E.U., Gifford, R., & Howard, G.S. (2011). Psychological contributions to understanding and addressing global climate change. American Psychologist, 66, 241-250. doi: 10.1037/a0023220

(105) Figner, B., & Weber, E.U. (2011). Who takes risks, when, and why?: Determinants of risk taking. Current Directions in Psychological Science, 20, 211-216. doi: 10.1177/0963721411415790

(104) Ancker J, Weber EU, Kukafka R. (2011). Effects of interactive graphics on risk perceptions and decisions. Medical Decision Making, 31, 130-142. doi: 10.1177/0272989X10364847

(103) Ancker J., Weber E.U., Kukafka R. (2011). Effect of arrangement of stick figures on estimates of proportion in risk graphics. Medical Decision Making, 31, 143-150. doi: 10.1177/0272989X10369006

(102) Appelt, K.C., Milch, K.F., Handgraaf, M.J.J., & Weber, E. U. (2011). Decision Making Individual Differences Inventory (DMIDI) and guidelines for the study of individual differences in judgment and decision-making research. Judgment and Decision Making. *6*, 252-262.

(101) Weber, E. U. & Ancker, J. S. (2011). Cultural differences in risk taking and precaution: The relative roles of risk perception and risk attitude In J.B. Wiener, M.D. Rogers, P.H. Sand, and J.K. Hammitt (Eds.), The Reality of Precaution: Comparing Risk Regulation in the United States and Europe (pp. 480-491). Cambridge, UK: Cambridge University Press.

(100) Weber, E.U. (2010). On the coefficient of variation as a predictor of risk sensitivity: Behavioral and neural evidence for the relative encoding of outcome variability. Journal of Mathematical Psychology, 54, 395-399. doi:10.1016/j.jmp.2010.03.003

(99) Weber, E. U. (2010). What shapes perceptions of climate change? Wiley Interdisciplinary Reviews: Climate Change, 1(3), 332-342. doi: 10.1002/wcc.41

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Attari, S., M., Weber, E. U., & Krantz, D.H. Saving energy: I'll do the easy thing, you do the hard thing. Under review, Energy Policy.

Bracha, A., Malmendier, U., & Weber, E.U. Risk perception and expectation formation in macroeconomics and finance: Some psychological foundations. In preparation, Journal of Economic Literature.

Li, Y., Johnson, E. J., & Weber, E.U., Enkavi, A.Z., Gao, J., & Lisa Zaval. Cognitive ability and knowledge predict real-world financial outcomes. In preparation, Science.

Attari, S., M., Krantz, D.H., & Weber, E. U. Reasons for cooperation or defection in real-world social dilemmas. Under review, Judgment and Decision Making.

Weber, E.U. Understanding and responding to changes in perceived risk. In: L. Bennear, E. Balleisen, K. Krawlec, & J. Wiener (Eds.), Recalibrating Risk: How Regulatory Institutions Respond to Shifts in Risk Perceptions. Under review.

Ungemach, C., Camilleri, A.R., Johnson, E.J., Larrick, R.P., & Weber, E.U. Translated attributes as choice architecture. Revise and resubmit, Journal of Marketing Research.

Hardisty, D.J., Frederick, S., & Weber, E.U. Dread looms larger than pleasurable anticipation. Revise and resubmit, Journal of Consumer Research.

Weber, B., Enkavi, E.Z,. Zweyer, I., Wagner, J., Elger, C.E., Weber, E. U., Johnson, E. J. Preference consistency relies on hippocampal function: Evidence from mediotemporal lobe epilepsy. Under review,

Nature Neuroscience.

Attari, S., M., Progrebna, G., & Weber, E. U. Impact of perceived social pressure on giving. Under review, Judgment and Decision Making.

Johnson, E.J. & Weber, E. U. Query theory: A constructive preference account. In preparation, Psychological Review.

Baldassi, M., Weber, E.U., Johnson, E.J., Nair, S., Czaja, S., & Li, Y. Comparison of web-based vs. in-person cognitive function tests of younger and older adults. In preparation, Psychology & Aging.

Hardisty, D.J., Weber, E.U., & Treuer, G. Temporal discounting of real vs. hypothetical gains and losses. In preparation, Management Science.

Savani, K., Westfall, J. E., Johnson, E. J., & Weber, E. U. (2013). Construing actions as choices: Focusing attention on relevant information during decision-making. Revise and resubmit, Psychological Science.

Greenspan Bell, R., & Weber, E.U. Build better habits: Applying behavioral insights to reduce greenhouse gas emissions. Under review, Goao Review.

Figner, B., Weber, E.U., Steffener, J.,Krosch, A., Wager, T.D., & Johnson, E. J. Framing the future first: Brain mechanisms that increase patience in intertemporal choice. In preparation, Journal of Neuroscience.

Gao, J., Enkavi, A.Z., Weber, E.U., Qian, J., Li, Y., & Johnson, E. J. Domain-specific risk-taking across the lifespan: Age differences in DOSPERT predict differences in real-world behavior. In preparation, Psychology & Aging.

Enkavi, A.Z., Gao, J., Li, Y., Johnson, E. J., & Weber, E.U. Asking the right question: A comparison of risk attitude measures and their ability to predict real-world risk taking. In preparation, American Economic Review.

Schneider, C.R., Fehrenbacher, D.D., & Weber, E.U. Catch me if I fall: A cross-cultural comparison of financial risk-taking willingness in light of social and state cushioning. In preparation, Journal of Economic Psychology.

Van Duijvenvoorde, A.C.K., Huizenga, H.M., Somerville, L.H., Delgado, M., Powers, A., Weeda, W.D., Casey, B.J., Weber, E.U., & Figner, B. Neural correlates of expected risks and returns in risky choice across development. Under review, Journal of Neuroscience.

Zaval, L., Markowitz, E.M., & Weber, E.U. How will I be remembered? Conserving the environment for legacy's sake. Under review, Psychological Science.

Treuer, G.A., Weber, E.U., Appelt, K.C.,, Goll, A.E., & Crookes, R.D. Weathering the storm: Status quo adjustments explain successful policy implementation. Working paper.

Bracha, A. & Weber, E.U. A psychological perspective of panic. Working Paper, Federal Reserve Bank of Boston (listed on 1/20/2013 as SSRN's Top Ten download for ERN: Business Fluctuations; Cycles; listed on 1/24/2013 as SSRN's Top Ten download for CSN Subject Matter eJournals All Papers, Cognitive Science Network All Papers and Macroeconomics: Prices, Business Fluctuations, & Cycles eJournal All Papers; listed on 1/28/2013 as SSRN's Top Ten download for CSN Subject Matter eJournals, Cognitive Science Network and Microeconomics: General Equilibrium & Disequilibrium Models of Financial Markets eJournal; listed on 2/2/2013 as SSRN's Top Ten download for CSN Subject Matter eJournals and Cognitive Science Network).

Smith, J.A., Appelt, K.C., & Weber, E.U. (2009). Querying the group mind: Applying Query Theory to decisions made by groups. Working Paper, Center for Decision Sciences.

Smith, J.A., Konnikova, M., Handgraaf, M.J.J., & Weber, E.U. Patient and risky alone, impatient and cautious with others: Are groups the best forum for environmental decision making? Working paper, Center for Decision Sciences.

Konnikova, M., Figner, B., Mischel, W., & Weber, E. U. When self-control hurts: Financial risk-taking, stress, and illusory control. Working Paper, Center for Decision Sciences.

Weber, E.U., Kates, R.K., Krantz, D., Leiserowitz, A., Parris, T.M., & Vasi, I.B. Political and societal goodwill. In: J.S. Sachs and P. Schlosser (Eds.), Is Sustainable Development Feasible? Columbia University Press. Working Paper.

Slovic, P. & Weber, E.U. (2012). Perception of risk posed by extreme events. Working Paper, Center for Decision Sciences (listed on 08/26/2013 as SSRN's Top Ten download for ERN: Other Game Theory & Bargaining Theory (Topic) Top Ten).

Other Publications

Weber, E.U. & Bell, R. B. (2014). Focus on the habits: Applying behavioral insights to reduce greenhouse gas emissions. Boao Review, July 2014.

Hershfield, H.E & Weber, E.U. (2013). To Change Environmental Behavior, Should We Really Tell People the World Is Ending? Huffington Post, 09/03/2013: http://www.huffingtonpost.com/hal-e-hershfield/to-change-environmental-behavior_b_3845707.html

Weber, E.U. (2013). How can psychologists help make Earth Day every day? Behavioral Expert Elke Weber, PhD, Discusses Psychology and Environmental Protection. American Psychological Association Website, http://www.apa.org/news/press/releases/2013/04/earth-day.aspx

Weber, E. U. (2006). The Determinants of Risk Taking. Transcript and Webcast of Invited Presentation, Thought Leader Forum, Legg Mason Capital Management, Baltimore MD, September 28, 2006. http://www.leggmason.com/thoughtleaderforum/2006/conference/weber.html

Weber, E. U. (2003). Origins and functions of perceptions of risk. Transcript of Invited Presentation, National Cancer Institute (NCI) Workshop *Conceptualizing and Measuring Risk Perceptions*, February 13, 2003. http://dccps.nci.nih.gov/brp/presentations/weber.pdf

Weber, E. U. (2003). Objetivos y emociones en la toma de decisión. Suplemento de la edición No. 269 de la Revista CREA, Uso de informacion climatica: Para la toma de decisiones en la produccion agricola (p. 7).

Selected Mentions in the Popular Media

NPR: Marketplace

Climate change: how to talk about bad news
April 25, 2014
BYLINE: Sarah Gardner
http://www.marketplace.org/topics/sustainability/climate-change-how-talk-about-bad-news

MANCHESTER GUARDIAN
The communication of uncertainty is hindering climate change action
January 31, 2014
BYLINE: Adam Corner
http://www.theguardian.com/sustainable-business/climate-change-communication-uncertainty
Discusses the role of uncertainty in behavioral responses to climate change based on my 2014 WIRE Climate Change paper with Tony Patt.

The following publications all discuss my Nature Climate Change (2014) paper on "Local Warming"
CHRISTIAN SCIENCE MONITOR
Global warming? Public attitudes often at mercy of the weather, study finds.
January 13, 2014
BYLINE: Julie S
http://www.livescience.com/42526-weather-influences-climate-change-belief.html
US WORLD| AND NEWS REPORT
No, Global Warming Isn't Suddenly a Myth Because It's Really Cold Out
January 25, 2014
BYLINE: Yarrow Axford
http://www.usnews.com/opinion/articles/2014/01/25/no-global-warming-isnt-suddenly-a-myth-because-its-really-cold-out
Other publicity for "Local Warming":
http://conservationmagazine.org/2014/01/art-makes-environmental-change-real/; http://arstechnica.com/science/2014/01/acceptance-of-global-warming-rises-on-warm-days/?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+arstechnica%2Findex+%28Ars+Technica+-+All+content%29; http://www.natureworldnews.com/articles/5638/20140114/todays-weather-affects-peoples-beliefs-global-warming-trends.htm; http://www.alaskadispatch.com/article/20140114/global-warming-public-attitudes-often-mercy-weather-study-finds Weather Changes People's Climate Beliefs, Study Finds (right click for link) Headlines & Global News, http://www.livescience.com/42526-weather-influences-climate-change-belief.html; http://blogs.ei.columbia.edu/2014/01/12/why-do-we-run-hot-and-cold-on-climate-change/; http://news.discovery.com/earth/global-warming/how-weather-messes-with-our-global-warming-opinions-140112.htm; http://www.eenews.net/climatewire/2014/01/13/stories/1059992779; http://www.livescience.com/topics/global-warming/; http://www.climatenewsnetwork.net/2014/01/how-weather-shapes-our-climate-ideas/; http://www.rtcc.org/2014/01/13/publics-climate-change-concerns-shaped-by-weather-outside/; http://www.eco-business.com/news/how-weather-shapes-our-climate-ideas/; http://www.business-standard.com/article/news-ians/day-s-weather-influence-people-form-global-warming-opinions-114011300828_1.html; http://economictimes.indiatimes.com/environment/global-warming/days-weather-influence-people-form-global-warming-opinions/articleshow/28745569.cms; http://zeenews.india.com/news/eco-news/day-s-weather-influence-people-form-global-warming-opinions_903832.html

AARP BULLETIN
Declutter your Finances: Put wisdom to work for you
December 2013
BYLINE: Jane Bryant Quinn
http://www.aarp.org/money/investing/info-12-2013/simplify-financial-investments.html

Discusses my recent *Psychology and Aging* paper with Li, Johnson, et al. on the complementary contributions of fluid and crystallized intelligence to sound financial decisions across the life span, where fluid intelligence decreases with age and crystallized intelligence increases, at least into people's 60s.

PSYCHOLOGICAL SCIENCE BLOG
Heat wave psychology: Long past, greener future?
BYLINE: Wray Herbert
http://www.psychologicalscience.org/index.php/news/full-frontal-psychology/heat-wave-psychology-a-long-past-and-a-greener-future.html#comments
Discusses my recent *Psychological Science* paper with Hershfield and Bang on Gott's principle.
Other media mentions of this paper are at http://www.npr.org/2013/11/26/247297844/why-countries-invest-differently-in-environmental-issues; http://www.weather.com/health/how-make-people-care-about-climate-change-20131202; http://www.huffingtonpost.com/hal-e-hershfield/to-change-environmental-behavior_b_3845707.html

FOCUS ONLINE
DLDwomen 2013: Wieso wir 85 Hahre alt warden und mit 75 Jahren sterben
June 7, 2013
http://www.focus.de/wissen/mensch/psychologie/tid-32370/dldwomen-2013-wieso-wir-85-jahre-alt-werden-und-mit-75-jahren-sterben_aid_1044897.html
Discusses my joint presentation with Eric Johnson at DLDwomen in Munich

WALL STREET JOURNAL
What makes a risk taker:New research shows often-cautious people become daredevils in right context
May 22, 2013
BYLINE: Sue Shellenbarger
http://online.wsj.com/article/SB10001424127887324102604578497133593217870.html?mod=WSJ_LifeStyle_LeadStoryNA
Discusses my research on domain-specific risk taking and the DOSPERT scale

STATE OF THE PLANET BLOG (EARTH INSTITUTE, COLUMBIA UNIVERSITY)
Making Green Behavior Automatic
May 23, 2013
BYLINE: Renee Cho
http://blogs.ei.columbia.edu/2013/05/23/making-green-behavior-automatic/
Covers uses of "green" choice defaults and Choice Architecture Conference organized by Center for Decision Sciences

COVERAGE of 2013 Psychological Science paper with Jenn Lerner and Ye Li on the effect of sadness on consumer behavior (i.e., greater discounting of future rewards or a greater present bias) got covered by a broad range of publications and blogs, including: Boston Globe, Cosmopolitan, The Examiner, Huffington Post, Globe and Mail, Daily Telegraph, MoneyScience, Prevention, PsychCentral, Psychology Today, Salon, Science Daily, ScienceBlog, Wall Street Journal, Women's Health, CNNMoney (http://money.cnn.com/2012/11/29/pf/sadness-money/index.html), The Consumerist (http://consumerist.com/2012/11/29/if-youre-unhappy-you-know-it-keep-an-eye-on-how-you-spend-your-money/), Harvard Business Review, Daily Stat, April 19, 2013: http://links.mkt3142.com/servlet/MailView?ms=NTk5NDY2NQS2&r=Mzc4OTkyMDUzS0&j=NzE1NTAyNTIS1&mt=1&rt=0

BOSTON GLOBE

Policy paper from the Federal Reserve Bank of Boston examines financial panics
Dec. 5, 2012
BYLINE: Beth Healey
http://www.boston.com/businessupdates/2012/12/05/policy-paper-from-the-federal-reserve-bank-boston-examines-financial-panics/IGJdNmrqM58bQaFbJpG76J/story.html
Describes my paper with Anat Brancha from the Boston Federal Reserve Bank on the role of the human desire for control in the origin of financial panics.

FRANKFURTER RUNDSCHAU
Mit Psychotricks die Welt retten
Dec. 5, 2012
BYLINE: Simone Einzmann
Describes my work on choice architecture for environmental decisions.

NEW YORKER
Top Ten Myths About China in 2012
Dec. 3, 2012
BYLINE: Evan Osnos
http://www.newyorker.com/online/blogs/evanosnos/2012/12/top-ten-myths-about-china-in-2012.html#ixzz2GC7CstCo
Cites my work with Chris Hsee in the 1990s, showing that Chinese are less risk averse than Americans due to their larger social networks that cushion them against large losses.

STERN MAGAZINE
Wir moechten nicht glauben, dass sich die Welt veraendert
Nov. 9, 2012
BYLINE: Christoph Koch
Two-page interview with me about my work on the status quo bias as a barrier to people's willingness to embrace change.

TIME MAGAZINE
Handprints, Not Footprints
Mar. 12, 2012
BYLINE: Daniel Goleman
http://www.time.com/time/magazine/article/0,9171,2108015,00.html
Quotes my work on the importance of positive vs. negative motivators for environmentally-aware actions.

FALLING WALLS CONFERENCE (http://falling-walls.com/?intro), BERLIN, GERMANY, 2011
Video of talk: http://www.facebook.com/fallingwalls?sk=app_142371818162 (Session 2, time point 41:38). Synopsis of press coverage of my work on human resistance to change, triggered by my TED-like (general audience accessible) presentation (http://falling-walls.com/lectures/elke-u-weber/) on November 9, 2011 in Berlin, Germany, attended by business, political, and thought leaders from around Europe: BBC news interview with: http://soundcloud.com/falling-walls/bbc-elke-weberTwo print media interviews, in "Die Zeit," influential German weekly, and "Hamburger Abendblatt": http://www.zeit.de/2011/45/Interview-Elke-Weber http://www.abendblatt.de/ratgeber/wissen/article2088508/Mauern-einreissen-neue-Wege-gehen.html. My talk was referenced by German Chancellor Angela Merkel, who gave the lunch keynote address at the conference. The transcript of her remarks is published at:
http://www.bundesregierung.de/nn_1264/Content/DE/Rede/2011/11/2011-11-09-merkel-falling-walls.html.
English translation of selection from Angela Merkel's address: "Mr. Turner told me that you discussed this morning the research of Elke Weber, who works as an economic psychologist at Columbia University. Perhaps her research can give us some hints on why it is so difficult to convert our knowledge in action. Her research

makes it clear that we need insight into existing problems, but that we also need a cause or trigger for acting on such insight. Particularly suitable triggers are unpleasant events. Therefore we should take the unpleasantness of the current [European] debt crisis as a trigger to think about whether we can make significant changes in our current operations. One could say that this could be a silver lining in the unpleasantness of the current crisis. This could be a turning point, a trigger that causes important and long lasting change."

DALAI LAMA MIND & LIFE INSTITUTE WORKSHOP, October 17 – 21, 2011
5-day meeting with His Holiness the Dalai Lama in his private residence in Dharamsala, India, with other climate, behavioral and environmental scientists and Buddhist scholars to discuss *Ecology, Ethics and Interdependence* as part of the Mind and Life XXIII Conference,. I led the session "Ethics and Action: The Psychology of Action and Behavior Change" and presented the Dalai Lama with the CRED Communications Guide. See the Mind & Life Institute website for an overview and video recordings. For additional coverage of the event, read my guest postcard entry written with University of Arizona's Diana Liverman, in Andrew Revkin's NYT Dot Earth blog, news bulletins by APS http://www.psychologicalscience.org/index.php/video/aps-fellow-talks-psychological-science-with-the-dalai-lama.html, India Times http://oneclick.indiatimes.com/photo/0cBU5ea7y6dvG?q=Dalai+Lama, Kevin Krajick's *State of the Planet* entry, *Methane, Modern Science and the Dalai Lama*, San Francisco Examiner http://www.examiner.com/spirituality-in-san-francisco/dalai-lama-leads-way-on-environment-and-ethics, Dallas Morning News http://topics.dallasnews.com/photo/0cBU5ea7y6dvG, Toronto Star http://themes.thestar.com/photo/0cBU5ea7y6dvG, Columbia Business School http://www4.gsb.columbia.edu/news/item/7321319/Professor+Elke+Weber+Talks+Environment+with+the+Dalai+Lama, MBA Periodical http://mba-periodical.blogspot.com/2011/11/dalai-lama-talks-with-chazen-senior.html, Vineyard Voice http://vineyardvoice.org/content/methane-modern-science-and-dalai-lama, FirstPost http://firstpost.com/topic/person/dalai-lama-the-dalai-lama-right-attends-a-session-of-the-mi-image-0cBU5ea7y6dvG-45484-1.html, International Network of Engaged Buddhists http://www.inebnetwork.org/news-and-medias/8-news/226-mind-and-life-institutes-23rd-meeting-with-his-holiness-the-dalai-lama.

CFA MAGAZINE
"Out of the Sky: How can advisors help clients who struggle with financial windfalls?"
Sept-Oct 2010
BYLINE: Rhea Wessel

COLUMBIA IDEAS@WORK
"Remembering the Future"
March 26, 2010
http://www4.gsb.columbia.edu/ideasatwork/feature/7211690/Remembering+the+Future
Discusses my research on Query Theory and discounting
(one of five most popular stories of 2010)

PSYCHOLOGY HEUTE (German Edition of PSYCHOLOGY TODAY)
Warum wir uns oft falsch entscheiden: Elke Weber im Gespräch
February 2010
BYLINE: Wolfgang Streitboerger
http://www.psychologie-heute.de/artikel/heft1002.html#a1
Interview about my work on risk perception and risk reactions and the current financial crisis
Reprinted in Special Issue of PSYCHOLOGIE HEUTE on "Die Qual der Wahl: Wie trifft man Entscheidungen?", 2011

SÜDDEUTSCHE ZEITUNG
Wir Neandertaler

September 12, 2009
BYLINE: Michaela Hass
Describes my work on environmental decisions making and my Center for Research on Environmental Decisions (CRED)

NPR MARKETPLACE
Built on Belief: Crisis rattled belief in financial system
BYLINE: Kay Rysdall
http://marketplace.publicradio.org/display/web/2009/09/10/pm-built-on-belief-essay/

NEW YORK TIMES MAGAZINE
Why Isn't the Brain Green?
April 16, 2009
BYLINE: Jon Gertner
Describes my work on environmental decisions making and my Center for Research on Environmental Decisions (CRED)

WALL STREET JOURNAL
The Intelligent Investor: Pay Collars Won't Hold Back Wall Street's Big Dogs
February 7, 2009
BYLINE: Jason Zweig
http://online.wsj.com/article/SB123396963383059235.html
Quotes me on my work on discounting

Museum of Natural History, New York City
Interview Video accompanying exhibit: Climate Change*:* The Threat to Life and A New Energy Future
October 2008 – August 2009
Features interview excerpts of me and other New Yorkers like Michael Bloomberg

COLUMBIA MAGAZINE
The Deep Sleep
Fall 2008
BYLINE: David J. Craig
http://www.columbia.edu/cu/alumni/Magazine/Fall2008/feature1.html
Cites my work on the perception and communication of climate change

Wallace Global Fund and Dyslexic Film Documentary by Adolfo Doring
"Blind Spot"
Official Selection of Woodstock Film Festival 2008 and London Independent Film Festival 2008
http://www.blindspotdoc.com/
Interview appearance on human misperceptions of risk

GREATER GOOD MAGAZINE
Are Human Beings Hard-Wired to Ignore the Threat of Catastrophic Climate Change?
November 17, 2008
BYLINE: Lisa Bennett
http://www.alternet.org/story/106982/
Interview about human perceptions of and reactions to climate risks

MORE MAGAZINE
"Mind over Money: Do You dare?"

March 2008, p. 60
BYLINE: Jolie Soloman
Interview about gender differences in risk taking

THE RECORD, Columbia University
"Do We Have Your Attention Now?"
January 24, 2008
BYLINE: Stacy Parker Aab
Describes my Center for Research on Environmental Decisions (CRED) and my research on human responses to climate change.

THE NEW YORK TIMES
"Stuck on Coal, and Stuck for Words in a High-Tech World"
December 4, 2007
BYLINE: Andrew C. Revkin
Mentions my research on risk perception and climate change
http://www.nytimes.com/2007/12/04/science/earth/04comm.html?_r=1&oref=slogin

FORTUNE MAGAZINE
"The greatest money manager of our time"
November 26, 2006
BYLINE: Andy Serwer
Article on Legg Mason money manager Bill Miller mentions me as one of eight "Bill's brainiacs," " deep thinkers that have influenced his understanding of how markets behave."
http://money.cnn.com/magazines/fortune/fortune_archive/2006/11/27/8394343/index.htm

COLUMBIA IDEAS@WORK
"Risk-Averse vs. Risk-Aware"
Fall 2005
Discusses my research on risk perception
http://www0.gsb.columbia.edu/null?&exclusive=filemgr.download&file_id=5910207&rtcontentdisposition=filename%3Drisk-management.pdf

THE ECONOMIST
"National Stereotypes: A fair bet, but wrong"
September 18, 2004
Discusses my research with colleague Christopher Hsee on cross-cultural differences in risk perception and risk preference in the USA and PRC
http://www.economist.com/business/displaystory.cfm?story_id=3209530

THE BOND BUYER ONLINE
"Staying in for the Long Haul: What Keeps Muni Professionals in the Business"
November 20, 2003
BYLINE: Nicholas Chesla
Cites me on a number of psychological reasons that may prevent people from switching to a different occupation
http://www.bondbuyer.com/article.html?id=20031120KMWKI3EC&from=home

PSYCHOLOGY TODAY
"Confucius Say: Risky Business"
March/April 1999
Discusses my research on cross-cultural differences in risk taking based on a comparative study of proverbs

http://psychologytoday.com/articles/pto-19990301-000006.html

AMERICAN PSYCHOLOGICAL ASSOCIATION MONITOR
"How do different cultures weigh the same decision? Psychologists are beginning to uncover differences in how Chinese and Americans make decisions"
May 1999
BYLINE: Beth Azar
Discusses my research on cross-cultural differences in risky decision making
http://www.apa.org/monitor/may99/weigh.html

CAPITAL IDEAS
"Researching Risk Preference"
Vol. 1, No. 3, Summer 1998
University of Chicago Graduate School of Business alumni magazine discusses my research with colleague Christopher Hsee on cross-cultural differences in risk perception and risk preference in the USA and PRC
http://www.chicagogsb.edu/capideas/sum98/hsee.htm

lnvited Presentations

1985
Harvard University, School of Public Health

1986
Columbia University, Department of Psychology; University of Alberta, Department of Psychology; Sloan Foundation Research Conference on Risk Measurement: Axiomatics, Experiments, and Applications, Lake Arrowhead, California.

1987
University of Chicago, Graduate School of Business; State University of California at Fullerton, Department of Psychology; Purdue University, Department of Psychology

1988
Zentrum fuer Umfragen und Meinungs-Analysen (ZUMA), Mannheim, W. Germany; University of Heidelberg, Department of Psychology; University of Illinois at Urbana-Champaign, Illinois Interdisciplinary Workshop on Decision Making, Keynote Address; University of Western Australia, Symposium on Implicit Memory, Invited Talk; University of Milan, Department of Information Sciences

1989
U.S. Department of Agriculture, Economic Research Service: Southern Regional Risk Project; University of California, Irvine, Department of Mathematical Behavioral Sciences

1990
Annual Meeting of the Society of Mathematical Psychology, Toronto, Canada, Invited Address; University of Maine, Orono, Department of Agricultural and Resource Economics

1991
Annual Meeting of the Society for Judgment and Decision Making, New Orleans, Louisiana, Symposium on Distributed Representation and Parallel Processing Models of Neural and Cognitive Processes; University of Illinois at Chicago, College of Medicine, Department of Medical Education; University of California, Berkeley, Department of Psychology; University of Iowa, Department of Management and Organizations; Joint U.S. -- U.S.S.R. Research Conference on Preference, Risk, and Social Choice: University of California, Irvine, Research Unit in Mathematical Social Sciences, and Central Economic and Mathematical Institute of the U.S.S.R.; University of Illinois at Urbana-Champaign, Finance and Management Workshop, Department of Agricultural Economics

1992
Stanford University, Department of Psychology; University of Haifa, Department of Psychology, Israel; Hebrew University, Department of Psychology and Center for Rationality, Jerusalem, Israel; University of Oklahoma, Department of Psychology, Norman, OK; International Congress of Psychology, Brussels, Belgium, Symposium on Decision Making in Clinical Contexts; Annual Meeting of the Society for Medical Decision Making, Portland, Oregon, Workshop on Frontiers of Utility Theory

1993
Stanford University, Graduate School of Business; Annual Meeting of the Society of Mathematical Psychology, Norman, Oklahoma, Symposium on Cognition and Decision Making; Wesleyan University, Department of Psychology; Washington University, Olin School of Management, Workshop in Organizational Behavior; University of California, Irvine, Department of Mathematical Behavioral Sciences; 31st Bayesian Research Conference, Savage Memorial Lecture, Los Angeles, California; University of Oregon, Department of

Psychology

1994
RAND Corporation, Santa Monica, CA; Koblenz School of Corporate Management, Otto-Beisheim Graduate School, Vallendar, Germany; European Association of Agricultural Economists 38th Annual Meeting, Invited Keynote Address, Copenhagen, Denmark; Harvard Business School, Symposium in Honor of Howard Raiffa; University of Colorado, Department of Psychology; Rutgers University, School of Business, Department of Organizational Behavior; University of Illinois at Chicago, College of Medicine, Department of Medical Education; University of Chicago, Cognitive Science Program, Department of Psychology; GSB/Kellogg Workshop on Decision Theory and Negotiation, Kellogg School of Management, Northwestern University; McMaster University, Department of Psychology, Hamilton, Canada; Midwestern Economics Association Annual Meeting, Symposium on Microeconomic Modeling, Uncertainty, and Risk, Chicago, Illinois; University of Mannheim, Department of Finance

1995
The Ohio State University, Department of Psychology; University of North Carolina, Department of Psychology; Ohio State University, Summer Institute in Political Psychology; Ohio State University, Behavioral Decision Theory Colloquium Series; Gesellschaft fuer unendliche Versuche (GUV), Ann Arbor, Michigan; INFORMS Fall Conference, New Orleans, Louisiana, Symposium on Behavioral Decision Theory; Symposium on Risk and Value; Annual Meeting of the Society for Judgment and Decision Making, Los Angeles, California, Symposium on Medical Decision Making; University of Mannheim, Department of Economics; Research Conference: Psychological Perspectives to Environmental and Ethical Issues in Management, Kellogg Environmental Research Center, Kellogg Graduate School of Management, Northwestern University

1996
Ohio University, Department of Psychology; University of Arizona, School of Business and Public Administration, Department of Management, Tucson, Arizona; Carnegie Mellon University, Department of Social and Decision Sciences; International Association for Conflict Management Annual Meeting, Ithaca, New York, Symposium on Environmental Conflicts: The Role of Perceptions; Ohio State University, Summer Institute in Political Psychology

1997
Swiss Federal Institute of Technology (ETH), Zurich, Switzerland, Department of Economics; University of Fribourg, Switzerland, Department of Statistics; Ohio State University, College of Pharmacy; Ohio State University, Department of Statistics; INFORMS Spring Conference, San Diego, California, Symposium on Behavioral Decision Theory; Symposium on Risk and Perception; Ohio State University, Summer Institute in Political Psychology; SPUDM 16, Leeds, United Kingdom, Invited Organizer of Workshop "Cross-cultural Approaches to Decision Making; University of Mannheim, Workshop in Finance and Banking, Germany; Max Planck Institute for Social Research, Munich, Germany; John D. and Catherine T. MacArthur Foundation Invited Research Conference on Risk, Chicago; Gesellschaft fuer unendliche Versuche (GUV), Ann Arbor, Michigan; INFORMS Fall Conference, Dallas, Texas, Symposium on Risk and Decision Making: Generic Models and Phenomena across Cultures; Research Conference: New Ideas in Decision Making; Dispute Resolution Research Center and Cognitive Science Program, Northwestern University

1998
INFORMS Spring Conference, Montreal, Canada, Invited Session on Implications of Recent Psychological Results for Decision Analysis Practice; University of Fribourg, Switzerland, Departments of Psychology and Statistics; Fourth Invitational Choice Symposium, Workshop on Modeling Bounded Rationality (B. Meunier and R. Selten, Chairs), Groupe HEC, Paris, France; Annual Meeting of the Society for Judgment and Decision Making, Dallas, Texas, Presidential Address; Ohio State University, School of Public Policy and Management;

New York University, Stern School of Business, Department of Management and Organizational Behavior

1999
American Economic Association Annual Meeting, New York City, Invited Talk in Session on Risk Aversion; New York University, Department of Psychology; Columbia University, Department of Psychology; Indiana University, Department of Psychology; University of Chicago, Graduate School of Business; University of Toulouse, Department of Psychology; Annual Meeting, Dutch Psychonomics Society, Netherlands, Invited Address

2000
Zentrum fuer interdisziplinaere Forschung (ZiF), Bielefeld, Germany; University of Pennsylvania, Wharton School, OPIM Workshop; International Forum on Climate Prediction, Agriculture, and Development, International Research Institute for Climate Prediction; National Academy Summer Study Session on Creation of a National Climate Service, Invited Talk, Woods Hole, MA; Annual Meeting, Economic Science Association, Tucson, AZ, Psychology-Economics Panel Discussion

2001
Association of American Geographers 97th Annual Meeting, Invited talk in Session on Seasonal Climate Forecasts: Linking Climate and Users, New York, NY; Subjective Probability, Utility, and Decision Making (SPUDM) Biannual Meeting, Invited Address, Amsterdam, Netherlands; New York University, Department of Economics

2002
International Speaker Series, University of Calgary, School of Management; University of Calgary, School of Management, Finance Workshop; Brown University, Department of Cognitive and Linguistic Sciences; Cornell University, Johnson Graduate School of Management, Department of Management and Organizations; Duke University, Fuqua School of Business, Department of Management; Wissenschaftskolleg zu Berlin, Fellows' Colloquium, Berlin, Germany; Columbia/Wharton Risk Roundtable, Arden House, Harriman, NY; Max Planck Institute, Bonn, Germany, Project Group: Common Goods: Law, Politics, and Economics; Max Planck Institute for Research into Economic Systems, Jena, Germany, Project Group: Strategic Interaction; Max Planck Institute for Human Development, Berlin, Germany, Center for Adaptive Behavior and Cognition; German Association of Experimental Economics, Annual Meeting, Wittenberg, Germany; Columbia Center for Economy, Environment, and Society, Conference on Climate Change/Variability and the Insurance Industry

2003
American Economic Association Annual Meeting, New York City, Invited Talk in Session on Risk Modeling; National Cancer Institute, Workshop on Conceptualizing and Measuring Perceived Risk; Columbia University, Earth Institute, Strategic Plan Lecture Retreat; Georgia Institute of Technology, School of Public Policy; Drexel University, Department of History and Politics, Speaker Series on Science, Technology and Society; Harvard University, Department of Economics, Behavioral and Experimental Economics Workshop; University of Miami, Rosenstiel School of Marine & Atmospheric Science, Climate Research Workshop;Carnegie Mellon University, Social and Decision Sciences; University of Pennsylvania, Wharton School of Management, Pension Research Council Symposium; American Psychiatric Association Annual Meeting, San Francisco, Invited Talk in Session on Application of Behavioral Decision Sciences in Clinical Psychiatry; Society for Mathematical Psychology Annual Meeting, Invited Talk in Amos Tversky Honorary Symposium, Ogden, Utah; 2nd Tilburg Symposium on Psychology and Economics: Games and Decisions, Keynote Address, Tilburg University, Netherlands; University of Toronto, Rotman School of Business, Organizational Behavior Workshop; Center for Interuniversity Research and Analysis on Organizations (CIRANO), Presentation, Montreal, Canada; Washington University, Olin School of Business, Organizational Behavior Workshop; New York University, Department of Psychology, Cognition and Perception Workshop; Chinese University of Hong Kong, Marketing Workshop, Hong Kong, China

2004
Heidelberg Meetings on Judgment and Decision Processes, Intuition in Judgment and Decision Making, Invited Talk, Heidelberg, Germany; Geophysical Fluid Dynamics Lab, NOAA, Climate Impacts Meeting, Princeton, NJ; International Research Institute for Climate Prediction (IRI), Lamont-Doherty, Columbia University, Palisades, NY; University of Fribourg, Switzerland, Department of Psychology; Dahlem Workshop on "Heuristics and the Law", Deutsche Forschungsgemeinschaft and Stifterverband fuer die Deutsche Wissenschaft, Berlin, Germany; International Association for Chinese Management Research, Inaugural Conference, Invited Talk, Beijing, China; University of Mannheim, Germany, Workshop in Finance and Banking; NeuroEconomics 2004 Meeting, Invited Talk, Kiawah Island, SC; Princeton University, Woodrow Wilson School, Workshop on Global Warming: The Psychology of Long Term Risk

2005
London School of Economics, Workshop on Knowledge, Information and Environmental Decisions, Invited Talk; Subjective Probability, Utility, and Decision Making (SPUDM) Biannual Meeting, Symposium on Small Economic Decisions, Stockholm, Sweden; Columbia University, Department of Psychology, Departmental Colloquium; Dartmouth College, Tuck School of Business, Workshop on How to Increase the Effectiveness of Financial Education: Lessons from Economics and Psychology, Keynote Address; Asociación Argentina de Consorcios Regionales de Experimentación Agrícola (AACREA) Annual Meeting, Invited Address, Buenos Aires, Argentina; New York University, Department of Psychology; Society for Personality and Social Psychology Annual Meeting, Cultural Psychology Pre-Conference, Invited Talk, New Orleans, LA; Center for Experimental Social Science, Workshop on Neuroeconomics, New York University; Darden Graduate School of Business, University of Virginia, Visitor and Featured Speaker, Behavioral Economics Seminar

2006
Department of Defense (DOD), MURI Workshop on Decision Modeling and Behavior in Uncertain and Complex Environments, Invited Presentation, University of Arizona; University of Chicago, Graduate School of Business, Center for Decision Research Workshop; University of Haifa, Department of Psychology, Israel; Hebrew University, Center for Rationality, Jerusalem, Israel; University College London, London Judgement and Decision Making Seminar; London Business School, Joint Marketing and Management Workshop; Universitat Pompeu Fabre, Department of Economics and Business, Workshop Talk; Research Conference on Conversational Pragmatics in Psychology, Laboratoire Dynamiques Sociocognitives et Vie Politique, Invited Presentation, University of Toulouse; Max Planck Institute, Bonn, Germany, Project Group: Common Goods: Law, Politics, and Economics; World Meteorological Organization (WMO) International Conference: Living with Climate Variability and Change: Understanding the Uncertainties and Managing the Risks, Espoo, Finland, Invited Address; National Institute on Aging, Behavioral and Social Research Program, Decision Making and Aging Workshop, Invited Presentation, Bethesda, MD; Thought Leader Forum, Legg Mason Capital Management, Invited Presentation, Baltimore MD; Columbia University Medical School, Cognitive Neuroscience Seminar; Lamont Doherty Earth Observatory, Columbia University, "Science of Diversity" Lecture Series, Palisades NY; National Institute on Aging Research Conference, Mind the Gap! Behavioral Perspectives on the Medicare Part D Market for Prescription Drug Insurance, Invited Talk, Berkeley CA

2007
National Intelligence Agency, Research Conference Improving Analytic Practices: Lessons from Outside the Intelligence Community, Invited Presentation on Promising Research with Potential Application to Analytic Practices, Chantilly, VA; Utah Winter Operations Management Conference, Invited Talk on Behavioral Decision Theory; Society for Personality and Social Psychology Annual Meeting, Judgment and Decision Making Pre-Conference, Invited Presentation, Memphis, TN; INSEAD, Department of Decision Sciences; National Science Foundation and Michigan State University, International Symposium on Decision Making under Climate Change Uncertainty, Invited Address, East Lansing MI; Eastern Psychological Association Annual Meeting, Invited Address in Presidential Symposium on Behavioral Economics in Three Flavors,

Philadelphia, PA; MIT, Atmospheric Science Seminar; Ernst Strüngmann Forum "Better than conscious," Invited Presentation and Participation, Frankfurt, Germany; University of Zurich, Swiss Banking Institute, Invited Presentation; Subjective Probability, Utility, and Decision Making (SPUDM) Biannual Meeting, Invited Panelist, "Challenges to Descriptive Models of Choice," Warsaw, Poland; National Institute on Aging, Workshop on Refining Economic Phenotypes for Genetic Analysis, Invited Presentation, Bethesda, MD; Duke University, NSF Statistical and Applied Mathematical Sciences Institute (SAMSI) Workshop
"Risk: Perceptions, Policy, and Practice," Keynote Address; UCLA, Anderson School of Business, Strategy Workshop; Society for Risk Analysis Annual Meeting, Keynote Address, San Antonio, TX

2008
New York University, Neuroeconomics Symposium; Russell Sage Foundation, Invited Talk, New York City, NY; University of Pennsylvania, Wharton School, Marketing Workshop; Harvard University, Behavioral and Experimental Economics Workshop; Behavioral Finance Forum, Invited Presentation, Miami Beach, FL; Copenhagen Business School, Conference on Neuroeconomics, Invited Talk; American Psychological Society Annual Meeting, Pre-Conference Workshop on "Opportunities for Advancing Behavioral and Social Research on Aging: An Introduction for Behavioral Scientists," Invited Panelist; International Conference on Thinking, Invited Symposium Talk, Venice, Italy; New York State Psychiatric Institute, Division of Clinical Therapeutics, Invited Presentation; Harvard University, Kennedy School of Government, Management and Leadership Workshop; Annual Meeting of the Society for Judgment and Decision Making, Chicago, Illinois. Invited Discussant in Panel on Medical Decision Making

2009
National Center for Atmospheric Research (NCAR), Boulder, CO; Stanford University, Department of Psychology, Departmental Colloquium; Westminster Business School and London Business School, Joint Workshop in Economics of Behavior and Decision Making; Columbia Business School Alumni Association, London, UK; Yale School of Management, Marketing Seminar; Dondena Center for Research in Social Dynamics, Department of Decision Sciences, Bocconi University, Milan, Italy; University of Basel, Psychology, Departmental Colloquium; Copenhagen Business School, Decision NeuroScience Research Group Workshop; Association for Psychological Science (APS) Annual Meeting, Symposium on "Risk Perception and Risk Taking," San Francisco CA; Princeton University, Workshop on Science, Democracy, and Global Environmental Regulation; Clinton Foundation C40 Cities Climate Leadership Group, Connecting Delta Cities International Workshop; Federation of Associations in Behavioral & Brain Sciences (FABBS), Congressional Briefing, Showcasing Research from a NSTC Report: Social Behavioral and Economic Research in the Federal Context; Subjective Probability, Utility, and Decision Making (SPUDM) Biannual Meeting, Invited Workshop Presentation, Rovereto, Italy; H209 Forum: Water Challenges for Coastal Cities – From the Dutch Delta to New York Harbor, Invited Panelist in Session on Creating Greener Brains: Driving the Environmental Message Home, Jersey City, NJ; National Institute on Aging/National Institute of Health (NIA/NIH), Neuroeconomics of Aging Workshop, Evanston, IL; National Institute on Aging/National Institute on Drug Abuse (NIA/NIDA), Conference on Aging, Motivation, and Addiction, Washington, DC; Carnegie Mellon University, Department of Social and Decision Sciences, Colloquium; City University of New York, Graduate Center, Applied Economics Seminar; Duke University, Center for Neuroeconomic Studies Colloquium; Duke University, Social Science Research Institute, Workshop on Social Interactions; Behavior, Energy, and Climate Change (BECC) Conference, Washington, DC; Earth Institute, Columbia University, Sustainable Development Seminar Series: Focus on Climate; Columbia Business School, Panel on Environmental Policy and Climate Change; University of Basel, Department of Psychology, Honorary Doctorate Invited Public Talk, Basel, Switzerland,; National Academy of Science, Workshop on Addressing the Challenges of Climate Change Through the Behavioral and Social Sciences, Washington, DC; Earth Institute, Columbia University, Faculty Retreat, Invited Presentation on Social System Challenges to Sustainable Development.

2010
Resources for the Future (RFF), Washington, DC; Center for Environmental Research and Conservation

(CERC), Columbia University, New York, NY; Mount Sinai School of Medicine, Workshop on Global Environmental Change, New York, NY; School of International and Public Affairs, Columbia University; University of British Columbia, Peter Wall Institute for Advanced Studies, Invited Talk in Virtual Colloquium "Changing Perceptions of Climate Change through Community Action," Vancouver, BC; Pacific Institute for Climate Solutions, Workshop on Social Mobilization for Climate Solutions, Vancouver, BC; Arctic Research Consortium of the U.S. (ARCUS), State of the Arctic Conference, Invited Address, Miami, FL; Colorado State University, Rocky Mountain Series on Social Science and Global Change, Keynote Address (per interactive video), Fort Collins, CO; Garrison Institute, Climate, Mind and Behavior Project, Executive Luncheon Keynote Address, Century Association, New York NY; Prince of Wales's Business & the Environment Programme, University of Cambridge Programme for Sustainable Leadership, New York Senior Executive Seminar, Invited Address, Glen Cove Mansion, Long Island, NY; Eight Triennial Invitational Choice Symposium, Workshop on Decision Architecture, Invited participation and presentation, Key Largo FL; Deutsche Forschungsgemeinschaft, Workshop on Computations, Decisions, and Movement, Invited Talk, Rauischholzhausen Castle, Germany; Association for Psychological Science (APS) Annual Meeting, Invited Talk, Boston MA; National Oceanic and Atmospheric Administration (NOAA) and US Geological Survey (USGS), 2010 California Extreme Precipitation Symposium, Invited Presentation (prerecorded video), Sacramento CA; Columbia University, Applied Statistics Center, Invited Presentation, Conference on Risk Perception, New York, NY; National Institute on Aging, Division of Behavioral and Social Research, Meeting on Economic Phenotypes. Invited Presentation. Kellogg School of Management, Evanston, IL; Columbia Climate Center at the Earth Institute, Columbia University and the Consulate General of Denmark in New York, Invited Panel Presentation at Climate Symposium: Revitalizing the Debate, New Yoirk NY; University of Alaska, Fairbanks, Geophysical Institute & International Arctic Research Center, Invited Talk; University of Alaska, Anchorage, Institute of Social and Economic Research, Invited Talk; American Academy of Arts & Science. Invited presentation in workshop The Alternative Energy Future: A Social Science Agenda, Cambridge, MA; Society for Judgment and Decision Making, Annual Meeting, Preconference Tribute Panel to Sarah Lichtenstein, Invited Presentation, St. Louis, MO; Carnegie Mellon University, Center for Formal Epistemology, Workshop on Foundational Issues in Bounded Rationality, Invited Talk,, Pitrtsburgh, PA; University of Pennsylvania, Wharton School, Penn Symposium on Fostering and Financing Long-Term Investments in Prevention and Protection, Philadelphia, PA; Columbia Business School, Faculty Showcase Research Presentation.

2011

University of Missouri, Invited Address at Interdisciplinary Symposium on Realistic Decision Making, Columbia, MO; Max Planck Gesellschaft, Wissenschaftlicher Rat, Munich, Germany; Garrison Institute, Climate Mind and Behavior Symposium, Invited Talk, Garrison NY; University of Texas at Austin, Schools of Engineering and Law, Invited Talk at Research Conference on Smart Grid Dynamics; University of Pennsylvania, Department of Psychology, Departmental Colloquium; Northwestern University, Kellogg School of Business, Management Colloquium; Martin E. Segal Theatre Center, Graduate Center, City University of New York, Panel Discussion Member for Earth Day: The Civilians' The Great Immensity, New York, NY; Garrison Institute, Climate Cities and Behavior Symposium, Invited Address, Garrison NY; Technical University Munich, Institute for Advanced Studies, Invited Talk; NeuroPsychoEconomics Conference, Keynote Address, Munich, Germany; Intergovernmental Panel on Climate Change (IPCC), Invited Address, WGII/WGIII Expert Meeting on Economic Analysis, Costing Methods, and Ethics; Lima, Peru; Subjective Probability, Utility, and Decision Making (SPUDM) Biannual Meeting, Invited Workshop Presentation, Kingston, UK; World Bank, Sustainable Development Leadership Program, Invited Talk, Washington DC; Mind & Life Institute Conference on "Ecology, Ethics and Interdependence. Invited Talk and Participation, Dalai Lama Private Residence, Dharamsala, India; Society for Judgment and Decision Making (SJDM) Annual Meeting, Seattle WA; Falling Walls Conference, International Conference on Future Breakthroughs in Science and Society, Invited Talk, Berlin, Germany; Center for Economics and Neuroscience, University of Bonn, Keynote Address for Center Inauguration, Bonn, Germany; Decision Center for a Desert City, Annual Water/Climate Briefing, Keynote Address, Arizona State University, Tempe, AZ.

2012

World Bank, Green Growth Platform Launch Conference; University of Maryland, College of Behavioral and Social Sciences and Smith School of Business, Judgment and Decision Making Symposium, Keynote Address; University of Mannheim, Department of Psychology, Invited Workshop, Mannheim, Germany; Columbia Business School, No Free Lunch Seminar Series, Program for Financial Studies, Invited Talk; Barnard College, Interdisciplinary Workshop on Environmental Learning, Ignorance, and Fear, Invited Commentary; University of Indiana, Cognitive Science and School of Environmental and Public Affairs, Invited Talk, Bloomington, IN; World Bank, Sustainable Development Network, Invited Talk, Washington DC; U.S. Congressional briefing on *Energy Choices: Moving People Toward Change*, Invited Presentation, Washington, DC; Technical University Munich, Faculty of Management, Invited Talk, Munich, Germany; Bertelsmann AG, Seminar on Psychology and Economics, Keynote Address, Berlin, Germany; Federal Reserve Bank of Boston, Invited Talk at conference on Incorporating Episodes of Panic into Macroeconomic Models, Boston, MA; Potsdam Institute for Climate Research Impact (PIK), Invited Presentations at Global Sustainability Summer School, Potsdam, Germany; American Psychological Association, Annual Meeting, Keynote Address, Orlando, FL; International Institute for Applied Systems Analysis (IIASA), Invited Presentation to Young Scientist Program, Laxenburg, Austria; Duke University, Law School and Nicholas School of the Environment, Invited Presentation at Conference on Recalibrating Risk: How Regulatory Institutions Respond to Shifts in Risk Perceptions, Durham, NC; Santa Fe Institute and Morgan Stanley joint conference on Risk: The Human Factor, Invited Talk, New York City; New York University Educating for Sustainability Speaker Series, Invited Faculty Research Talk and Public Lecture, New York, NY; Princeton University, Princeton Institute for International and Regional Studies, Communicating Uncertainty Workshop, Invited Presentation; Princeton University, Cognitive Lunch Series, Department of Psychology, Invited Talk.

2013

University of New South Wales, Climate Change Research Center and Department of Psychology, Invited Talk, Sydney, Australia, February 14, 2013.

UCLA, Anderson School of Management. Behavioral Decision Making Group Colloquium, March 8, 2013.

Caltech, Humanities and Social Science Colloquium, March 12, 2013.

UC Riverside, Business School, Dean's Speaker Series, March 14, 2013.

Fordham University, Department of Psychology, Research Colloquium, New York, NY, April 10, 2013.

Princeton University, Workshop on the Ethics of Risk and Climate Change, Invited Discussant, April 12, 2013

American Psychological Association, Earth Day Facebook Chat, Behavioral Expert on Psychology and Environmental Protection, https://www.facebook.com/AmericanPsychologicalAssociation /posts/10151546693312579, April 22, 2013.

Princeton University, Princeton Institute for International and Regional Studies, Communicating Uncertainty Workshop, Invited Presentation, April 24, 2013.

White House Workshop on Psychological Science and Behavioral Economics in the Service of Public Policy, sponsored by President's Office of Science and Technology Policy (OSTP), Council of Economic Advisors (CEA), NIA, and APS, Washington DC, May 22, 2013.

Garrison Institute, Climate Mind Behavior Symposium, Invited Talk, Garrison, NY, June 11, 2013.

Digital Life Design (DLD) Conference, Invited Address, Munich, Germany, July 15, 2013.

University of Duisburg/Essen, Centre for Global Cooperation Research, Invited Talk in Masterclass Retreat 2013, Towards a better understanding of complexity and scale and their relevance for global cooperation, Duisburg, Germany, August 31, 2013.

Harvard University, Radcliffe Institute for Advanced Study, Public Policy and the Brain Workshop, Invited Speaker, Cambridge, MA, September 20, 2013.

University of Gothenburg, Centre of Finance, Invited Talk, Gothenburg, Sweden, September 25, 2013.

University of Gothenburg, Dept. of Psychology, Invited Talk, Gothenburg, Sweden, September 26, 2013.

Global Economic Symposium (GES), Beyond Individualism towards Social Responsibility, Invited Panelist, Kiel, Germany, October 1, 2013.

Duke University Energy Initiative and the Harvard Environmental Economics Program, Workshop on Energy Efficiency Paradox, Invited Presentation, Harvard U., Kennedy School of Government, October 24, 2013.

1st Multidisciplinary Conference on Reinforcement Learning and Decision Making, Invited Talk, Princeton University, October 25, 2013.

Rutgers University, Center for Cognitive Science, New Brunswik, NJ, November 5, 2013.

Columbia Business School Sanford Bernstein Center Conference "The Big Big Question: Can MY Company, University or Organization Change?", Invited Presentation, Italian Academy, New York, NY, November 8, 2013.

Café Science, Columbia University, Alumni Center, New York, December 9, 2013.

Council of Scientific Society Presidents, C.H.E.S.S. Club, Invited Presentation, Asilomar, CA, December 14.

2014

National Institute on the Teaching of Psychology (NITOP), 36th Annual Conference, Invited Address, St. Petersburg, FL, January 3, 2014.

Department of Defense, Invited Presentation to Navy N45 on Behavioral Approaches to Energy Conservation. Pentagon, Washington DC, March 4, 2014.

SUSSTAIN, Invited Talk at Behavioral World Meets the Navy World, Woodrow Wilson Center, Washington, DC, April 1, 2014

NMO IIASA, Invited presentation on Risk Research and Issues in the United States. National Academy of Sciences, Washington DC, March 28, 2014

We need to talk! Climate Change Communication Symposium organized by Danish Monday Morning Weekly Magazine, Copenhagen, Denmark, April 7, 2014.

The New School for Social Research, Climate Change Demands We Change. Why Don't We? Invited Conference Talk, New York City, NY, April 24, 2014.

United Nations, Psychology at the UN Day, Invited Talk, April 24, 2014.

University of Tilburg, Joint Psychology and Marketing Seminar Talk, Tilburg, Netherlands, May 28, 2014.

Council of Scientific Society Presidents, CHESSClub, Invited Presentation, Cambridge, MA, May 30, 2014.

NYSERDA/AAAS workshop on Applying Behavioral Strategies to Energy Decisions and Behaviors, Invited Panelist, Pace Energy and Climate Center, Pace Law School, White Plains, NY, June 18/19, 2014.

Carnegie Mellon University, Center for Environmental Decision Making Seminar, Invited Talk, October 14, 2014.

World Wildlife Fund, Science for Nature Seminar, Washington DC, October 16, 2014.

Outside Activities 2008-2014

Columbia Business School requires faculty members to disclose any activities that might present a real or apparent conflict of interest. The list below complies with this requirement.

Consulting

Occasional behavioral-science based consulting assignments for the The Greatest Good, 2012 – present.
Commissioned Paper on Behavioral Economics for Green Growth Knowledge Platform, World Bank, 2011-12.
Research directions and research design for National Intelligence Council, 2006 -2010.

Paid Speaking Engagements

Prince of Wales's Business & the Environment Programme, University of Cambridge Programme for Sustainable Leadership, New York Senior Executive Seminar, Invited Talk, 2010.

Unpaid Speaking Engagements

Clinton Foundation C40 Cities Climate Leadership Group, Connecting Delta Cities Workshop, 2009.
Federation of Associations in Behavioral & Brain Sciences (FABBS), Congressional Briefing, Showcasing Research from a NSTC Report: Social Behavioral and Economic Research in the Federal Context, 2009.
H209 Forum: Water Challenges for Coastal Cities – From the Dutch Delta to New York Harbor, Session on Creating Greener Brains: Driving the Environmental Message Home, Jersey City, NJ, 2009.
Resources for the Future (RFF), Workshop on Climate Change and Extreme Events: Managing the Tail Risks, Invited Presentation, Washington, DC, 2010.
Pacific Institute for Climate Solutions, Workshop on Social Mobilization, Vancouver, BC, 2010.
Garrison Institute, Climate, Mind and Behavior Project, Executive Luncheon Keynote Address, Century Association, New York NY, 2010.
National Oceanic and Atmospheric Administration (NOAA) and US Geological Survey (USGS), 2010 California Extreme Precipitation Symposium, Invited Presentation, Sacramento CA, J2010.
Garrison Institute, Climate Mind and Behavior Symposium, Invited Talk, Garrison NY, March 2, 2011.
Garrison Institute, Climate Cities and Behavior Symposium, Invited Address, Garrison NY, April 27, 2011.
World Bank, Green Growth Platform Launch Conference, Mexico City, January 13, 2012.

Unpaid Service

Faculty Advisor, ClimateCoLab, MIT, 2012 – 2014.
Lead Author, Intergovernmental Panel on Climate Change (IPCC), 5th Assessment Report, Working Group III, 2011 – 2014.
Member, Energy Expert Network (DEENET), Decision Strategies International (DSI), London, UK, 2010 – present.
Advisory Board Member, Harmony Institute, 2009 – present.
Member, Global Agenda Council on Decision-making and Incentives Systems, World Economic Forum, 2009 - 2010
Executive Committee Member, Columbia Earth Institute, 2009 – present.
Board Member, Federation of Associations in Behavioral & Brain Sciences (FABBS) Foundation, 2009 - 2011.
Member, American Psychological Association (APA) Task Force on Interface between Psychology and Global Climate Change, 2008 - 2009
Board of Directors, Association for Psychological Science (APS) 2007 - 2010
Steering Committee Member, Columbia Climate Center (C3), 2007 – present.
Advisory Board Member (2004 – 2009) and President (2007 - 2008), Society for Neuroeconomics,

LAURIE LEE WEINSTEIN
Department of Social Science
Western Connecticut State University
Danbury, CT 06810
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Ph.D. Anthropology, Southern Methodist University, ethnology, 1983.
Chair, **Social Sciences**, elected 2006-2008. Interdisciplinary department in anthropology/sociology, political science, economics, geography and education.

Chair, Jane Goodall Center for Excellence in Environmental Studies:

- Revamped the whole program in 2012-14: hired an assistant (Diane Hassan), re-envisioned the JGC at WestConn
- Whereas the JGC, between 1995-2012, was based on bringing Jane Goodall to campus on a regular basis, the JGC that we envisioned was based on continuing her legacy of environmental activism by creating a permaculture garden that would feed the community and teach students about the relationships between people, plants, insects, soil and climate.
- Successfully applied for grants to create the permaculture garden on campus and hire permaculture designers, student garden managers, and purchase materials
- Garden has been expanded 2x and provides food to local shelters and state/city programs
- Oversee the workings of the garden, including the hiring of garden managers and volunteers
- Brought in speakers: Jane Goodall, Robert Kennedy Jr and Fabien Cousteau
- Created brochures, web sites and FB page
- Worked to get us labeled as a 501 c3 listing
- Currently working on plans with Dr. Mitch Wagener (Biology, WestConn) to expand the JGC mission to include environmental advocacy
- Work with Roots and Shoots (Jane Goodall's international student program) on campus to support student environmental leadership
- Teaching classes in sustainability and permaculture: Food and Culture, Native American Studies and Cultural Anthropology all incorporate the permaculture garden and look at cross cultural approaches to subsistence strategies and the globalization of food
- Expertise in Native American land use and water conservation

Grants and Awards

- Staples Foundation Grant for Jane Goodall Center/WCSU, 2017
- Danbury Womens' Garden Club awards from 2012-2017 for Jane Goodall Center/WCSU, 2016
- Aquarion Water, Environmental Champions Award for the Jane Goodall Center/WCSU, 2016
- Constellation Energy Community Champions Award for the Jane Goodall Center/WCSU, 2016
- Whole Foods %5 Day award winner for Jane Goodall Center/WCSU, 2015
- Lyent Russel Award for Contributions to Connecticut Archaeology, Archaeological Society
- Of Connecticut, fall 2011.
- Phillips Fund, American Philosophical Society, ethnohistory of the Weantinock Indians, 2002-2003.
- Harcourt Foundation Award for archaeological research and education, 2001.
- Outstanding Professor in the School of Arts & Sciences, awarded by the Student Government
- Association, Western Connecticut State University, 1998.
- Connecticut State University Grant for archaeology field schools and/or ethnohistory for the following summers: 1994-1998, 2000-2002 and 2004-2007, 2009, 2010, 2011, 2013

RESEARCH IN PROCESS

- The Native Peoples of Western Connecticut from the Late Prehistoric to Contemporary Times to be co-written with Dr. Lucianne Lavin, Director, of Research at the Institute for American Indian Studies; this book will be part of my series, Native Peoples of the Americas, University of Arizona Press.
- The Archaeology of Winter Encampments with Bethany Morrison and Cosimo Sgarlata. Cosimo is editor for a book that has been solicited by the University of Florida Press. The three of us, including, one student, are writing chapters for this book based upon our archaeological field school and research. My chapter, "The Unfulfilled Revolution," by Weinstein, Hassan and Mauro, was recently submitted. The whole manuscript is "In Press."
- Shinnecock Whalers of Long Island. Native Peoples of the Americas. Gen. Ed. Laurie Weinstein. Tucson, AZ: University of Arizona Press. Expected publication,Spring 2018.
- Consorting with the Savages by Marge Bruchac. Native Peoples of the Americas. Gen. Ed. Laurie Weinstein, Tucson: University of Arizona Press. Expected publication, Fall 2017

PUBLICATIONS

- Mapping Indigenous Lands, edited by Laura Zanotti. Native Peoples of the Americas. Gen. Ed. Laurie Weinstein, Tucson: University of Arizona Press. Fall 2016.
- Archaeology of El Peru'-Waka: Ancient Maya Performances of Ritual, Memory and Power, edited by Olivia Navarro-Farr and Michelle Rich. Native Peoples of the Americas. Gen. Ed. Laurie Weinstein, Tucson: University of Arizona Press. Spring 2015.
- Central Western Mexico. Native Peoples of the Americas. Edited by Andrew Roth-Seneff, Ronald Van Kemper and Julie Atkins. Gen. Ed. Laurie Weinstein, Tucson: University of Arizona Press. Summer 2015.
- Guest Editor, Archaeological Society of Connecticut, Bulletin. "Archaeology in Western
- Connecticut" spring 2012).
- "Looking for the Indians: The Little Known Heroes of the Revolutionary War," with Samantha Mauro
- In Archaeological Society of Connecticut, Bulletin, Archaeology in Western Connecticut, spring 2012).
- Anthropologies of Guayana: *Cultural Spaces in Northeastern Amazonia*
  Edited by Neil L. Whitehead; Stephanie W. Alemán. Native Peoples of the Americas. Gen. Ed. Laurie Weinstein. Tucson: University of Arizona Press. 2009
- "The Life of a Chair Saturated in Bureaucracy," Anthropology News, ppgs 27-28, American Anthropological Association, March 2007.
- Guest Editor, Northeast Anthropology, Volume on the Interpretation of Indian Land Deeds in New England, No. 70, fall 2005
- "Oh Wither Weantinock: Deeds and Their Interpretations" with Deseree Heme, Northeast Anthropology, No. 70: 49-65, 2005.
- *Native People of the Gulf Coast of Mexico.* Edited by Alan R. Standstrom and E. Hugo GarciaValencia. Native Peoples of the Americas. Gen. Ed. Laurie Weinstein. Tucson: University of Arizona Press. 2005.
- *Lifeways in the Lowlands: New Approaches to Maya Archaeology.* Edited by Jennifer Mathews and Beth Morrison, Native Peoples of the Americas. Gen. Ed. Laurie Weinstein. Tucson: University of Arizona Press. 2005.
- *A Lasting Impression: Coastal, Lithic and Ceramic Research in New England Archaeology.* Edited by Jordan Kerber. Native Peoples of the Americas. Gen. Ed. Laurie Weinstein. Westport, CT: Bergin & Garvey, 2002.

LECTURES & CONFERENCE PAPERS

- "The View from Western Connecticut: The Not-So Hidden Histories of the Native Peoples"
  Laurie Weinstein, Western Connecticut State University and Diane Hassan, Danbury Museum and Historical Society for the American Society for Ethnohistory, fall 206
- Chair and Organizer for "Of Time and Place: New England Indians during the Colonial Wars of the 18th Century," for the American Society for Ethnohistory, fall 206

- “Footprints of the Revolutionary War: Soldiers of Redding, Ct.,” with Bethany Morrison and Cosimo Sgarlata. Invited lecture for the Graduate Program in Archaeology at UCONN, Storrs. April 25, 2013.
- “Southern New England Indians in the American Revolution,” with Diane Hassan, The Society for
- American Archaeology Meetings, April 2013.
- “Active Native Networks in Western Connecticut,” in 7th Annual Native American and Archaeology Roundtable at the Institute for American Indian Studies, November 2012.
- “The Revolutionary War Indian Soldiers of Redding, Connecticut,” The Society for American Archaeology Meetings, April 2012.
- Organizer and Chair for “Battlefield and Campsite Archaeology,” The Society for American Archaeology Meetings, April 2012.
- “Native Americans in Southern New England and Conflict,” in 5th Annual Native American-Archaeology Roundtable. Institute for American Indian Studies, October 30th, 2010
- “Native Peoples of Western Connecticut: The Pahquioque,” American Society for Ethnohistory Meetings, October 2010.
- Chair and Organizer for spring meeting, Archaeological Society of Connecticut. Theme: Indigenous Peoples of Western Connecticut. Brought in well-known scholars from throughout the Northeast. April, 2010.
- “Looking for the Indians: The Little Known Heroes of the Revolutionary War,” with Samantha Mauro (student). Archaeological Society of Connecticut, April 2010.
- “Archaeological Investigations at Redding’s Middle Encampment” with Bethany Morrison and Cosimo Sgarlata, invited paper, Archaeological Society of Connecticut Fall Meeting, 2009.
- “Native Peoples in Western Connecticut During the Revolutionary War,” American Society for Ethnohistory Meetings, October, 2009.
- “Western Connecticut Indians and the Revolutionary War,” Invited presentation for 4th Annual Native American-Archaeology Roundtable, Historic Native American Communities in Southern New England: What Local Town Histories Never Told Us. Institute for American Indian Studies. September 27, 2009.
- Organizer and Chair: “The Revolutionary War in Southern Connecticut and the Experience of Others,” Northeastern Anthropological Association, meetings, March 2009. This session was created to showcase the work of my students from the summer field school and my fall intro. to archaeology class. The fall class did graduate-quality research on the history of Indians, Blacks and women who participated in the Revolutionary War.
- “Overview of the Session and the Archaeology of Middle Encampment,” Northeastern Anthropological Association, meetings, March 2009.
- Session Organizer and Chair: “Interpreting Indian Land Deeds,” American Society for Ethnohistory Meetings, 2004.
- “Interpreting Weantinock Indian Land Deeds,” American Society for Ethnohistory Meetings, 2004.
- "The Weantinock Indians and their Neighbors: Understanding Intercultural Dynamics in the 18th Century,” Third Mashantucket Pequot History Conference, September 2002.

LAURIE LEE WEINSTEIN
Department of Social Science
Western Connecticut State University
Danbury, CT 06810
Tel. (203) 837-8453

EDUCATION

Ph.D. Anthropology, Southern Methodist University, ethnology, 1983.
Areas of Expertise: Native North American, esp. Northeast & Southwest;
Prehistory and material culture; women's studies, particularly women and the military
M.A. Anthropology, Southern Methodist University, 1980.
B.A. The Colorado College, cum laude with Distinction in Anthropology, 1976.
Bennington College, 1972-73.

EMPLOYMENT

Chair, Social Sciences, elected 2006-2008. Interdisciplinary department in anthropology/sociology, political science, economics, geography and education.
Visiting Professor, The Colorado College 2014, 2015
Visiting Professor, Western State College, Gunnison, Colorado, 2002-2003
Professor of Anthropology, Western Connecticut State University; employed at WCSU
Since 1990
Visiting Scholar, Arizona State Museum, Spring 1997; Summer 1998

Chair, Jane Goodall Center for Excellence in Environmental Studies:

- **Revamped the program in 2012-14: re-envisioned the JGC at WestConn**
- **Whereas the JGC, between 1995-2012, was based on bringing Jane Goodall to campus on a regular basis, the JGC that we envisioned was based on continuing her legacy of environmental activism by creating a permaculture garden that would feed the community and teach students about the relationships between people, plants, insects, soil and climate.**
- **Successfully applied for grants to create the permaculture garden on campus and hire permaculture designers, student garden managers, and purchase materials**
- **Garden has been expanded 2x and provides food to local shelters and state/city programs**
- **Oversee the workings of the garden, including the hiring of garden managers and volunteers**
- **Brought in speakers: Jane Goodall, Robert Kennedy Jr and Fabien Cousteau**
- **Created brochures, web sites and FB page**
- **Worked to get us labeled as a 501 c3 listing**
- **Currently working on plans with Dr. Mitch Wagener (Biology, WestConn) to expand the JGC mission to include environmental advocacy**
- **Work with Roots and Shoots (Jane Goodall's international student program) on campus to support student environmental leadership**
- **Teaching classes in sustainability and permaculture: Food and Culture, Native American Studies and Cultural Anthropology all incorporate the permaculture garden and look at cross cultural approaches to subsistence strategies and the globalization of food**
- **Expertise in Native American land use and water conservation**

Grants and Awards

- **Staples Foundation Grant for Jane Goodall Center/WCSU, 2017**
- **Danbury Womens' Garden Club awards from 2012-2017 for Jane Goodall Center/WCSU, 2016**
- **Aquarion Water, Environmental Champions Award for the Jane Goodall Center/WCSU, 2016**
- **Constellation Energy Community Champions Award for the Jane Goodall Center/WCSU, 2016**
- **Whole Foods %5 Day award winner for Jane Goodall Center/WCSU, 2015**
- **Lyent Russel Award for Contributions to Connecticut Archaeology, Archaeological Society**
- **Of Connecticut, fall 2011.**
- **Phillips Fund, American Philosophical Society, ethnohistory of the Weantinock Indians, 2002-2003.**
- **Harcourt Foundation Award for archaeological research and education, 2001.**
- **Outstanding Professor in the School of Arts & Sciences, awarded by the Student Government**
- **Association, Western Connecticut State University, 1998.**
- **Connecticut State University Grant for archaeology field schools and/or ethnohistory for the following summers: 1994-1998, 2000-2002 and 2004-2007, 2009, 2010, 2011, 2013**

RESEARCH IN PROCESS

- **<u>The Native Peoples of Western Connecticut from the Late Prehistoric to Contemporary Times</u> to be co-written with Dr. Lucianne Lavin, Director, of Research at the Institute for American Indian Studies; this book will be part of my series, Native Peoples of the Americas, University of Arizona Press.**
- **<u>The Archaeology of Winter Encampments</u> with Bethany Morrison and Cosimo Sgarlata. Cosimo is editor for a book that has been solicited by the University of Florida Press. The three of us, including, one student, are writing chapters for this book based upon our archaeological field school and research. My chapter, "The Unfulfilled Revolution," by Weinstein, Hassan and Mauro, was recently submitted. The whole manuscript is "In Press."**

BOOKS IN UNIVERSITY OF ARIZONA PRESS SERIES

- **<u>Shinnecock Whalers of Long Island</u>. Native Peoples of the Americas. Gen. Ed. Laurie Weinstein. Tucson, AZ: University of Arizona Press. Expected publication, Spring 2018.**
- **<u>Consorting with the Savages</u> by Marge Bruchac. Native Peoples of the Americas. Gen. Ed. Laurie Weinstein, Tucson: University of Arizona Press. Expected publication, Fall 2018**
- **<u>Mapping Indigenous Lands</u>, edited by Laura Zanotti. Native Peoples of the Americas. Gen. Ed. Laurie Weinstein, Tucson: University of Arizona Press. Fall 2016.**
- **<u>Archaeology of El Peru'-Waka: Ancient Maya Performances of Ritual, Memory and Power</u>, edited by Olivia Navarro-Farr and Michelle Rich. Native Peoples of the Americas. Gen. Ed. Laurie Weinstein, Tucson: University of Arizona Press. Spring 2015.**
- **<u>Central Western Mexico</u>. Native Peoples of the Americas. Edited by Andrew Roth-Seneff, Ronald Van Kemper and Julie Atkins. Gen. Ed. Laurie Weinstein, Tucson: University of Arizona Press. Summer 2015.**
- **Anthropologies of Guayana: *Cultural Spaces in Northeastern Amazonia***
  Edited by Neil L. Whitehead; Stephanie W. Alemán. Native Peoples of the Americas. Gen. Ed. Laurie Weinstein. Tucson: University of Arizona Press. 2009
- ***<u>Native People of the Gulf Coast of Mexico.</u>* Edited by Alan R. Standstrom and E. Hugo GarciaValencia. Native Peoples of the Americas. Gen. Ed. Laurie Weinstein. Tucson: University of Arizona Press. 2005.**
- ***<u>Lifeways in the Lowlands: New Approaches to Maya Archaeology.</u>* Edited by Jennifer Mathews and Beth Morrison, Native Peoples of the Americas. Gen. Ed. Laurie Weinstein. Tucson: University of Arizona Press. 2005.**
- ***<u>A Lasting Impression: Coastal, Lithic and Ceramic Research in New England Archaeology.</u>* Edited by Jordan Kerber. Native Peoples of the Americas. Gen. Ed. Laurie Weinstein. Westport, CT: Bergin & Garvey, 2002.**
- **This series was formally with Greenwood Press and includes many titles.**

PUBLICATIONS

- **Guest Editor, Archaeological Society of Connecticut, Bulletin. "Archaeology in Western**

Connecticut" spring 2012).

- **"Looking for the Indians: The Little Known Heroes of the Revolutionary War," with Samantha Mauro In Archaeological Society of Connecticut, Bulletin, Archaeology in Western Connecticut, spring 2012).**
- **"The Life of a Chair Saturated in Bureaucracy," Anthropology News, ppgs 27-28, American Anthropological Association, March 2007.**
- **Guest Editor, Northeast Anthropology, Volume on the Interpretation of Indian Land Deeds in New England, No. 70, fall 2005**
- **"Oh Wither Weantinock: Deeds and Their Interpretations" with Deseree Heme, Northeast Anthropology, No. 70: 49-65, 2005.**
- Review, The Voice of the Dawn, by Frederick Wiseman in American Indian Culture and Research Journal, Vo. 25, No. 3. 2001.
- **"The Southwest" Local History Encyclopedia. American Association for State & Local History & Alta Mira Press, 2000.**
- **Review, Citizen Soldiers & Manly Warriors, by Claire Snyder, in New Political Science, Vol. 22,**
- **No. 3. 2000.**
- **Gender Camouflage: Women And The U.S. Military, Ed. by Francine D'Amico and Laurie Weinstein. New York University Press, 1999.**
- **Review, Dispossession by Degrees: Indian Land & Identity in Natic, Massachusetts, 1650-1790, by Jean O'Brien, in Social Anthropology. Fall 1998.**
- **Review, Indians in the U.S. & Canada: A Comparative History, by Roger Nichols. In Ethnic Conflict Research Digest, Vol. 2, pp. 32. February 1998.**
- **Review, Native People of Southern New England, 1500-1650, by Kathleen Bragdon, in Ethnohistory, 44:3. 1997.**
- **Wives and Warriors in the U.S. and Canada. Ed. By L. Weinstein and C. White. Westport, CT: Bergin & Garvey, 1997.**
- **"Blue Navy Blue: Submarine Officers and the Two Person Career," by L. Weinstein and H. Mederer in Wives and Warriors in the U.S. and Canada. Ed. By L. Weinstein and C. White, pp. 7-18. Westport, CT: Bergin & Garvey, 1997.**
- **Review, The Mohican of Stockbridge, by Patrick Frazier, in American Indian Culture and Research Journal, 19:1. 1994.**
- **Enduring Traditions: The Native Peoples of New England. Ed. By Laurie Weinstein. Westport, CT: Bergin & Garvey, 1994. (became the first book for Native Peoples of the Americas for Greenwood Press)**
- **"The Mission of Samson Occum," in Enduring Traditions, Laurie Weinstein, Ed. Westport, CT:**
- **Greenwood Press, 1994.**
- **"Featherworking in New England", with Delinda Passas and Anabela Marques, in Enduring Traditions, Laurie Weinstein, Ed. Westport, CT: Greenwood Press, 1994.**
- **"Wampanoag," in Encyclopedia of Native Americans in the 20th Century. Mary Davis, Gen.Ed., NY: Garland Press, 1994.**
- **"Mohegan," in Encyclopedia of Native Americans in the 20th Century. Mary Davis, Gen.Ed., NY: Garland Press, 1994.**
- **"Choices and Constraints in a Two Person Career: Ideology Division of Labor and Well-Being Among Submarine Officers' Wives," with Dr. Helen Mederer. Journal of Family Issues. 13:313-332. 1992.**
- **The Wampanoag Indians. New York, NY: Chelsea House Publishers, 1989.**
- **"We're Still on Our Traditional Homelands: The Wampanoag Since the 17th Century," in Survival**
- **Strategies. Frank Porter, Ed. Westport, CT: Greenwood Press, 1986.**
- **"17th Century Southern New England Indian Agriculture." Bulletin of the Massaschusetts Archaeological Society. 46:19-34. 1986.**
- **"Land, Politics and Power: The Mohegan Indians in the 17th & 18th Centuries." Man in the Northeast. Vol. 42:9-16. 1985.**

- **"Native Peoples of Southern New England." Exhibit on New England Indians, Haffenreffer Museum of Anthropology, Brown University, 1986.**
- **"Indian Exhibit." Exhibit on Abenaki Indians. Lowell Heritage State Park, Mack Building,**
- **Interpretive Exhibits, Lowell, MA, 1984.**
- **"Survival Strategies: The Wampanoag and the Plymouth Colony Courts." Man in the Northeast**
- **26:81-86. 1983.**

LECTURES & CONFERENCE PAPERS

- **"The View from Western Connecticut: The Not-So Hidden Histories of the Native Peoples" Laurie Weinstein, Western Connecticut State University and Diane Hassan, Danbury Museum and Historical Society for the American Society for Ethnohistory, fall 206**
- **Chair and Organizer for "Of Time and Place: New England Indians during the Colonial Wars of the 18th Century," for the American Society for Ethnohistory, fall 206**
- **"Footprints of the Revolutionary War: Soldiers of Redding, Ct.," with Bethany Morrison and Cosimo Sgarlata. Invited lecture for the Graduate Program in Archaeology at UCONN, Storrs. April 25, 2013.**
- **"Southern New England Indians in the American Revolution," with Diane Hassan, The Society for American Archaeology Meetings, April 2013.**
- **"Active Native Networks in Western Connecticut," in 7th Annual Native American and Archaeology Roundtable at the Institute for American Indian Studies, November 2012.**
- **"The Revolutionary War Indian Soldiers of Redding, Connecticut," The Society for American Archaeology Meetings, April 2012.**
- **Organizer and Chair for "Battlefield and Campsite Archaeology," The Society for American Archaeology Meetings, April 2012.**
- **"Native Americans in Southern New England and Conflict," in 5th Annual Native American-Archaeology Roundtable. Institute for American Indian Studies, October 30th, 2010**
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- **"Overview of the Session and the Archaeology of Middle Encampment," Northeastern Anthropological Association, meetings, March 2009.**
- **Session Organizer and Chair: "Interpreting Indian Land Deeds," American Society for Ethnohistory Meetings, 2004.**
- **"Interpreting Weantinock Indian Land Deeds," American Society for Ethnohistory Meetings, 2004.**
- **"The Weantinock Indians and their Neighbors: Understanding Intercultural Dynamics in the 18th Century," Third Mashantucket Pequot History Conference, September 2002.**

PROFESSIONAL EXPERIENCE

Archaeology

- **Principal Archaeologist, organizer for Field School in archaeology. Field School serves as a center for on-going year-round archaeological and ethnohistorical research for undergraduates. 1993-present. Field School teaches field methodology (survey, testing and excavation) along with lab techniques (cleaning, identification, cataloguing and analysis). Fieldschool is supported by continuing summer grants from CSU-AAUP.**
- **Project Director, Summer Field School in 2007, 2009, 2011 and 2013 focused on a Revolutionary War encampment. Worked with Dr. Bethany Morrison and Dr. Cosimo Sgarlata for comprehensive survey, mapping (GIS) along with some testing and excavation. Nomination of site to the Connecticut State Register of Historic Places. Nomination and report I prepared were accepted and the site is now a State Archaeological Preserve.**
- **Created 18 credit Minor in Cultural Resource Management at WCSU with capstone seminar, internship program, and summer fieldschool.**
- **Chair, elected, Danbury Historic Preservation Commission; as organizer and Chair; under my leadership, Danbury became a Certified Local Government; we received a $2,500. Grant to survey prehistoric site sensitivity in Danbury. This program is no longer active due to bureaucratic malaise.**
- **Took WCSU students to Colorado to work with Dr. Mark Stiger on Folsom Indian site, summer 2005.**
- **CRM work in Texas, Connecticut, Rhode Island and Massachusetts, 1978-1984**

PROFESSIONAL SOCIETIES

- **American Anthropological Association (elected "Fellow," 1993)**
- **American Society for Ethnohistory**
- **Society for American Archaeology**
- **Archaeological Society of Connecticut**
- **Institute for American Indian Studies (elected "Trustee" 1995-2000)**
- **Council for Northeast Historical Archaeology**
- **The Northeastern Anthropological Association (elected Treasurer 1997; Program Chair 1993, Conference Chair, 2000, President-Elect 2000-2001, President 2002, [left Presidency to serve as a visiting Scholar at Western State] Past-President 2003-2005)**

UNIVERSITY SERVICE – Western CT State University

- **Jane Goodall Center for Excellence in Environmental Education, Chair, 2012-present.**
- **Promotion and Tenure Committee, elected 2006, 2006-2008.**
- **Elected Councilor, AAUP, Western Connecticut State University, 2005-2007**
- **Women's Studies, organized and co-directed program, 1994-2002.**
- **CSU Anthropology Collaboration Committee, worked with faculty at all 4 schools to organize and advertise events, programs and classes. Received a "Conversations in the Discipline" grant to host meeting at WCSU, spring 2000. Co-organized the NEAA annual meetings in Hartford, Spring 2001 with CSU and Fairfield University, 1999-2002.**
- **Elected and served as President of University Senate. 1995-1997.**
- **Senator, University Senate, 1994-2000.**
- **Senator, Student Government Organization 1994-Winter 1998/99.**
- **University Planning and Budget Committee, 1995-1997.**
- **President's Cabinet, 1995-1997.**
- **Student Life Committee, 1995-1997.**
- **Advisor to Anthropology Club, 1990-2000.**

Western State College 2002-2003 (On Academic leave)

- **Organized Roots & Shoots, Jane Goodall, Program. Started a Roots & Shoots Club. Attended a Colorado-wide conference at the Denver Museum of Science, March, 2003.**

VOLUNTEER and MISCELLANEOUS

- **Committee member on Institute Animal Care and Use Committee for Norwalk Community College, Vet Tech Program, fall 2014-present**
- **Wildlife rehabilitation at Earthplace, Spring 1998-2002 and 2003-2005.**
- **Veterinary Assistant, Mill Plain Veterinary Hospital, Saturday mornings 2001-2002 and 2003-04.**
- **HOA Board Member, elected 2017 to research "green" lawn care and recycling program**

E. Christian Wells, Ph.D.
Department of Anthropology
University of South Florida
4202 East Fowler Avenue, SOC 107
Tampa, FL 33620-8100 USA
ecwells@usf.edu, 813/974.2337

Dr. E. Christian Wells is Professor of Anthropology, Director of the Center for Brownfields Research and Redevelopment, and Director of the Peace Corps Master's International Program in Applied Anthropology at the University of South Florida (USF). He holds affiliate faculty appointments at USF in the Patel College of Global Sustainability, the Water Institute, the Institute for the Study of Latin America and the Caribbean, and the Florida Institute of Forensic Anthropology and Applied Science.

At USF, he has served as the Founding Director of the Office of Sustainability (2009-2012) and as Deputy Director of the Patel School of Global Sustainability (2010-2012). From 2007-2009, he served as Director of Graduate Studies for the Department of Anthropology and, from 2005-2012, as Director of the USF-Honduras Program through the Office of Education Abroad.

In 2011, Wells was awarded the Jerome Krivanek Distinguished Teacher Award — the highest teaching honor at USF — and the Black Bear Award by the Sierra Club of Tampa Bay "in recognition of outstanding dedication to sustainability and the environment." In 2012, he was awarded the SOL Award by the USF Status of Latinos Presidential Advisory Committee "in recognition of significant and positive contributions to the Hispanic/Latino community."

Wells received his B.A. from Oberlin College and his M.A. and Ph.D. in Anthropology from Arizona State University. He is an applied environmental anthropologist, whose research investigates the environmental legacies of land use, human impacts on soil and water systems, the social and ecological consequences of global tourism, and the influence of environmental worldview on human-environmental relationships. His scholarly interests also include outcome-driven sustainability science, science-policy interactions, place-based engagement pedagogy, and quantitative modeling and simulation of social and environmental science data.

Over the past 20 years, Wells has undertaken ethnographic, archaeological, and geoscience field research in Honduras, Belize, Guatemala, Mexico, Antigua, and the United States with over $4.5 million in funding from the National Science Foundation, the Wenner-Gren Foundation, the National Geographic Society, and other agencies. Currently, he serves as Co-Principal Investigator of a five-year (2013-2017), $3.9 million NSF-funded research project that examines resource recovery technologies and their impact on the relationship between tourism and coastal health in communities throughout the Caribbean.

Wells has authored or edited seven books and journal issues, including *Global Tourism* (with S. Lyon), and more than 100 articles, chapters, and reviews. His teaching emphasizes issues in environmental justice, with seminars in 'Applied Anthropology' and 'Economic Anthropology'.

AREAS OF SPECIALIZATION

- ecological anthropology, economic anthropology, applied anthropology
- environmental archaeology, geoarchaeology, geoforensics
- environmental legacies of land use, emphasizing environmental justice
- human impacts on soil and water systems (nutrient dynamics, heavy metals)
- social and ecological consequences of global tourism
- influence of environmental worldview on human-environmental relationships
- outcome-driven sustainability science and science-policy interactions
- place-based engagement pedagogy and situated learning
- quantitative modeling and simulation of social and environmental science data
- histories and cultures of Mesoamerica, Central America, and the Caribbean

ADMINISTRATIVE APPOINTMENTS

2016+ Director, Peace Corps Master's International Program in Applied Anthropology, University of South Florida

- work closely with U.S. Peace Corps to prepare graduate students in social science methods and theories for international development, focusing on environmental and health issues.
- advise, support, and advocate for graduate students in their training and preparation, Peace Corps service, and as Returned Peace Corps Volunteers.

2015+ Director, Center for Brownfields Research & Redevelopment, University of South Florida

- organize USF faculty with interests/expertise in fields including public health, geology, environmental engineering, environmental science, urban planning and design, and anthropology to participate in brownfields research and redevelopment activities
- work in partnership with public agencies, nonprofits and businesses to bring university-engaged research to bear on brownfields mitigation and associated environmental justice and redevelopment issues.

2010-2012 Deputy Director, Patel School of Global Sustainability, University of South Florida

- maintained USF's compliance with the American College and University Presidents' Climate Commitment (including annual revisions to the USF Climate Action Plan [CAP] and the USF Greenhouse Gas Inventory [GGI]), working closely with and chairing the USF Sustainability Initiative Steering Committee
- coordinated the efforts of Academic Affairs, Student Affairs, Administrative Services, and Business and Finance in the compilation of data to complete the reporting requirements of the Sustainability Tracking, Assessment, and Rating System (STARS) administered by the Association for the Advancement of Sustainability in Higher Education
- provided updates on the progress of the CAP, GGI, and STARS on an annual basis to the University President, Provost, and Board of Trustees

- created, managed, and administered the Student Green Energy Fund (an annual million-dollar auxiliary fund), convening and chairing an advisory council, reviewing and identifying proposals that demonstrate a high return on investment, and monitoring the results of projects aimed at improving energy efficiencies and promoting the application of renewable energy technologies on campus

2009-2012 Founding Director, Office of Sustainability, University of South Florida

- worked closely with the Provost's Office and the Graduate School to launch the worlds' first School of Global Sustainability, taking key leadership roles in planning the school, designing the curriculum, and hiring the inaugural director
- led a number of efforts to gain national recognition for USF, including Second Nature's national Climate Leadership Award in 2012, a top-10 spot on the Sierra Club's magazine's annual list of 'Cool Schools', regular appearances in the Princeton Review's Guide to Green Colleges for four consecutive years, and increasing USF's 'Green College Report Card' from a "D+" to an "A-" in three years
- incorporated sustainability values into the University System Strategic Plan, authored and implemented the first university policy on institutional sustainability, and convened and chaired a university-wide sustainability steering committee that prepared the university's first Greenhouse Gas Inventory and Climate Action Plan
- helped create a $1 million annual Student Green Energy Fund to overhaul energy infrastructure on campus, and raised over $100K in gifts and other Foundation and EBA revenue

2007-2009 Director of Graduate Studies, Department of Anthropology, University of South Florida

- initiated programs, professional training and development workshops, marketing, and policy changes that more than doubled (from ca. 90 to ca. 200) the number of applications received annually
- worked with the faculty to increase student success, as measured by higher MA-to-PhD retention rates and lower time-to-degree rates
- worked with the department chair to create the department's first Graduate Program Manual and to a design and develop a new website for the department

ACADEMIC APPOINTMENTS (USF)

2014+ Professor, Department of Anthropology
2014+ Affiliate Faculty, USF Water Institute
2014+ Affiliate Faculty, Florida Institute of Forensic Anthropology and Applied Science
2010+ Associate Faculty, Patel College of Global Sustainability
2008-2014 Associate Professor, Department of Anthropology (early tenure and promotion granted for "exceptional performance")
2008-2015 Adjunct Faculty, Honors College
2003+ Affiliate Faculty, Institute for the Study of Latin America and the Caribbean
2003-2008 Assistant Professor, Department of Anthropology

PROFESSIONAL PREPARATION

Degrees

2003 Ph.D., Anthropology, Arizona State University. Dissertation: *Artisans, Chiefs, and Feasts: Classic Period Social Dynamics at El Coyote, Honduras*. Committee: Ben A. Nelson (Chair), George L. Cowgill, Barbara L. Stark, Arleyn W. Simon, Edward M. Schortman [Kenyon College], Patricia A. Urban [Kenyon College].

1998 M.A., Anthropology, Arizona State University. Thesis: *Ceramic Production and Microcosmic Organization: The Residential Structure of La Quemada, Northwest Mexico*. Committee: Ben A. Nelson (Chair), George L. Cowgill, Barbara L. Stark.

1996 B.A., Anthropology, Archaeological Studies (with Honors), and Latin American Studies, Oberlin College. Thesis: *A Preliminary Assessment of the Organization of Ceramic Production at La Sierra, Cortés, Honduras: Evidence from the South Group*. Committee: Linda T. Grimm (Chair), Bruce M. Simonson [Geology], Susan Kane [Art], Nicholas P. Dunning [Geography, University of Cincinnati]. Additional coursework in anthropology and archaeology at Boston University, Arizona State University, Kenyon College, and Purdue University.

Study Abroad and Field Schools

1995 Kenyon-Honduras Archaeology and Anthropology Study Abroad Program (Cofradía, Honduras), Kenyon College [supported by a National Science Foundation Research Experiences for Undergraduates Award to E. Schortman and P. Urban]

1994 Ojo Bonito Archaeological Project Field School (St. Johns, Arizona), Arizona State University

1994 Semester Study, undergraduate course work in Archaeology and Anthropology (Boston, Massachusetts), Boston University

Professional Development Workshops

2016 Cultural Consensus Analysis. Society for Anthropological Sciences Workshop, Annual Meetings of the Society for Applied Anthropology, Vancouver, British Columbia, Canada, April 1.

2013 Compelling Writing for Persuasive Grants and Grant Budget Narratives. Summer Grant Writing Workshop, University of South Florida, Tampa, July 16-18.

2011 Sustainability across the Curriculum Leadership Workshop. Association for the Advancement of Sustainability in Higher Education, Emory University, Atlanta, Georgia, January 12-14.

2010 Sustainability Curriculum Convocation Workshop. Annual Meetings of the Association for the Advancement of Sustainability in Higher Education, Denver, Colorado, October 10.

2010 Sustainability Officers Workshop. Annual Meetings of the Association for the Advancement of Sustainability in Higher Education, Denver, Colorado, October 10.

2009 Greenhouse Gas Accounting Workshop. University of Florida TREEO Center, Orlando, Florida, December 3.

Teaching Development Workshops

2013 Interactive Teaching Techniques. Academy for Teaching and Learning Excellence, University of South Florida, Tampa.
2006 Help with Assessing Student's Writing. Center for 21st Century Teaching Excellence, University of South Florida, Tampa.
2004 What is Inquiry-based Learning- Center for 21st Century Teaching Excellence, University of South Florida, Tampa.
2004 Developing Students' Critical Thinking Skills. Center for 21st Century Teaching Excellence, University of South Florida, Tampa.
2003 Creating a Teaching Portfolio. Center for 21st Century Teaching Excellence, University of South Florida, Tampa.
2003 Reflecting Your Course in a Learning-centered Syllabus. Center for 21st Century Teaching Excellence, University of South Florida, Tampa.
2003 Using Blackboard. Academic Computing, University of South Florida, Tampa.
2003 Hybrid Classrooms. Media Services, University of South Florida, Tampa.
1999 Graduate Writing Fellows workshop, Derek Bok Center for Teaching and Learning, Harvard University, Cambridge, Massachusetts.
1997 Developing a Teaching Trunk in Archaeology. Public Education Committee, Annual Meeting of the Society for American Archaeology, Nashville, Tennessee, April 4.

Project Director

2002-2003 Cultural Resource Management Program, Gila River Indian Community (Arizona)

Field Supervisor

2001 Cacaulapa Valley Archaeological Project; Santa Bárbara, Honduras
2000 Cacaulapa Valley Archaeological Project; Santa Bárbara, Honduras
1999 Copán Acropolis Archaeological Project; Copán, Honduras
1999 Piedras Negras Archaeological Project; Petén, Guatemala
1999 Early Copán Acropolis Project; Copán, Honduras
1998 Copán Acropolis Archaeological Project; Copán, Honduras
1998 Piedras Negras Archaeological Project; Petén, Guatemala
1998 Early Copán Acropolis Project; Copán, Honduras
1997 Poggio Colla-Mugello Valley Archaeological Project; Vicchio, Italy
1997 La Quemada-Malpaso Valley Archaeological Project; Zacatecas, Mexico
1996 Center for American Archaeology; Kampsville, Illinois
1995 Upper Little Colorado Prehistory Project; Springerville, Arizona
1995 Naco Valley Archaeological Project; Cortés, Honduras

Field Assistant

1994 Upper Little Colorado Prehistory Project; Springerville, Arizona
1994 Ojo Bonito Archaeological Project; St. Johns, Arizona

Laboratory Supervisor

2000 La Quemada-Malpaso Valley Archaeological Project, Zacatecas, Mexico, and Tempe, Arizona

Laboratory Assistant

2001 La Quemada-Malpaso Valley Archaeological Project, Department of Anthropology, Arizona State University, Tempe

2000 Roosevelt Platform Mound Study Archaeological Project, Archaeological Research Institute, Arizona State University

2000 La Quemada-Malpaso Valley Archaeological Project, Department of Anthropology, Arizona State University, Tempe

1999 Copán Acropolis Archaeological Project, Department of Anthropology, Harvard University, Cambridge, Massachusetts

1999 La Quemada-Malpaso Valley Archaeological Project, Department of Anthropology, Arizona State University, Tempe

1998 NSF-Central Arizona/Phoenix Long-Term Ecological Research Project, Center for Environmental Studies, Arizona State University, Tempe

1998 La Quemada-Malpaso Valley Archaeological Project, Department of Anthropology, Arizona State University, Tempe

1997 AZSITE Archaeological Database Project, Archaeological Research Institute, Arizona State University, Tempe

1997 La Quemada-Malpaso Valley Archaeological Project, Department of Anthropology, Arizona State University, Tempe

1996 AZSITE Archaeological Database Project, Archaeological Research Institute, Arizona State University, Tempe

1996 La Quemada-Malpaso Valley Archaeological Project, Department of Anthropology, Arizona State University, Tempe

1996 Mugello Valley Archaeological Project, Oberlin College, Oberlin, Ohio

1994 Cuello Archaeological Project, Archaeology Laboratory, Department of Archaeology, Boston University, Boston, Massachusetts

1994 Solvieu Archaeological Project, Archaeology Laboratory, Department of Anthropology, Oberlin College, Oberlin, Ohio

1993 Solvieu Archaeological Project, Archaeology Laboratory, Department of Anthropology, Oberlin College, Oberlin, Ohio

Research Fellow

2002 Graduate Research Fellow in Archaeology. Archaeological Research Institute, Department of Anthropology, Arizona State University

2001 Graduate Research Fellow in Archaeometry. Laboratory for Archaeological Chemistry, Department of Anthropology, University of Wisconsin-Madison

Research Intern

2001 Department of Landscape Architecture, Dumbarton Oaks Research Library and Collection, Washington, DC

1999 Collections Department, Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge, Massachusetts
1997 Archaeological Research Institute, Arizona State University, Tempe
1996 Museum Applied Science Center for Archaeology, University of Pennsylvania Museum of Archaeology and Anthropology, Philadelphia, Pennsylvania
1993 Archaeology Department, Cleveland Museum of Natural History, Cleveland, Ohio

TEACHING (G-graduate, U-undergraduate)

Professor, University of South Florida
2016 Advanced Quantitative Methods in Anthropology [G], Applied Anthropology [U/G], Quantitative Methods in Anthropology [G]
2015 Advanced Quantitative Methods in Anthropology [G], Archaeological Theory [G], Quantitative Methods in Anthropology [G], Global Tourism (Honors College) [U], Anthropology of Place [G], Quantitative Methods in Anthropology [G]
2014 Global Tourism [U/G], Quantitative Methods in Anthropology [G]

Associate Professor, University of South Florida
2014 Archaeological Theory [G]
2013 Museum Methods [U/G], Archaeology [U], Foundations of Applied Anthropology [G], Global Tourism (Honors College) [U]
2012 Archaeological Theory [G], Archaeological Field Methods [U], Laboratory Methods in Archaeology [U]
2011 Soils in Archaeological Research [G], Campus Ecology (Honors College) [U], Quantitative Methods in Anthropology [G]
2010 Economic Anthropology [G], People-Planet-Prosperity (Honors College) [U], Archaeological Methods [G]
2009 Advanced Quantitative Methods in Anthropology [G], Soil and Culture (Honors College) [U], Archaeological Methods [G], Mesoamerican Archaeology [U/G], Archaeological Field Methods [U/G], Laboratory Methods in Archaeology [U/G]
2008 Quantitative Methods in Anthropology [G], Dirt (Honors College) [U]

Assistant Professor, University of South Florida
2008 Economic Anthropology [G], Soil and Culture (Honors College) [U], Archaeology [U]
2007 Advanced Quantitative Methods in Anthropology [G], Southwest Archaeology [U/G], Archaeology [U], Mesoamerican Archaeology [U/G]
2006 Foundations of Applied Anthropology [G], Quantitative Methods in Anthropology [G], Quantitative Methods in Anthropology [G], Archaeological Field Methods [U/G], Laboratory Methods in Archaeology [U/G]
2005 Chiefdoms [G], Mesoamerican Archaeology [U/G], Foundations of Applied Anthropology [G], Advanced Quantitative Methods in Anthropology [G], Archaeological Field Methods [U/G], Laboratory Methods in Archaeology [U/G]
2004 Chiefdoms [G], Quantitative Methods in Anthropology [G], Southwest Archaeology [U/G], Archaeology [U]

2003 Archaeology [U], Mesoamerican Archaeology [U/G]

Teaching Associate, Arizona State University
2000 Principles of Archaeology [U]

Teaching Assistant, Arizona State University
1997 Prehispanic Civilizations of Middle America [U]
1995 Archaeological Field Methods [U]

Teaching Assistant, Center for American Archaeology
1996 Archaeological Excavation [high school]

Student Instructor, Oberlin College
1997 Field Methods in Archaeology (Art Department) [U]
1996 Public Education in Cultural/Natural Resources Management (Experimental College) [U]

AWARDS, HONORS, AND CERTIFICATES (*juried)

2014 Certificate of Excellence in Reviewing (2013), Journal of Archaeological Science (in cooperation with the Society for Archaeological Sciences), Elsevier: "in recognition of an outstanding contribution to the quality of the journal"
2013 Keynote lecture presented at the Interdisciplinary Research in Anthropology and the Sciences conference, Washington State University, Pullman
2012* USF SOL Faculty Award, USF Status of Latinos (SOL) Presidential Advisory Committee, University of South Florida: "in recognition of significant and positive contributions to the Hispanic/Latino community"
2012 Last Lecture Series 2012 Keynote Presenter, Housing and Residential Education, University of South Florida
2012* Academic Sabbatical, Fall Semester 2012, Office of the Provost, University of South Florida
2011* Jerome Krivanek Distinguished Teacher Award, University of South Florida 2011* Tampa Bay Sierra Club Black Bear Award, Sierra Club of Tampa Bay: "in recognition of outstanding dedication to sustainability and the environment"
2011* Anthropology Faculty Mentor Award, University of South Florida: "in recognition of outstanding commitment and dedication to graduate student success and exemplifying the qualities of a mentor"
2008 Certificate for Excellence in Mentorship at the Doctoral Level, University of South Florida
2007* Outstanding Undergraduate Teaching Award, University of South Florida
2001* Claude C. Albritton, Jr. Memorial Research Award, Geological Society of America
2000* Society for Archaeological Sciences Poster Award, 32nd International Symposium on Archaeometry
1999 Certificate of Distinction in Promoting Undergraduate Writing, Derek Bok Center for Teaching and Learning, Harvard University
1996* Comfort Starr Award for Excellence in Anthropological Research, Oberlin College

GRANTS AND CONTRACTS

External (Total: $4,689,969)

2016-2017 Research Contract, PI. Department of Anthropology, Tulane University (NSF DDRIG grant awarded to M. Canuto and M. Lamoureux St-Hilaire); $6,000, "The Regal Palace of La Corona: Pragmatic Study of a Political Institution"

2016-2017 Research Contract, PI. Department of Anthropology, Tulane University (internal research award to T. Murakami); $1100, "ICP-MS Analysis of Anthrosols from Tlalancaleca, Puebla, Mexico: Phase II"

2016-2017 Research Contract, PI. Department of Anthropology, University of Chicago (NSF BCS grant awarded to F. Richard); $6,340, "Late Iron Age Soilscape Study of the Siin Region, Senegal: Phase II"

2015-2016 Research Contract, PI. Department of Anthropology, California State University-Chico (internal research award to G. L. Fox); $960, "Analysis of Soils and Sediments from Betty's Hope Plantation, Antigua, West Indies"

2015-2015 Research Grant, PI. Library Travel Research Grant, Center for Latin American Studies, University of Florida; $500, "The Landscape Legacies of Sugar and Rum in Antigua, West Indies"

2014-2015 Research Grant, PI (for K. Fulton, Co-PI). Doctoral Dissertation Improvement Grant Program (SBE BCS Archaeology), National Science Foundation; $29,888, "Neighborhood Identity and Social Practice at Terminal Classic Actuncan, Belize"

2014-2015 Research Grant, PI (E. Koenig, Co-PI). Community Heritage Conservation Program, InHerit; $15,000, "Garifuna Community-based Heritage Conservation in Seine Bight, Belize"

2014-2015 Research Contract, PI. Department of Anthropology, University of Chicago (NSF BCS grant awarded to F. Richard); $4,340, "Late Iron Age Soilscape Study of the Siin Region, Senegal: Phase I"

2014-2015 Research Contract, PI. Department of Anthropology, California State University-Chico (internal research award to G. L. Fox); $1,564, "Analysis of Soils and Sediments from Betty's Hope Plantation, Antigua, West Indies"

2014-2015 Research Contract, PI. Department of Anthropology, Tulane University (internal research award to T. Murakami); $1455, "ICP-MS Analysis of Anthrosols from Tlalancaleca, Puebla, Mexico: Phase I"

2014-2015 Research Contract, PI. Department of Geography and Anthropology, Louisiana State University (Sigma Xi Grant-in-Aid of Research award to R. Watson); $825, "Chemical Analysis of Salt Work Soils from Archaeological Deposits in Paynes Creek National Park, Belize"

2013-2017 Research Grant, Co-PI (J. Mihelcic, PI). PIRE (OISE), National Science Foundation; $3,920,644, "Context Sensitive Implementation of Synergistic Water-Energy Systems"

2013-2015 Research Grant, Co-PI (E. Kimmerle, PI). Research, Evaluation, and Development Program, National Institute of Justice; $423,528, "Anthropological Methods for DNA Analysis of the Missing and Unidentified Children Located at the Former Arthur G. Dozier School for Boys, Mariana, Florida"

2013-2014 Research Contract, Co-PI (E. Kimmerle, PI). Florida State Legislative Appropriation; $190,000, "Documentation and Analysis of the Historic Boot Hill Cemetery, Arthur G. Dozier School for Boys, Marianna, Florida"

2013-2014 Research Contract, PI. Department of Anthropology, Washington University-St. Louis (NSF DDRIG grant awarded to D. Mixter); $5,580, "Geochemical Assay of Plaster Samples from Actuncan, Belize"

2013-2014 Research Contract, PI. Environmental Studies, Sewanee: The University of the South (internal research award to S. Sherwood); $320, "Chemical Study of Sediments from the Southern Cumberland Plateau"

2012-2013 Research Grant, Co-PI (S. Landry, PI). Urban and Community Forestry Program, Florida Forestry Service; $19,404, "Tools and Training to Support Volunteer-Based Tree Inventories in Florida Communities"

2012-2013 Research Contract, PI. Department of Anthropology, University of Alabama (NSF BCS grant awarded to L. LeCount); $4,363, "Chemical Characterization of Plaster Surfaces at Actuncan, Belize"

2012-2013 Research Contract, PI. Department of Anthropology, University of New Hampshire (NSF BCS grant awarded to M. Howey); $4,100, "Anthrosol Chemistry of Sediments from Douglas Lake, Tennessee"

2012-2013 Research Contract, PI. Department of Geography and Anthropology, Louisiana State University (NSF DDRIG grant awarded to H. McKillop and E. Sills); $2,750, "Chemical Analysis of Estuarine Lagoon Sediments from Archaeological Deposits in Paynes Creek National Park, Belize"

2011-2012 Research Contract, PI. Department of Anthropology, University of Alabama (NSF BCS grant awarded to L. LeCount); $4,536, "Chemical Analysis of Residential Plaster Surfaces at Actuncan, Belize: Structure 40 and Structure 61"

2011-2012 Research Contract, PI. School of Archaeology and Ancient History, University of Leicester (internal research grant from the Field Museum of Natural History awarded to R. Salisbury); $1,500, "ICP-MS Analysis of Sediments from the Körös Region, Hungary"

2010-2011 Research Contract, PI. Department of Anthropology, University of Alabama (NSF BCS grant awarded to L. LeCount); $4,320, "Chemical Analysis of Terminal Classic Soil Surfaces at Group 1 Residential Plazuela, Actuncan, Belize"

2009-2010 Research Contract, PI. Department of Anthropology, Wayne State University (Wenner-Gren grant awarded to T. Bray); $1,500, "Multi-elemental Analysis of Soils from Inca-Caranqui, Ecuador"

2009-2010 Research Contract, PI. Department of Anthropology, State University of New York at Buffalo (NSF DDRIG grant awarded to E. Zubrow and R. Salisbury); $9,195, "Soil Chemical Analysis of Soils from Körös, Hungary"

2008-2009 Research Contract, PI. Department of Anthropology, Sewanee: The University of the South (research award from MRS Consultants to S. Sherwood); $150, "ICP Analysis of Geoarchaeological Samples from Alabama"

2007-2009 Research Grant (Gr. 07015), PI. Foundation for the Advancement of Mesoamerican Studies; $3,000, "Determining the Chronological Significance of an Ulúa-style Marble Vase from Northwest Honduras"

2007-2008 Research Contract, PI. Midwest Archeological Center, National Park Service; $1,000 (internal research award to W. Hunt), "Geochemical Analysis of Soils from Prehistoric Fishing Camps, Sitka National Historical Park, Alaska"

2007-2008 Research Contract, PI. Institute of Marine Science, University of Alaska-Fairbanks; $360 (internal research award to N. Misarti), "Chemical Analysis of Soils from Prehistoric Aleut Sites along the Gulf of Alaska"

2005-2008 Research Grant (Gr. 7851-05), PI (K. Davis-Salazar, Co-PI). Committee for Research and Exploration, National Geographic Society; $19,360, "Palmarejo Community Archaeological Project"

2005-2006 Research Contract, PI. Southeast Archaeological Center, National Park Service; $780 (internal research award to D. G. Anderson), "Soil Chemical Analysis of Mound A, Shiloh Mound Complex, Tennessee"

2004-2005 Research Contract, PI. Southeast Archaeological Center, National Park Service; $3,260 (internal research award to D. G. Anderson), "Soil Chemical Analysis of Mound A, Shiloh Mound Complex, Tennessee"

2001-2003 Research Grant (BCS-0108742), Co-PI (B. Nelson, PI). Doctoral Dissertation Improvement Grant Program (SBE BCS Archaeology), National Science Foundation; $11,998, "Communal Feasting and the Social Order at Late Classic El Coyote, Northwest Honduras"

2001-2003 Research Grant (Gr. 6810), PI. Wenner-Gren Foundation for Anthropological Research; $10,460, ""Communal Feasting and the Social Order at El Coyote, Northwestern Honduras"

1997-1998 Research Grant, PI. Sigma Xi, The Scientific Research Society; $600, "Modeling Intraregional Interaction Through Ceramic Technology: Social Organization in the Prehispanic Malpaso Valley, Northwestern Mexico"

1997-1997 Travel Grant, PI. Archeology Division, American Anthropological Association; $250, "Modeling Intraregional Interaction Using Ceramic Technology: Prehispanic Social Organization in the Malpaso Valley, Northwestern Mexico"

<u>Internal (Total: $140,067)</u>

2016 Summer Research Grant, PI. Humanities Institute, University of South Florida; $1,490, "The Heritage of Sugar and Rum in Antigua, West Indies"

2016 Research and Development Grant, PI. College of Arts and Sciences Office of Research and Scholarship, University of South Florida; $1,828, "Tampa Bay Healthfields Partnership for Environmental Justice"

2015 Faculty Travel Grant, PI. Internal Awards Program, College of Arts and Sciences, University of South Florida; $1,500, "26th International Congress for Caribbean Archaeology, St. Maarten"

2015 Faculty Travel Grant, PI. Exeter/USF Humanities Exchange Program, Humanities Institute, University of South Florida; $3,000, "Research Partnerships in Environmental Archaeology at the University of Exeter, UK"

2015 Equipment Grant, Co-PI (T. Pluckhahn, PI), One-to-one Matching Program, Office of Research and Innovation, University of South Florida; $6,657, "Gradiometer for Shallow Geophysical Applications in Archaeology and Forensics"

2014 Research That Matters Faculty-Community Partner Grant, PI (E. S. Koenig, Co-PI). Office of Community Engagement and Partnerships, University of South Florida; $8,000, "Garifuna Community-based Heritage Research in Seine Bight, Belize"

2014 Undergraduate Research Scholars Award. Honors College, University of South Florida; $150, "Mentoring Undergraduate Honors Students"

2013 Research and Development Grant, PI. College of Arts and Sciences Internal Awards Review Committee, University of South Florida; $1,500, "NSF Project Pilot Study: AMS Dating of a Sediment Core"

2013 Research and Scholarship Grant, PI. College of Arts and Sciences, University of South Florida; $1,500, "78th Annual Meeting of the Society for American Archaeology, Honolulu, Hawaii"

2012 Summer Research Grant, PI. Humanities Institute, University of South Florida; $4,380, "Heritage Tourism on Roatán Island, Honduras"

2012 Publications Grant, PI. University Publications Council, University of South Florida; $930, "Global Tourism: Cultural Heritage and Economic Encounters"

2012 Undergraduate Research Scholars Award. Honors College, University of South Florida; $400, "Mentoring Undergraduate Honors Students"

2011 Undergraduate Research Scholars Award. Honors College, University of South Florida; $600, "Mentoring Undergraduate Honors Students"

2009 Conference Coordination Grant, PI. Faculty Development Committee, University of South Florida; $500, "Annual Meeting of the Society for Economic Anthropology—Contested Economies: Global Tourism and Cultural Heritage"

2009 Research and Development Grant, PI. Faculty Development Committee, University of South Florida; $980, "Analytical Infrastructure Support for Attracting NSF Subcontracts"

2009 Research Grant, PI. Institute for the Study of Latin America and the Caribbean, University of South Florida; $1,300, "A Cultural Heritage Resource Assessment for Roatán, Honduras"

2009 Undergraduate Research Scholars Award. Honors College, University of South Florida; $200, "Mentoring Undergraduate Honors Students"

2008 Summer Research Grant, PI. Humanities Institute, University of South Florida; $4,883, "The Cornfield Spirits—Ritual, Economy, and Environment in Mesoamerica"

2007 Innovative Teaching Grant, Co-PI (K. Davis-Salazar, PI). Center for 21st Century Teaching Excellence, University of South Florida; $10,000, "Ceramics Teaching Infrastructure"

2007 Faculty Matching International Travel Grant, PI. Internal Awards Program, College of Arts and Sciences, University of South Florida; $1,500, "Feasibility Study for Honduras NSF-REU"

2007 Faculty International Travel Grant, PI. Division of Research Grants, University of South Florida; $2,143, "73rd Annual Meeting of the Society for American Archaeology, Vancouver, British Columbia, Canada"

2007 Publications Grant, PI. University Publications Council, University of South Florida; $1,550, "Mesoamerican Ritual Economy: Archaeological and Ethnological Perspectives"

2007 Undergraduate Research Scholars Award. Honors College, University of South Florida; $400, "Mentoring Undergraduate Honors Students"

2006 Undergraduate Research Development Grant, PI. Office of Undergraduate Research, University of South Florida; $10,000, "Mesoamerican Archaeology Field School Development"

2006 Research Grant, PI. Institute for the Study of Latin America and the Caribbean, University of South Florida; $1,000, "Applying Archaeology to Rural Development in Honduras"

2006 Research and Development Grant, PI. Faculty Development Committee, University of South Florida; $900, "Pollen Analysis of an Archaeological Deposit"

2005 Program Enhancement Grant, PI. Tampa Library, University of South Florida; $3,000, "Museum Publications – Mesoamerican Archaeology"

2005 Research and Development Grant, PI. Faculty Development Committee, University of South Florida; $500, "Bioarchaeological Analysis of an Ulúa Tomb"

2005 Undergraduate Research Scholars Award, PI. Honors College, University of South Florida; $200, "Mentoring Undergraduate Honors Students"

2004 New Researcher Grant, PI (K. Davis-Salazar, Co-PI). Office of Research and Scholarship, University of South Florida; $9,950, "Palmarejo Community Archaeological Project"

2004 Teaching Enhancement Grant, PI. Center for 21st Century Teaching Excellence, University of South Florida; $1,955, "Creating an Archaeology Teaching Collection of Artifacts"

2004 Research and Development Grant, PI. Faculty Development Committee, University of South Florida; $500, "Archaeology of Prehispanic Agricultural Systems in Western Honduras"

2004 Faculty International Travel Grant, PI. Division of Research Grants, University of South Florida; $936, "69th Annual Meeting of the Society for American Archaeology, Montreal, Quebec, Canada"

2003 Research Grant, PI (K. Davis-Salazar, Co-PI). Latin American and Caribbean Studies Program, University of South Florida; $830, "Palmarejo Community Archaeological Project"

2003 Program Enhancement Grant, PI. Tampa Library, University of South Florida; $3,500, "Mesoamerican History, Anthropology, and Archaeology"

2003 Undergraduate Research Scholars Award. Honors College, University of South Florida; $200, "Mentoring Undergraduate Honors Students"

2003 Research Overhead Start-up Funds, PI. Department of Anthropology, University of South Florida; $47,000, "Research Infrastructure—Mesoamerican Archaeology Laboratory"

2002 Travel Grant, PI. Graduate College, Arizona State University; $300, "Research at El Coyote, Honduras"

2002 Travel Grant, PI. Department of Anthropology, Arizona State University; $200, "Research at El Coyote, Honduras"

2001 Research Grant, PI. Department of Anthropology, Arizona State University; $655, "Research at El Coyote, Honduras"

2000 Travel Grant, PI. Department of Anthropology, Arizona State University; $100, "Research at El Coyote, Honduras"

1999 Research Grant, PI. Graduate College, Arizona State University; $800"Research at Piedras Negras, Guatemala"

1999 Grant-in-Aid of Research, PI. Arizona State University Chapter of Sigma Xi, The Scientific Research Society; $300, "Research at Piedras Negras, Guatemala"
1999 Travel Grant, PI. Center for Latin American Studies, Arizona State University; $800, "Travel to Piedras Negras, Guatemala"
1999 Travel Grant, PI. Department of Anthropology, Arizona State University; $200, "Travel to Piedras Negras, Guatemala"
1998 Travel Grant, PI. Department of Anthropology, Arizona State University; $200, "Travel to Piedras Negras, Guatemala"
1997 Research Grant, PI. Department of Anthropology, Arizona State University; $500, "Malpaso Valley Archaeological Research, Mexico"
1997 Grant-in-Aid of Research, PI. Arizona State University Chapter of Sigma Xi, The Scientific Research Society; $150, "SEM-EDX Analysis of Pottery from La Quemada"

FUNDRAISING

External (Total: $68,657)
2009-2012 Going Green Expo Fund (auxiliary/EBA account). Office of Sustainability, University of South Florida; $64,357
2009-2012 USF Green Fund (Foundation account). Office of Sustainability, University of South Florida; $4,300

Internal (Total: $9,855)
2015 Conference Support Award. Office of Research, University of South Florida; $800, "Trevor Purcell Memorial Lecture Series: Managing Cultural Heritage in Small Island Developing States—The View from Antigua and Barbuda, West Indies"
2015 Conference Support Award. Humanities Institute, University of South Florida; $200, "Trevor Purcell Memorial Lecture Series: Managing Cultural Heritage in Small Island Developing States—The View from Antigua and Barbuda, West Indies"
2014 Conference Support Award. Office of Research, University of South Florida; $1,000, "Research & Remembrance: 100 Years after the Fatal Fire at Dozier"
2014 Conference Support Award. USF World, University of South Florida; $800, "Research & Remembrance: 100 Years after the Fatal Fire at Dozier"
2014 Conference Support Award. Institute for Black Life, University of South Florida; $250, "Research & Remembrance: 100 Years after the Fatal Fire at Dozier"
2014 Conference Support Award. Humanities Institute, University of South Florida; $750, "Research & Remembrance: 100 Years after the Fatal Fire at Dozier"
2014 Conference Support Award. School of Mass Communication, University of South Florida; $500, "Research & Remembrance: 100 Years after the Fatal Fire at Dozier"
2014 Conference Support Award. Department of History, University of South Florida; $500, "Research & Remembrance: 100 Years after the Fatal Fire at Dozier"
2014 Conference Support Award. Department of Anthropology, University of South Florida; $300, "Research & Remembrance: 100 Years after the Fatal Fire at Dozier"

2010 Conference Support Award. Patel School of Global Sustainability, University of South Florida; $250, "Annual Meeting of the Society for Economic Anthropology—Contested Economies: Global Tourism and Cultural Heritage"
2010 Conference Support Award. Department of Anthropology, University of South Florida; $250, "Annual Meeting of the Society for Economic Anthropology—Contested Economies: Global Tourism and Cultural Heritage"
2010 Conference Support Award. Humanities Institute, University of South Florida; $100, "Annual Meeting of the Society for Economic Anthropology—Contested Economies: Global Tourism and Cultural Heritage"
2009 Lecture Series Award. Institute for the Study of Latin America and the Caribbean, University of South Florida; $375, "Archaeology, National Identity, and the Coup in Honduras: The Role of the Ancient Maya"
2006 Lecture Series Grant, PI. Institute for the Study of Latin America and the Caribbean, University of South Florida; $500, "The Sacred Realm of the Chichimeca: Ritual Behavior in Prehispanic Chihuahua, Mexico"
2005 Lecture Series Grant, PI. Latin American and Caribbean Studies Program, University of South Florida; $250, "Sea Level Rise and Ancient Maya Civilization"
2005 Conference Support Award. Research Office, University of South Florida; $1,000, "Southeast Conference on Mesoamerican Archaeology and Ethnohistory"
2005 Conference Support Award. College of Arts and Sciences Office of Research and Scholarship, University of South Florida; $500, "Southeast Conference on Mesoamerican Archaeology and Ethnohistory"
2005 Conference Support Award. Humanities Institute, University of South Florida; $500, "Southeast Conference on Mesoamerican Archaeology and Ethnohistory"
2005 Conference Support Award. Latin American and Caribbean Studies Program, University of South Florida; $500, "Southeast Conference on Mesoamerican Archaeology and Ethnohistory"
2004 Lecture Series Grant, PI. Latin American and Caribbean Studies Program, University of South Florida; $530, "The View from the Edge: Modeling Core-Periphery Interaction in Prehistoric Southeast Mesoamerica"

CURRENT RESEARCH

Director
2015+ Center for Brownfields Research and Redevelopment, University of South Florida
2003+ Laboratory for Anthropogenic Soils Research, University of South Florida

Principal Investigator
2014+ Landscape Legacies of Sugar and Rum, Antigua, West Indies (with A. R. Tricarico)
2014+ Garifuna Community Heritage Museum, Seine Bight, Belize (with E. S. Koenig)

Co-Principal Investigator
2013+ Context-sensitive Implementation of Synergistic Water-Energy Systems: Belize and the U.S. Virgin Islands (with J. R. Mihelcic [PI], M. A. Trotz, and C. A. McKayle)

2012+ Archaeological and Forensic Investigations at the Former Arthur G. Dozier School for Boys, Marianna, Florida (with E. H. Kimmerle [PI] and A. T. Jackson)

Research Associate

2014+ Betty's Hope Archaeological Project and Field School, Antigua (G. L. Fox, PI)

2012+ Actuncan Archaeological Project, Belize (L. J. LeCount, PI)

PUBLICATIONS (*peer-reviewed)

Works Under Review and In Preparation

n.d.* Research and Remembrance: A Century after the Fatal Fire at the Dozier School for Boys. *American Anthropologist*, under review. (A. T. Jackson, E. H. Kimmerle, E. C. Wells)

n.d.* Chemical Signatures of Ancient Activities at Chan b'i – A Submerged Maya Salt Works, Belize. *Archaeological and Anthropological Sciences*, under review. (E. C. Sills, H. McKillop, and E. C. Wells)

n.d.* Agroindustrial Soilscapes in the Caribbean: A Geochemical Perspective from Betty's Hope, Antigua. *Environmental Archaeology*, under review. (E. C. Wells, C. K. Waters, A. R. Tricarico, and G. L. Fox)

n.d.* Geoarchaeology of Ritual Behaviour and Sacred Places. Special issue of *Archaeological and Anthropological Sciences*, in preparation (C. I. Roos and E. C. Wells, Guest Editors)

n.d.* Geoarchaeology of Ritual Behaviour and Sacred Places: An Introduction. In Geoarchaeology of Ritual Behaviour and Sacred Places, edited by C. I. Roos and E. C. Wells. Special issue of *Archaeological and Anthropological Sciences*, in preparation. (C. I. Roos and E. C. Wells)

n.d.* Field Methods in Archaeology. Section (43 entries) in *International Encyclopedia of Archaeological Sciences*, S. L. López Varela, Editor-in-Chief. Wiley-Blackwell, Hoboken, New Jersey, in preparation. (E. C. Wells, Associate Editor)

n.d.* The Landscape Legacies of Sugar and Rum: An Historical-Ecological Perspective from Betty's Hope. In *Plowing Paradise: the Archaeology of Betty's Hope Plantation, Antigua*, edited by G. L. Fox. University Press of Florida, Gainesville, in preparation. (E. C. Wells, S. M. Pratt, and A. R. Tricarico)

n.d.* The Royalization of Roatán. In *New Definitions of Southeastern Mesoamerica: Indigenous Interaction, Resilience and Change*, edited by W. A. Goodwin, E. Johnson, and A. J. Figueroa, in preparation. (L. D. Mihok and E. C. Wells)

Monographs and Edited Works

2014 Archaeological Science. Section (37 entries) in *Encyclopedia of Global Archaeology*, C. Smith, Editor-in-Chief. Springer-Verlag, Heidelberg, Germany. (E. C. Wells and A. W. Simon, Section Editors)

2012* *Global Tourism: Cultural Heritage and Economic Encounters*. Society for Economic Anthropology Monograph Series. AltaMira Press, Lanham, Maryland. (S. Lyon and E. C. Wells, Editors)

Reviewed by K. M. Woosnam (2012) *Choice Magazine* 50(2):323, G. Wall (2013) *Journal of Heritage Tourism* 8(4):364-365, M. Y. Fiedler (2014) *International Social Science Review* 89(1):13.

2008* *Dimensions of Ritual Economy*. Special issue of *Research in Economic Anthropology*, Volume 27. Reprinted in paperback, 2012. (E. C. Wells and P. A. McAnany, Guest Editors)

2007* *Mesoamerican Ritual Economy: Archaeological and Ethnological Perspectives*. Mesoamerican Worlds Series. University Press of Colorado, Boulder. (E. C. Wells and K. L. Davis-Salazar, Editors)

Reviewed by J. A. Hendon (2008) *American Anthropologist* 110(4):532-533, C. C. Kolb (2009) *The Americas* 66(2):264-265, H. P. Pollard (2009) *The Historian* 71(4):868-869

2007* Advances in Geoarchaeological Approaches to Anthrosol Chemistry, Part I: Agriculture. Special issue of *Geoarchaeology: An International Journal*, Volume 22, Number 3. (E. C. Wells and R. E. Terry, Guest Editors)

2007* Advances in Geoarchaeological Approaches to Anthrosol Chemistry, Part II: Activity Area Analysis. Special issue of *Geoarchaeology: An International Journal*, Volume 22, Number 4. (E. C. Wells and R. E. Terry, Guest Editors)

2006* *From Hohokam to O'odham: The Protohistoric Occupation of the Middle Gila River Valley, Central Arizona*. Anthropological Research Papers, Number 3. Cultural Resource Management Program, Gila River Indian Community, Sacaton, Arizona. Distributed by the University of Arizona Press, Tucson.

Reviewed by D. R. Abbott (2008) *SAS Bulletin* 31(3):29-30

2002 La Quemada, A Monument on the Mesoamerican Frontier. Special Issue of *Archaeology Southwest*, Volume 16, Number 1. (B. A. Nelson and E. C. Wells, Guest Editors)

<u>Journal Articles and Book Chapters</u>

2016* The Grandest Challenge of All: The Role of Environmental Engineering to Achieve Sustainability in the World's Developing Regions. *Environmental Engineering Science* 20, in press. (J. R. Mihelcic, C. C. Naughton, M. E. Verbyla, Q. Zhang, R. W. Schweitzer, S. M. Oakley, E. C. Wells, and L. M. Whiteford)

2016* Culture, Power, History: Implications for Understanding Global Environmental Change. In *Oxford Handbook of Historical Ecology and Applied Archaeology*, edited by C. Isendahl and D. Stump. Oxford University Press, Oxford, in press.

2016 Reclaiming Development: Community-based Heritage Conservation and University-engaged Research in Seine Bight, Belize. *Research Reports in Belizean History and Anthropology*, in press (E. S. Koenig, E. C. Wells, and S. L. Garcia)

2016* Geochemical Characterization of Inorganic Residues on Plaster Floors from a Maya Palace Complex at Actuncan, Belize. *Journal of Archaeological Science: Reports* 5:453-464. (L. J. LeCount, E. C. Wells, T. R. Jamison, and D. W. Mixter)

2016* The Impacts of Tourism Development on Perceptions and Practices of Sustainable Wastewater Management on the Placencia Peninsula, Belize. *Journal of Cleaner Production* 111:430-441. (E. C. Wells, R. K. Zarger, L. M. Whiteford, J. R. Mihelcic, E. S. Koenig, and M. R. Cairns)

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2012 Chemical Analysis of Residential Plaster Surfaces at Actuncan, Belize: Structure 40 and Structure 61. Report submitted to Lisa J. LeCount, Department of Anthropology, University of Alabama, Tuscaloosa, Alabama. (K. A. Rothenberg and E. C. Wells)

2012 University of South Florida Greenhouse Gas Emissions Inventory, FY 2009-2010. Reported submitted to the American College and University Presidents' Climate Commitment, Second Nature, Boston, Massachusetts. (E. C. Wells, Editor)

2011 Millennial Impacts of Slash Fires on Nutrient Cycling in Neotropical Anthrosols. White paper prepared for the Pyrogeography Working Group, National Center for Ecological Analysis and Synthesis, Santa Barbara, California.

2011 Proyecto Roatán: Informe preliminar, segunda temporada. Report submitted to the Instituto Hondureño de Antropología e Historia, Tegucigalpa, Honduras. (E. C. Wells and L. D. Mihok)

2011 Chemical Analysis of Terminal Classic Soil Surfaces at Group 1 Residential Plazuela, Actuncan, Belize. Report submitted to Lisa J. LeCount, Department of Anthropology, University of Alabama, Tuscaloosa, Alabama. (K. A. Rothenberg and E. C. Wells)

2010 University of South Florida Campus Tree Care Plan. Reported submitted to the Tree Campus USA Program, Arbor Day Foundation, Nebraska City, Nebraska. (E. C. Wells, Editor)

2010 Multi-elemental Analysis of Soils from Inca-Caranqui, Ecuador. Reported submitted to Tamara L. Bray, Department of Anthropology, Wayne State University, Detroit, Michigan.

2010 Chemical Study of Soils from a Copper Processing Workshop at El Coyote, Northwest Honduras. Report submitted to Patricia A. Urban, Department of Anthropology, Kenyon College, Gambier, Ohio.

2010 University of South Florida Climate Action Plan. Reported submitted to the American College and University Presidents' Climate Commitment, Second Nature, Boston, Massachusetts. (E. C. Wells, Editor)

2009 Proyecto Roatán: Informe preliminar, primera temporada. Report submitted to the Instituto Hondureño de Antropología e Historia, Tegucigalpa, Honduras. (E. C. Wells, A. J. Figueroa, and W. A. Goodwin)

2009 Project Roatán Archaeological Field School Manual. Unpublished report on file, Department of Anthropology, University of South Florida, Tampa.

2008 Informe de investigación preliminar de El Antigual, Isla Roatán. Report submitted to the Instituto Hondureño de Antropología e Historia, Tegucigalpa, Honduras.

2008 Proyecto Arqueológico Comunidad Palmarejo: informe preliminar, quinta temporada. Report submitted to the Instituto Hondureño de Antropología e Historia, Tegucigalpa, Honduras. (E. C. Wells, K. L. Davis-Salazar, and J. E. Moreno Cortés)

2007 Scientific Report: Forensic Soil Analysis for TTPD File No. 06-0000030. Report submitted to the Temple Terrace Police Department, Temple Terrace, Florida. (E. C. Wells and E. H. Kimmerle)

2007 Proyecto Arqueológico Comunidad Palmarejo: informe preliminar, cuarta temporada. Report submitted to the Instituto Hondureño de Antropología e Historia, Tegucigalpa, Honduras. (K. L. Davis-Salazar, J. E. Moreno Cortés, and E. C. Wells)

2007 Final Report for Grant 07015, "Determining the Chronological Significance of an Ulúa-style Marble Vase from Northwest Honduras." Report submitted to the Foundation for the Advancement of Mesoamerican Studies, Inc., Crystal River, Florida.

2007 Final Report for Grant 7851-05, "Palmarejo Community Archaeological Project." Report submitted to the National Geographic Society, Washington, DC. (E. C. Wells and K. L. Davis-Salazar)

2006 Proyecto Arqueológico Comunidad Palmarejo: informe preliminar, tercera temporada. Report submitted to the Instituto Hondureño de Antropología e Historia, Tegucigalpa, Honduras. (E. C. Wells, J. E. Moreno Cortés, and K. L. Davis-Salazar)

2005 Proyecto Arqueológico Comunidad Palmarejo: informe preliminar, segunda temporada. Report submitted to the Instituto Hondureño de Antropología e Historia, Tegucigalpa, Honduras. (K. L. Davis-Salazar, E. C. Wells, and J. E. Moreno Cortés)

2005 Soil Chemical Analysis of Mound A, Shiloh Mound Complex, Tennessee. Report submitted to the Southeast Archaeological Center, National Park Service, Tallahassee, Florida.

2005 Palmarejo Community Archaeological Project Field School Manual. Unpublished report on file, Department of Anthropology, University of South Florida, Tampa. (E. C. Wells and K. L. Davis-Salazar)

2004 Proyecto Arqueológico Comunidad Palmarejo: informe preliminar, primera temporada. Report submitted to the Instituto Hondureño de Antropología e Historia, Tegucigalpa, Honduras. (E. C. Wells, K. L. Davis-Salazar, and J. E. Moreno Cortés)

2003* The Archaeology of Dry-Farming Agrosystems in the Middle Gila River Basin, Central Arizona. Pima-Maricopa Irrigation Project Technical Report No. 2001-07. Cultural Resource Management Program, Gila River Indian Community, Sacaton, Arizona.

2003* Toward Understanding the Use, Management, and Meaning of Landscapes between Villages in the Middle Gila River Valley, Arizona. Pima-Maricopa Irrigation Project Technical Report No. 2003-06. Cultural Resource Management Program, Gila River Indian Community, Sacaton, Arizona. (E. C. Wells, G. E. Rice, and J. C. Ravesloot)

2003* A Chronology Research Context for Archaeological Materials on the Gila River Indian Community, Arizona. Pima-Maricopa Irrigation Project Technical Report No. 2003-02. Cultural Resource Management Program, Gila River Indian Community, Sacaton, Arizona. (B. S. Eiselt and E. C. Wells)

2003* Public Outreach Implementation Plan for the Gila River Indian Community-Cultural Resource Management Program. Pima-Maricopa Irrigation Project Technical Report No. 2003-07. Cultural Resource Management Program, Gila River Indian Community, Sacaton, Arizona. (B. L. Shears, D. Y. Begay, and E. C. Wells)

2003* A Cultural Resources Monitoring and Data Recovery Plan for Proposed Water Line Replacement in District 3, Gila River Indian Community, Pinal County, Arizona. Cultural Resource Management Program Technical Report No. 2003-02. Cultural Resource Management Program, Gila River Indian Community, Sacaton, Arizona.

2002 Final Report of Archaeological Investigations at GR-904, A Soho Phase Hohokam Site in the Casa Blanca Settlement Complex, Gila River Indian Community, Pinal County, Arizona. Cultural Resource Management Program Technical Report No. 2002-21. Cultural Resource Management Program, Gila River Indian Community, Sacaton, Arizona. (D. Burden and E. C. Wells)

2002* National Register of Historic Places Eligibility Assessment of 62 Sites in the Santan Management Area, Pima-Maricopa Irrigation Project, Gila River Indian Community, Pinal County, Arizona. Pima-Maricopa Irrigation Project Technical Report No. 2002-15. Cultural Resource Management Program, Gila River Indian Community, Sacaton, Arizona.

2002* Protohistoric Settlement in the Gila River Indian Community, Arizona. Pima-Maricopa Irrigation Project Technical Report No. 2002-14. Cultural Resource Management Program, Gila River Indian Community, Sacaton, Arizona.

2002* A Cultural Resources Assessment of the Lone Butte Management Area, Pima-Maricopa Irrigation Project, Gila River Indian Community, Arizona. Pima-Maricopa Irrigation Project Report No. 12. Cultural Resource Management Program, Gila River Indian Community, Sacaton, Arizona. (E. C. Wells and R. L. Greenspan)

2002 Material and Chemical Residues of Prehispanic Plaza Activities at El Coyote, Northwest Honduras. HTML publication submitted to A. W. Simon for the 2002 Graduate Research Fellowship in Archaeology, Archaeological Research Institute, Arizona State University, Tempe.

2002 Final Report for Award No. 0108742, Doctoral Dissertation Improvement Grant in Archaeology: “Communal Feasting and the Social Order at Late Classic El Coyote, Northwestern Honduras”. Report submitted to the National Science Foundation, Arlington, Virginia.

2002 Final Report for GR. 6810, Individual Research Grant in Archaeology: "Communal Feasting and the Social Order at El Coyote, Northwestern Honduras." Report submitted to the Wenner-Gren Foundation for Anthropological Research, New York, New York.

2001 Proyecto Arqueológico Valle de Cacaulapa: Preliminary Report, 2001 Season. Report submitted to the Instituto Hondureño de Antropología e Historia, Tegucigalpa, Honduras. (P. A. Urban, E. M. Schortman, and E. C. Wells)

2000 Proyecto Arqueológico Valle de Cacaulapa: Preliminary Report, 2000 Season. Report submitted to the Instituto Hondureño de Antropología e Historia, Tegucigalpa, Honduras. (P. A. Urban, M. T. Ausec, E. M. Schortman, W. McFarlane, E. C. Wells, and M. Stockett)

2000 Ceramic Fabrics of the Decorated Pottery from the Malpaso Valley, Northwest Mexico. Report submitted to B. A. Nelson, Director, La Quemada-Malpaso Valley Archaeological Project.

1999 Excavations in Margarita Structure and Margarita Tomb, Copán, 1999. Report submitted to R. J. Sharer, Director, Early Copán Acropolis Project.

1999 PN33: investigaciones en el conjunto residencial urbano, Cuadrante U. In *Proyecto Arqueológico Piedras Negras: Informe preliminar No. 3, tercera temporarda, 1999*, edited by H. L. Escobedo and S. D. Houston, pp.65-104. Report submitted to the Instituto de Antropología e Historia, Guatemala.

1999 Las investigaciones en la estructura "Híjole," 10L-26, Copán: informe preliminar de la temporada del campo, 1999. Report submitted to W. L. Fash, Director, Proyecto Arqueológico Acrópolis Copán. (E. C. Wells and E. Plant)

1998 Excavations of "Estructura Hap" and "Piso Cab," 10L-16, Copán, 1998. Report submitted to R. J. Sharer, Director, Early Copán Acropolis Project.

1998 PN 26: excavaciones en el área habitacional de la plaza del Grupo Noroeste, Estructura F-2. In *Proyecto Arqueológico Piedras Negras: Informe preliminar No. 2, segunda temporarda, 1998*, edited by H. L. Escobedo and S. D. Houston, pp.143-156. Report submitted to the Instituto de Antropología e Historia, Guatemala.

1998 PN 33: excavaciones en el área habitacional del Cuadrante U. In *Proyecto Arqueológico Piedras Negras: Informe preliminar No.2, segunda temporarda, 1998*, edited by H. L. Escobedo and S. D. Houston, pp.197-241. Report submitted to Instituto de Antropología e Historia, Guatemala.

1997 Informe parcial del Proyecto Valle de Malpaso-La Quemada, temporada 1997. Report submitted to the Instituto Nacional de Antropología e Historia, Mexico. (B. A. Nelson, I. G. Robertson, J. K. Millhauser, E. C. Wells, D. To, S. Dvorak, and R. Ortiz)

1997 Mimbres: Lives and Landscapes, Teacher Resource Materials. Education Outreach Program, Eastern Mimbres Archaeological Project. (B. L. Shears, V. D. Vargas, E. C. Wells, S. A. Lewis, M. C. Nelson, M. Hegmon, and M. Lindauer)

1997 Excavations in Unit 8, Poggio Colla, Mugello Valley, Vicchio, Italy. Report submitted to G. Warden and S. Kane, Directors, Poggio Colla-Mugello Valley Archaeological Project.

1996 A Maze of Maize: The Intensification of Resource Exploitation in the Lower Illinois River Valley and the American Bottom: Site Catchment Analysis and Excavations at the Evie Site, Illinois. Report submitted to J. E. Buikstra, Director, Center for American Archaeology. (E. C. Wells, D. Totten, S. Yaqubi, and M. Kaveler)

1995 Excavations in Operations 14 and 43 at La Sierra, Cortés, Honduras. Report submitted to E. M. Schortman and P. A. Urban, Directors, Naco Valley Archaeological Project.

EXHIBITIONS

2014-2014 The Legacies of Dozier. Curator, temporary installation in the Marshall Student Center, University of South Florida.

2013-2015 The Naidirolf: From Global Tourism to Local Identity. Curator, two-year exhibition in The Richard A. and Patricia P. Waterman Gallery, University of South Florida.

PRESENTATIONS (*invited)

Presentations at Professional Meetings

2016* The Boot Hill Burial Ground Project: Memory and memorialization of a difficult past—An inter-disciplinary collaboration. Paper presented in the session "Beyond the African Burial Ground" at the World Archaeological Congress 8, Kyoto, Japan. (A. T. Jackson, E. H. Kimmerle, and E. C. Wells)

2016 Tampa Bay Healthfields Partnership for Environmental Justice: Building Community Capacity to Reclaim Brownfields. Paper presented at the 'Research that Matters' Conference, "Coming Home to Social Justice: How Community Participation and Cross-Sector Collaboration Can Have a Collective Impact on Health Equity," hosted by the Office of Community Engagement and Partnerships, University of South Florida, Tampa. (E. C. Wells, M. Hafen, M. Ballogg, E. Johnson, R. Khanni, and G. Lehigh)

2016* The Landscape Legacies of Plantation Agriculture in the Caribbean: An Historical-Ecological Perspective from Betty's Hope, Antigua. Paper presented in the session, "The Environmental Legacies of Colonialism in the Neotropics" at the 81st Annual Meeting of the Society for American Archaeology, Orlando, Florida. (E. C. Wells, G. L. Fox, P. E. Siegel, N. P. Dunning, and R. Murphy)

2016* Geomorphological Assessment of Plantation Farmscapes in Antigua, West Indies. Paper presented in the session, "Student Contributions in Geoarchaeology" at the 81st Annual Meeting of the Society for American Archaeology, Orlando, Florida. (A. R. Tricarico, E. C. Wells, G. L. Fox, and R. Murphy)

2016* Activity Area Analysis of Elite and Commoner Spaces in the Ancient Maya City of Actuncan, Belize. Paper presented in the session, "Anthropic Activity Markers: Archaeology and Ethnoarchaeology" at the 81st Annual Meeting of the Society for American Archaeology, Orlando, Florida. (L. J. LeCount, K. A. Fulton, D. W. Mixter, E. C. Wells, and T. R. Jamison)

2016 Environmental legacies of plantation agriculture in Antigua, West Indies. Paper presented at the Annual Meeting of the Florida Academy of Sciences, St. Petersburg, Florida. (A. R. Tricarico, E. C. Wells, G. L. Fox, and R. Murphy)

2015 Scale Challenges of Water and Energy in Belize and the U.S. Virgin Islands. Paper presented at the 24th Annual Caribbean Water and Wastewater Association Conference and Exhibition, Miami, Florida. (C. Bender, E. S. Koenig, R. K. Zarger, E. C. Wells, and L. M. Whiteford)

2015 The Landscape Legacies of Sugar and Rum in Antigua, West Indies. Paper presented at the 2015 International Association for Caribbean Archaeology Congress, Sint Maarten-Saint Martin. (E. C. Wells, S. M. Pratt, and G. L. Fox)

2015 Geochemical Analysis of Soil Surfaces at Betty's Hope Plantation, Antigua. Paper presented at the 2015 International Association for Caribbean Archaeology Congress, Sint Maarten-Saint Martin. (C. K. Waters, E. C. Wells, and G. L. Fox)

2015 Reclaiming Development: Community-Based Heritage Conservation and University-Engaged Research in Seine Bight, Belize. Paper presented in the special session, "Examining the Representation of Indigenous Peoples in Belize and the Region," at the 13th Annual Belize Archaeology and Anthropology Symposium, San Ignacio, Cayo, Belize. (E. S. Koenig, E. C. Wells, and S. Garcia)

2015* Integrated Anthrosol Prospection at Betty's Hope Historic Sugarcane Plantation, Antigua, British West Indies. Paper presented in the session, "Anthropic Activity Markers: Archaeology and Ethnoarchaeology" at the 80th Annual Meeting of the Society for American Archaeology, San Francisco, California. (E. C. Wells, C. K. Waters, and G. L. Fox)

2015 Reclaiming Development: Community-Based Heritage Conservation and University-Engaged Research in a Garifuna Community in Belize. Paper presented in the session, "Cultural Heritage and Tourism," at the 74th Annual Meeting of the Society for Applied Anthropology, Pittsburgh, Pennsylvania (E. S. Koenig and E. C. Wells)

2015 Nexus Thinking for Water and Energy: An Anthropological-Engineering Perspective from the Caribbean. Paper presented in the session, "Applying Environmental Anthropology," at the 74th Annual Meeting of the Society for Applied Anthropology, Pittsburgh, Pennsylvania (Z. E. Darley, E. S. Koenig, C. M. Prouty, E. C. Wells, R. K. Zarger, and L. M. Whiteford)

2015 The Landscape Legacies of Sugar and Rum in Antigua, West Indies. Paper presented at the Annual Meeting of the Florida Academy of Sciences, St. Leo, Florida. (S. M. Pratt, E. C. Wells, and G. L. Fox)

2014* Tourism and "Uneven Development" in a Garifuna Community. Paper presented in the session, "Producing Inconvenient Knowledge and Attending to the Unimportant: Exploring Anthropology's Enduring Contributions to Expanding, Complicating, and Challenging Conventional Models of Socioeconomic Change and Development," at the 113th Annual Meeting of the American Anthropological Association, Washington, DC. (E. S. Koenig and E. C. Wells)

2014* Technology and Tourism on the Placencia Peninsula: Exploring Context-sensitive Pathways for Sustainable Wastewater Management. Paper presented at the 12th Annual Belize Archaeology and Anthropology Symposium, San Ignacio, Cayo, Belize. (E. C. Wells, R. K. Zarger, L. M. Whiteford, E. S. Koenig, and S. M. Pratt)

2014* Chemical Signatures Reveal New Activities at a Paynes Creek Salt Work. Paper presented at the 12th Annual Belize Archaeology and Anthropology Symposium, San Ignacio, Cayo, Belize. (E. C. Sills, H. McKillop, and E. C. Wells)

2014* Using Social Media to Create a Global Community of Sustainability-engaged Students. Paper presented at the 3rd Annual American Society for Engineering Education International Forum, Indianapolis, Indiana. (M. E. Verbyla, C. C. Naughton, V. Vernaza-Hernandez, A. Feldman, M. Brandt, M. A. Trotz, E. C. Wells, and J. R. Mihelcic)

2014 Negotiating the Water-Energy Nexus: Reclaiming Resources from Wastewater in Tourism Dependent Economies in the Caribbean. Poster presented at the 2014 Annual Meeting of the Society for Economic Anthropology, "Energy and Economy," Austin, Texas. (E. C. Wells, R. K. Zarger, L. M. Whiteford, M. R. Cairns, E. S. Koenig, and Z. E. Darley)

2014 The Price of Paradise: Tourism's Impact on Archaeological Resources in Placencia, Belize. Poster presented in the session, "Issues in Managing Archaeological Sites, Artifact Collections, and Cultural Resources" at the 79th Annual Meeting of the Society for American Archaeology, Austin, Texas. (Z. E. Darley and E. C. Wells)

2014* Reconsidering Ancient Population Movement in Mesoamerica: New Strontium and Oxygen Isotopes Values in Western Honduras. Paper presented in the session, "Mobility and Migration over Mesoamerica in Classic and Postclassic Times," at the 79th Annual Meeting of the Society for American Archaeology, Austin, Texas. (C. Freiwald, K. A. Miller, T. D. Price, J. H. Burton, P. Fullagar, and E. C. Wells)

2014* The Royalization of Northern Honduras, 1502-1788: Trajectories of the Pech, Miskitu, and Tolupan. Paper presented in the symposium, "New Definitions of Southeastern Mesoamerica: Indigenous Interaction, Resilience, and Change," at the 79th Annual Meeting of the Society for American Archaeology, Austin, Texas. (L. D. Mihok and E. C. Wells)

2014 A Chemical Comparison of Plaster Surfaces from Actuncan, Belize. Poster presented in the session, "Maya Architecture and Settlement Patterns in Belize," at the 79th Annual Meeting of the Society for American Archaeology, Austin, Texas. (K. A. Rothenberg, E. C. Wells, and D. W. Mixter)

2014* Interdisciplinary Forensic Archaeology and Restorative Justice: The Case of the Boot Hill Cemetery, Marianna, Florida. Paper presented in the symposium, "Forensic Archaeology: Past Cases, Current Research," at the 79th Annual Meeting of the Society for American Archaeology, Austin, Texas. (E. C. Wells, E. H. Kimmerle, and A. T. Jackson)

2014* Ancient Maya Urban Soilscapes as Geochemical Reservoirs: Characterization of Lime-plaster Surfaces from the Palace Complex at Actuncan, Belize. Paper presented in the symposium, "Geoarchaeology: Novel Approaches to Analysis" at the Annual Meeting of the Association of American Geographers, Tampa, Florida. (E. C. Wells, L. J. LeCount, T. R. Jamison, K. A. Fulton, and D. W. Mixter)

2014 Chemical Signatures Reveal Ancient Activities at Chan b'i, an Ancient Maya Salt Work, Now Underwater. Poster presented in the symposium, "Geography of Culture, Ethnicity, Gender and Social Issues" at the Annual Meeting of the Association of American Geographers, Tampa, Florida. (E. C. Sills, H. I. McKillop, and E. C. Wells)

2014 Understanding the Water-Energy Nexus in the Caribbean: The Importance of Sociocultural Context and Political Economy to Wastewater Management. Paper presented at the Nexus 2014: Water, Food and Energy Conference, Water Institute, University of North Carolina, Chapel Hill. (R. K. Zarger, E. C. Wells, L. M. Whiteford, M. R. Cairns, and E. S. Koenig)

2014 Tourism and Water: An Evaluation of Perceptions and Practices of Sustainable Wastewater Management on the Placencia Peninsula, Belize. Paper presented at the 4th Annual Water Institute Symposium, University of Florida, Gainesville. (E. C. Wells, R. K. Zarger, and L. M. Whiteford)

2013* "God Alone Understands": Restorative Justice through a Mixed Methods Approach at the Florida School for Boys. Paper presented in the symposium, "Doing Justice-," at the 112th Annual Meeting of the American Anthropological Association, Chicago, Illinois. (J. W. Powell, B. I. Lanning, E. H. Kimmerle, E. C. Wells, A T. Jackson, and R. W. Estabrook)

2013* Pottery, People, and pXRF: Toward the Development of Intraregional Provenance Assays for Southeast Mesoamerican Ceramics. Paper presented in the symposium, "Ceramic Ecology XXVII: Honoring Charles S. Kolb," at the 112th Annual Meeting of the American Anthropological Association, Chicago, Illinois. (D. R. McCormick and E. C. Wells)

2013 English/Miskitu Interaction at Augusta, an 18th Century Settlement on Roatán Island, Honduras. Poster presented at the Chacmool Annual Archaeology Conference, "Trading Spaces: The Archaeology of Interaction, Migration and Exchange," University of Calgary, Alberta, Canada. (L. D. Mihok and E. C. Wells)

2013 A New Perspective on Maya Household Interactions: Chemical Analysis of Residential Plaster Surfaces from Actuncan, Belize. Poster presented at the Chacmool Annual Archaeology Conference, "Trading Spaces: The Archaeology of Interaction, Migration and Exchange," University of Calgary, Alberta, Canada. (K. A. Rothenberg, E. C. Wells, and D. W. Mixter)

2013 The Impacts of Tourism Development on Perceptions and Practices of Wastewater Management on the Placencia Peninsula. Paper presented at the 11th Annual Belize Archaeology and Anthropology Symposium, San Ignacio, Cayo, Belize. (E. C. Wells, R. K. Zarger, L. M. Whiteford, M. R. Cairns, and E. S. Koenig)

2013* Integrated Archaeometric Analysis of the Context and Contents of an Ulúa-style Marble Vase from the Palmarejo Valley, Northwest Honduras. Paper presented in the symposium, "Archaeometric Methods, Archaeological Materials, and Ancient Technologies," at the 78th Annual Meeting of the Society for American Archaeology, Honolulu, Hawaii.

2013 Geochemical Analysis of Occupational Surfaces at Augusta, an 18th Century English/Miskitu Settlement on Roatan Island, Honduras. Paper presented in the symposium, "12th Archaeological Chemistry Symposium," at the 234th Annual Meeting of the American Chemical Society, New Orleans, Louisiana. (P. G. Phillips, E. C. Wells, and L. D. Mihok)

2013* Water and Worldview: Stakeholder Strategies for Water Resource Management in Northwest Honduras. Paper presented in the symposium, "Blue Gold: Understanding the Causes and Consequences of Water Insecurity," at the 73rd Annual Meeting of the Society for Applied Anthropology, Denver, Colorado. (J. E. Moreno Cortés, E. C. Wells, and K. L. Davis-Salazar)

2013* "Our Place in the Sun": Investigations into the Boot Hill Cemetery at the Florida School for Boys. Paper presented at the 65th Annual Meeting of the American Academy of Forensic Sciences, Washington, DC. (E. H. Kimmerle, R. W. Estabrook, E. C. Wells, A. T. Jackson, and G. W. Kehoe)

2012* Society, Economy, and Environment: Archaeology as Sustainability Science. Paper presented in the symposium, "Five Fields Update - Society for Anthropology in Community Colleges," at the 111th Annual Meeting of the American Anthropological Association, San Francisco, California.

2012* Pottery Designs as Sources of Information about Past Environments on Roatán Island, Honduras. Paper presented in the symposium, "Ceramic Ecology XXVI: Current Research on Ceramics 2012," at the 111th Annual Meeting of the American Anthropological Association, San Francisco, California. (W. A. Goodwin and E. C. Wells)

2012* Anthrosol Analysis of Ballcourts in Ancient Southeastern Mesoamerica. Paper presented in the symposium, "Geoarchaeology of Ritual Behavior and Sacred Places," at the 77th Annual Meeting of the Society for American Archaeology, Memphis, Tennessee.

2012* Geochemical Prospection at Augusta, an 18th Century English Settlement on Roatan Island, Honduras. Poster presented in the symposium, "New Geoarchaeological Approaches to Paleoenvironments and Settlements," at the 77th Annual Meeting of the Society for American Archaeology, Memphis, Tennessee. (L. D. Mihok and E. C. Wells)

2012 Community-engaged, Outcome-driven Anthropology is a Vital Part of STEM Research. Paper presented at the Annual Meeting of the Florida Academy of Sciences, Tampa, Florida. (B. R. Weisman, E. C. Wells, R. K. Zarger, and K. L. Davis-Salazar)

2011* Culture, Power, History: Implications for Understanding Global Environmental Changes. Paper presented in the symposium, "Environmental Governance and Policy: Moving beyond the Legacy of the Rational Actor and Individual Responsibility," at the 110th Annual Meeting of the American Anthropological Association, Montreal, Quebec, Canada.

2011* Global Sustainability: New Curricular Initiatives at the University of South Florida. Paper presented at the 36th Annual Conference of the Institute of Florida Studies, "Beyond Sustainability: Ecosystems, Economics, and Education," Hillsborough County Community College, Plant City, Florida.

2011* Archaeological Perspectives on Surplus Capture in Contrasting Modes of Religiosity. Paper presented in the symposium, "Surplus: The Politics of Production and the Strategies of Everyday Life," at the 76th Annual Meeting of the Society for American Archaeology, Sacramento, California.

2011* Administered, Non-market Trade in Postclassic Mesoamerica: Observations from Roatán Island, Honduras. Poster presented in the symposium, "Who's In Charge Here- Political Organization and Social Differentiation in Rural Southeast Mesoamerica," at the 76th Annual Meeting of the Society for American Archaeology, Sacramento, California. (W. A. Goodwin and E. C. Wells)

2011* A Controlled Comparison of Chemical Residues in Plasters and Soils using Portable X-ray Fluorescence Spectrometry. Paper presented in the symposium, "Beyond Descriptive Analysis: Recent Advances in the Studies of Lime Plasters and Mortars," at the 76th Annual Meeting of the Society for American Archaeology, Sacramento, California. (D. McCormick, R. Jakimavicius, R. H. Tykot, and E. C. Wells)

2010 IIICE (Integrated Interdisciplinary Inquiry and Community Engagement): A New Model for Sustainability in Higher Education. Paper presented at the Annual Conference of the Association for the Advancement of Sustainability in Higher Education, Denver, Colorado. (E. C. Wells, L. M. Whiteford, and R. C. Wilcox)

2010* Alkaline Earth Metals as Human Activity Markers in Archaeological Soils. Poster presented in the symposium, "Archaeological Science 2010," at the 75th Annual Meeting of the Society for American Archaeology, St. Louis, Missouri.

2010* Archaeopedological and Geomorphological Perspectives on Prehispanic Water Management at Palmarejo, Honduras. Paper presented in the symposium, "On the Valley Floor: Regional Variation and Cultural Difference in Southeast Mesoamerica," at the 75th Annual Meeting of the Society for American Archaeology, St. Louis, Missouri. (Z. E. Darley and E. C. Wells)

2010* The Everyday Relevance of Cultural Patrimony and Heritage in the Naco Valley, Honduras. Paper presented in the symposium, "Every Place is a Node: Rethinking Centers, Peripheries, and Patrimony in Honduras," at the 75th Annual Meeting of the Society for American Archaeology, St. Louis, Missouri. (J. E. Moreno Cortes and E. C. Wells)

2010* Using Soil Chemical Residue Analysis to Prospect for Ancient Activity Loci at the Prehispanic Site of Palmarejo, Northwest Honduras. Paper presented in the symposium, "Geoarchaeological Research," at the 75th Annual Meeting of the Society for American Archaeology, St. Louis, Missouri. (K. A. Rothenberg and E. C. Wells)

2010* Mayanizing Tourism in Roatán, Honduras: Archaeological Perspectives on Heritage, Development, and Indigeneity. Paper presented in the session, "The Economics of Cultural Heritage and Identity," at the 2010 Annual Meeting of the Society for Economic Anthropology, "Contested Economies: Global Tourism and Cultural Heritage," Tampa, Florida. (A. J. Figueroa, W. A. Goodwin, and E. C. Wells)

2010 The Significance of Alkaline Earth Metals for Identifying Human Activity Areas on Ancient Soil Surfaces. Poster presented in the symposium, "Field Archaeology," at the 42nd International Symposium on Archaeometry, Tampa, Florida.

2010 Experimental Analysis of Archaeological Soils from Honduras Using Portable X-Ray Fluorescence Spectrometry. Poster presented in the symposium, "Field Archaeology," at the 42nd International Symposium on Archaeometry, Tampa, Florida. (R. H. Tykot, E. Keister, A. Bear, K. A. Rothenberg, and E. C. Wells)

2009* Characterization in Shades of Blue: Archaeological Applications of Extractable Soil Phosphate using Molybdate Colorimetry and ICP-Emission Spectroscopy. Paper presented in the symposium, "Archaeometry," at the Annual Meeting of the Federation of Analytical Chemistry and Spectroscopy Societies, Louisville, Kentucky. (E. C. Wells, R. F. Beeston, and D. A. Storer)

2009* The Importance of a Deep-time Perspective for Understanding Land Use Legacies. Paper presented at the 4th Annual Campus and Community Sustainability Conference, Tampa, Florida.

2009 Emission or Absorption- A Comparison of Spectroscopic and Colorimetric Methods for Characterizing Extractable Phosphate in Archaeological Soils. Poster presented at the 2009 Archaeological Sciences of the Americas Symposium, Tampa, Florida. (D. Bohrer, P. Griffith, K. Surharski, D. A. Storer, K. A. Rothenberg, and E. C. Wells)

2009 Interlinking Soil Properties to Prospect for Ancient Activity Loci: An Example from Palmarejo, Honduras. Poster presented at the 2009 Archaeological Sciences of the Americas Symposium, Tampa, Florida. (K. A. Rothenberg, D. A. Storer, and E. C. Wells)

2009 Building Reference Models in Soil Chemistry for Archaeological Prospection. Paper presented at the 2009 Archaeological Sciences of the Americas Symposium, Tampa, Florida.

2009* Socio-natural Patterns and Processes of Community Integration in the Palmarejo Valley, Honduras. Paper presented in the symposium, "Communities across Space and Time: Investigations in Southeast Mesoamerica," at the 74th Annual Meeting of the Society for American Archaeology, Atlanta, Georgia. (K. L. Davis-Salazar and E. C. Wells)

2009* Soilscape Legacies of the Palmarejo Valley, Northwestern Honduras. Poster presented in the symposium, "Geoarchaeology and Interpretation," at the 74th Annual Meeting of the Society for American Archaeology, Atlanta, Georgia. (K. A. Rothenberg and E. C. Wells)

2009* El Antigual, a Postclassic Hilltop Settlement on Roatan Island, Honduras. Paper presented in the symposium, "Archaeological Research in Honduras: Understanding Ancient Lifeways in the Intermediate Area," at the 74th Annual Meeting of the Society for American Archaeology, Atlanta, Georgia. (E. C. Wells and A. J. Figueroa)

2008* Cultivated Landscapes as Inalienable Wealth in Ancient Mesoamerica. Paper presented in the symposium, "Inalienable Possessions in the Archaeology of Mesoamerica," at the 73rd Annual Meeting of the Society for American Archaeology, Vancouver, British Columbia, Canada.

2008* Applying Archaeology to Hydroecological and Agroecological Development in Honduras. Paper presented in the symposium, "Archaeological Contributions to Understanding Socio-ecological Systems: Emerging Collaborations between Ecology and Archaeology," at the 73rd Annual Meeting of the Society for American Archaeology, Vancouver, British Columbia, Canada. (J. E. Moreno Cortés, E. C. Wells, and K. L. Davis-Salazar)

2008* The Archaeology of Cultural Soilscapes. Paper presented in the symposium, "Soils and Maya Archaeology," at the 73rd Annual Meeting of the Society for American Archaeology, Vancouver, British Columbia, Canada. (R. P. King, C. E. Martin, and E. C. Wells)

2007* Animated Landscapes and Intensive Agriculture: Perspectives from the Maring Kaiko and the Lenca Compostura. Paper presented in the symposium, "Intensive Agriculture without Political Centralization and Population Pressure: Political Ecology as an Alternative to Boserupian Theory," at the 106th Annual Meeting of the American Anthropological Association, Washington, DC.

2007 Estimating Time Since Death Using Soil Chemistry of Burial Silhouettes. Poster presented at the 4th Annual Forensic Sciences Symposium, Nebraska Institute of Forensic Sciences, Lincoln, Nebraska. (S. M. Butera, F. Postma, E. C. Wells, and E. H. Kimmerle)

2007* The Discovery, Recovery, and Analysis of an Ulúa-style Marble Vase from the Palmarejo Valley, Honduras. Paper presented at the 2007 Southeast Conference on Mesoamerican Archaeology and Ethnohistory, University of South Carolina, Columbia. (E. C. Wells, K. L. Davis-Salazar, and J. E. Moreno Cortés)

2007* El rescate del pasado antiguo de Palmarejo: Las recompensas de una investigación arqueológica participativa. Paper presented at the conference, "Arqueología, Participación Comunitaria, y el Patrimonio de Honduras," Instituto Hondureño de Antropología e Historia, Comayagua, Honduras (E. C. Wells, K. L. Davis-Salazar, and J. E. Moreno Cortés)

2007* Agua y arqueología en el valle de Palmarejo: Haciendo uso del pasado para mejorar el presente. Paper presented at the conference, "Arqueología, Participación Comunitaria, y el Patrimonio de Honduras," Instituto Hondureño de Antropología e Historia, Comayagua, Honduras (K. L. Davis-Salazar, E. C. Wells, and J. E. Moreno Cortés)

2007 Archaeological Soil Chemistry in Cultivated Orange Groves: A Test Case from the Blueberry Site, Lake Placid, Florida. Poster presented at the 59th Annual Meeting of the Florida Anthropological Society, Avon Park, Florida. (Z. E. Darley and E. C. Wells)

2007* Applying Archaeology to Rural Development in Honduras. Paper presented in the symposium, "Current Initiatives and Proposals about Public Archaeology in Honduras," at the 72nd Annual Meeting of the Society for American Archaeology, Austin, Texas. (E. C. Wells, K. L. Davis-Salazar, and J. E. Moreno Cortés)

2007* Alternative Models for Settlement and Land Use in Prehispanic Northwest Honduras. Paper presented in the symposium, "Living on the Land: The Complex Relationship between Population and Agriculture in the Americas," at the 72nd Annual Meeting of the Society for American Archaeology, Austin, Texas. (K. L. Davis-Salazar, E. C. Wells, and D. D. Kuehn)

2007* Dirt Cheap Dirt Science: Simple and Inexpensive Soil Analyses for Archaeological Resource Managers. Poster presented in the symposium, "Archaeometric Methods, Archaeological Applications," at the 72nd Annual Meeting of the Society for American Archaeology, Austin, Texas. (Z. E. Darley and E. C. Wells)

2007* Revisiting the Maya Market Hypothesis: Quantitative Models for Ancient Lowland Maya Market Exchange. Paper presented in the symposium, "The Archaeological Recognition of Market Places: Views from the Maya Lowlands," at the 72nd Annual Meeting of the Society for American Archaeology, Austin, Texas. (C. Novotny and E. C. Wells)

2007* Participatory Archaeological Research and Rural Development in the Palmarejo Valley, Honduras. Paper presented in the symposium, "Mapping Gender, Ethnicity, and Participation: Natural Resources and 'Rural' Livelihoods in the South," at the 67th Annual Meeting of the Society for Applied Anthropology, Tampa, Florida. (E. C. Wells and K. L. Davis-Salazar)

2007* Learning from Prehispanic Anthropogenic Environments: Applied Archaeology and Rural Development in Northwest Honduras. Paper presented in the conference, "The Archaeology of Anthropogenic Environments," at the 24th Annual Visiting Scholar Conference, Center for Archaeological Investigations, Southern Illinois University, Carbondale, Illinois. (K. L. Davis-Salazar and E. C. Wells)

2006* Explaining Standardization without Explaining It Away: Inferring Production Scale from Ancient Pech Pottery of Roatan Island, Honduras. Paper presented in the symposium, "Ceramic Ecology XX: Current Research on Ceramics 2006, Honoring Louana M. Lackey (1926-2005)," at the 105th Annual Meeting of the American Anthropological Association, San Jose, California. (J. E. Moreno Cortés and E. C. Wells)

2006* Conflict, Compromise, and Collaboration: Managing Archaeological Resources in Northwest Honduras. Paper presented in the symposium, "The Intersection between Archaeology and Community in the Developing World," at the 105th Annual Meeting of the American Anthropological Association, San Jose, California. (E. C. Wells, K. L. Davis-Salazar, and J. E. Moreno Cortés)

2006 Archaeology through Soil Chemistry, Soil Chemistry through Archaeology: Interdisciplinary Approaches to Teaching. Paper presented at the 19th Biennial Conference on Chemical Education, Purdue University, West Lafayette, Indiana. (E. C. Wells and D. A. Storer)

2006 Assessing Agricultural Potential and its Implications for Political Development in Northwest Honduras. Paper presented at the 71st Annual Meeting of the Society for American Archaeology, San Juan, Puerto Rico. (J. S. Verdaasdonk and E. C. Wells)

2006* Environmental Worldview and Ritual Economy among the Lenca of Honduras: Archaeological Implications for Southeastern Mesoamerica. Paper presented in the 5th Cotsen Advanced Seminar, "Ritual Economy Untethered by Space, Time, or Economic Form," at the Cotsen Institute of Archaeology, University of California, Los Angeles.

2006* Sampling Design and Inferential Bias in Archaeological Soil Chemistry: Cautionary Tales from Honduras. Paper presented in the symposium, "Social Spaces and Activities in the Past and Present: Evaluating Chemical Analyses and Techniques for Archaeological Interpretation," at the 71st Annual Meeting of the Society for American Archaeology, San Juan, Puerto Rico.

2006* Stressed Out: The Role of Cultural and Natural Resources Management in Sustainable Development in Northwest Honduras. Paper presented in the symposium, "Archaeology and Sustainable Development," at the 71st Annual Meeting of the Society for American Archaeology, San Juan, Puerto Rico. (K. L. Davis-Salazar and E. C. Wells)

2006* A Consideration of the Relationship between Settlement Hierarchy and Political Economy in the Naco Valley. Paper presented in the symposium, "Beyond the Metropole: Agrestic Centers in Southeastern Mesoamerica," at the 71st Annual Meeting of the Society for American Archaeology, San Juan, Puerto Rico. (C. Novotny and E. C. Wells)

2006* Predictive Modeling of Soil Chemical Data by ICP-OES Reveals the Uses of Ancient Mesoamerican Plazas. Paper presented in the symposium, "Archaeological Chemistry: Analytical Techniques and Archaeological Interpretation," at the 227th Annual Meeting of the American Chemical Society, Atlanta, Georgia. (E. C. Wells, C. Novotny, and J. R. Hawken)

2005* From Crops to Crafts to Power: The Political Ecology of Quebrada Communities in Northwest Honduras. Paper presented at the 2005 Southeast Conference on Mesoamerican Archaeology and Ethnohistory, University of South Florida, Tampa. (K. L. Davis-Salazar and E. C. Wells)

2005 Ancient Impacts on Modern Communities: Heritage Management in Northwest Honduras. Poster presented at the Annual Meeting of the Society for Applied Anthropology, Santa Fe, New Mexico (K. L. Davis-Salazar and E. C. Wells)

2005 A Social and Natural Landscape Survey of Quebrada Communities in Northwestern Honduras. Paper presented at the 70th Annual Meeting of the Society for American Archaeology, Salt Lake City, Utah. (K. L. Davis-Salazar, E. C. Wells, J. E. Moreno Cortés, J. R. Hawken, and J. S. Verdaasdonk)

2005* A Soil Chemical Approach to Understanding the Diachronic Use of Space on Mound A. Paper presented in the symposium, "Revealing Mound A, Shiloh, Tennessee: Research Results of the 1999-2004 Field Program," at the 2005 Southeastern Archaeological Conference, Columbia, South Carolina.

2005* Soil Chemical Residues of Food Preparation: Lessons from Mesoamerican Ethnoarchaeology. Paper presented in the symposium, "Archaeological Studies of Cooking and Food Preparation," at the 70th Annual Meeting of the Society for American Archaeology, Salt Lake City, Utah.

2005 Landscapes between Villages: A Test of the Model using Hohokam Excavation Data. Poster presented at the 70th Annual Meeting of the Society for American Archaeology, Salt Lake City, Utah. (E. C. Wells, J. C. Ravesloot, and M. K. Woodson)

2004* Faenas, ferias, y fiestas: la movilización festiva del trabajo y el caso específico del sitio El Coyote, valle de Cacaulapa. Paper presented at the VIII Seminario de Antropología de Honduras, Instituto Hondureño de Antropología e Historia, Tegucigalpa, Honduras.

2004* Situational Sacredness: Creating Temporary Ritual Space in Ancient and Modern Honduras. Paper presented in the symposium, "The Construction and Consecration of Ritual Space in Mesoamerica," at the 69th Annual Meeting of the Society for American Archaeology, Montreal, Quebec, Canada. (E. C. Wells and K. L. Davis-Salazar)

2004* From Hohokam to O'odham: Quantitative Measures for Identifying Protohistoric Ceramic Assemblages in the Middle Gila Valley, Central Arizona. Paper presented at the Arizona Archaeological Council Conference, "Faint Traces of Past Places: The Archaeology of High Mobility Groups in Arizona," University of Arizona, Tucson. (E. C. Wells, C. Loendorf, and M. K. Woodson)

2004 Economic Impacts of Work Feasts on Ancient and Modern Agrarian Communities in Western Honduras. Poster presented in the session, "Fast Food – Slow Food: Social and Economic Contexts of Food and Food Systems," at the Annual Meeting of the Society for Economic Anthropology, Atlanta, Georgia. (E. C. Wells and J. S. Verdaasdonk)

2003* Ritual Finance and Political Development in Ranked Societies: An Example from Northwest Honduras. Paper presented in the symposium, "Mesoamerican Ritual Economy: Archaeological and Ethnological Perspectives," at the 102nd Annual Meeting of the American Anthropological Association, Chicago, Illinois.

2003* An Introduction to Mesoamerican Ritual Economy. Paper presented in the symposium, "Mesoamerican Ritual Economy: Archaeological and Ethnological Perspectives," at the 102nd Annual Meeting of the American Anthropological Association, Chicago, Illinois.

2003* Quantitative Approaches for the Archaeological Study of Soil Chemistry and Activity Areas. Paper presented in the symposium, "Advances in Archaeological Approaches to Soil Chemistry," at the 68th Annual Meeting of the Society for American Archaeology, Milwaukee, Wisconsin.

2002* La arqueología y las lecturas químicas de las actividades rituales en la plaza monumental del Sitio El Coyote, Santa Bárbara, Honduras. Paper presented in the session, "Arqueología de Honduras," at the XVI Simposio de Investigaciones Arqueológicas en Guatemala, Museo Nacional de Arqueología y Etnología, Guatemala, Guatemala.

2002* Anthrosol Chemistry and Midden Taphonomy: The Intra-Site Provenance of Artifacts at Late Classic El Coyote, Northwest Honduras. Paper presented in the symposium, "Archaeological Provenance in Context: Placing Materials in Cultural and Geographic Landscapes," at the 67th Annual Meeting of the Society for American Archaeology, Denver, Colorado.

2002 La Quemada as a Social Microcosm. Poster presented in the session, "Society and Politics in the Greater Southwest," at the Southwest Symposium, Arizona State Museum, University of Arizona, Tucson.

2001 An Ethnoarchaeological Perspective on the Chemical and Material Residues of Communal Feasting at Late Classic El Coyote, Northwest Honduras. Paper presented in the symposium, "Materials Issues in Art and Archaeology VI," at the 2001 Meeting of the Materials Research Society, Boston, Massachusetts. (E. C. Wells and P. A. Urban)

2001* Los símbolos extranjeros, los recursos locales, y la alfarería epiclásica del Valle de Malpaso, Zacatecas. Paper presented in the symposium, Producción e Intercambio de Recursos Estratégicos en el Antiguo Occidente, Centro de Estudios Antropológicos, El Colegio de Michoacán, Zamora, Michoacán, México. (E. C. Wells and B. A. Nelson)

2001* Chemical, Technological, and Social Aspects of Ceramic Manufacture in the La Quemada Region of Northwestern Mexico. Paper presented in the symposium, "Archaeological Chemistry," at the 222nd Annual Meeting of the American Chemical Society, Chicago, Illinois.

2001* Scanning Electron Microprobe Analysis of Ceramic Clay Fractions and Clay-rich Sediments from the Malpaso Valley, Northwest Mexico. Paper presented in the symposium, "Resolution and Refinement: Leading Edge Research in Archaeological Chemistry," at the 66th Annual Meeting of the Society for American Archaeology, New Orleans, Louisiana. (C. P. Garraty and E. C. Wells)

2001* Pottery Manufacture, Shell Trade, and the Political Economy of the Malpaso Valley, Zacatecas. Paper presented in the symposium, "Social and Environmental Practices at Epiclassic La Quemada, Northwest Mexico," at the 66th Annual Meeting of the Society for American Archaeology, New Orleans, Louisiana. (E. C. Wells and V. D. Vargas)

2000* Degrees of Control: Modeling Ceramic Production, Distribution, and Use in the Late Classic Naco Valley, Northwest Honduras. Paper presented in the symposium, "Pottery Economics in Mesoamerica: Integrated Approaches," at the 65th Annual Meeting of the Society for American Archaeology, Philadelphia, Pennsylvania. (B. P. Carter, P. A. Urban, M. T. Ausec, E. C. Wells, E. M. Schortman, and E. E. Bell)

2000* Microcosmic Organization and Polity Integration at La Quemada, Northwest Mexico. Paper presented in the symposium, "Segmentary Organizations: Political and Economic Perspectives," at the 65th Annual Meeting of the Society for American Archaeology, Philadelphia, Pennsylvania.

2000 Determining Intrasite Variation in the Chemical Composition of Pottery with Scanning-Electron Microscopy: A Case Study from Northwest Mexico. Poster presented at the 32nd International Symposium on Archaeometry, Mexico City, Mexico.

2000 Regional Pilgrimage and Ritual Economy in Ancient Northwest Mexico. Paper presented in the session, "The Archaeology of Politics and Ritual," at the 99th Annual Meeting of the American Anthropological Association, San Francisco, California.

1999* The Architecture of Domestic Identities at Piedras Negras, Guatemala. Paper presented in the symposium "Constructing Social Identities: Gender, Ethnicity, and Status in the Archaeological Record," at the 64th Annual Meeting of the Society for American Archaeology, Chicago, Illinois. (A. M. Kovak and E. C. Wells)

1999 Reconstructing Ceramic Technology: A Case Study from Northwest Mexico. Paper presented in the session, "Ceramic Studies in Archaeology," at the 64th Annual Meeting of the Society for American Archaeology, Chicago, Illinois.

1999* La organización de la producción de cerámica en La Sierra y sus implicaciones para la administración local. Paper presented at the VII Seminario de Antropología de Honduras, Instituto Hondureño de Antropología e Historia, Tegucigalpa, Honduras.

1999 Ceramic Production and Social Interaction in the Prehispanic Malpaso Valley, Northwestern Mexico. Paper presented at the Fifth Annual Graduate Student Archaeology Conference, "The Two Cultures: Humanities and Science in Archaeology," Boston University, Boston, Massachusetts.

1998* An Interdisciplinary Approach to Modeling Sociopolitical Organization in the Prehispanic Malpaso Valley, Northwestern Mexico. Paper presented in the symposium, "Interdisciplinary Approaches in Archaeology: Tradition and Prospects," at the 63rd Annual Meeting of the Society for American Archaeology, Seattle, Washington. (D. To, E. C. Wells, and J. K. Millhauser)

1998* Unidades Residenciales en Piedras Negras: Resultados de las Investigaciones Realizadas en las Temporadas de Campo de 1997 y 1998. Paper presented in the session, "Arqueología de las tierras bajas: unidades domésticas," at the XII Simposio de Investigaciones Arqueológicas en Guatemala, Museo Nacional de Arqueología y Etnología, Guatemala, Guatemala. (M. Urquizú, E. C. Wells, I. Aguirre, N. Monterroso, E. Arredondo, and A. Román).

1998* The Maintenance of History in Urban Domestic Architecture at Piedras Negras, Guatemala. Paper presented at the Annual Graduate Student Anthropology Symposium, "Culture Change in the Ancient World," Department of Anthropology and the Ancient Studies Program, University of Pennsylvania, Philadelphia, Pennsylvania.

1998* A Consideration of Central Arizona Plain Wares, Technological Traditions, and Cultural Connections. Paper presented in the symposium, "Can't We Just Throw It Away- New Approaches to Plain Pottery," at the 63rd Annual Meeting of the Society for American Archaeology, Seattle, Washington. (E. C. Wells and A. W. Simon)

1997 The Politics of Ceramic Production in a Late Classic Southeastern Mesoamerican Polity. Paper presented in the session, "Mesoamerican and Central American Archaeology," at the 62nd Annual Meeting of the Society for American Archaeology, Nashville, Tennessee.

1997 Modular Social Organization in Prehispanic Mesoamerica: Archaeological Perspectives from Teotihuacan and La Quemada. Paper presented at the 45th Annual Meeting of the American Society for Ethnohistory, Mexico City, Mexico. (E. C. Wells and C. P. Garraty)

1997* Modeling Intraregional Interaction Using Ceramic Technology: Prehispanic Social Organization in the Malpaso Valley, Northwestern Mexico. Paper presented in the symposium, "The Future of Anthropological Archaeology: New Directions in Graduate Research," at the 96th Annual Meeting of the American Anthropological Association, Washington, DC.

1996* The Fires Without and the Fires Within: Pyrotechnology in the Late Classic Naco Valley, Northwestern Honduras, and in Its Environs. Paper presented in the symposium, "The History and Prehistory of Ceramic Kilns," at the 98th Annual Meeting of the American Ceramic Society, Indianapolis, Indiana. (P. A. Urban, E. C. Wells, and M. T. Ausec)

<u>External Scholarly Lectures</u>

2016* Landscape Legacies of Sugar and Rum in the Caribbean. Lecture presented to the Department of Archaeology, University of Exeter, England, March 16.

2014* Sustainable Tourism, Development, and the Resiliency of Ecosystem Services: A Case Study from Coastal Belize. Lecture presented to the Center for Marine and Environmental Studies, University of the Virgin Islands, U.S. Virgin Islands, May 23.

2014* Recent Archaeological Research on Long-term Human-environmental Dynamics in the Caribbean Basin Neotropics. Lecture presented to the Department of Anthropology, Sociology, and Languages, University of Missouri, St. Louis, April 2.

2013* Heart of Sky, Heart of Earth: Guatemala and the Mundo Maya. Lecture presented in the Global Education Lecture Series, Hillsborough Community College, Tampa, Florida, October 9.

2013* Five Keys to Systems Thinking. Keynote lecture presented at the Interdisciplinary Research in Anthropology and the Sciences conference, Washington State University, Pullman, September 28.

2013* Culture Matters: Research-based Policy for Sustainable Development. Lecture presented at the Thomas S. Foley Institute for Public Policy and Public Service, Washington State University, Pullman, September 27.

2011* Framing Sustainability: Citizenship, Metabolism, and Resiliency. Lecture presented in the Ecolunch Seminar Series, National Center for Ecological Analysis and Synthesis, Santa Barbara, California, September 29.

2011* Culture, Power, History: Implications for Understanding Global Environmental Change. Lecture presented in the Environmental Sciences Institute Seminar Series, Environmental Sciences Institute, Florida A&M University, Tallahassee, Florida, March 25.

2010* A Deep-time Perspective on Environmental Change and Place-based Engagement in Northwest Honduras. Lecture presented in the Departmental Colloquium Series, Department of Anthropology, Pennsylvania State University, University Park, Pennsylvania, October 1.

2009* La cultura y la agricultura: Una perspectiva desde el antiguo pasado. Lecture presented at the Universidad Nacional de Agricultura, Catacamas, Olancho, Honduras, May 30.

2009* La Isla Roatán antes de Colón: Abriendo una conversación sobre la herencia cultural prehispánica de las Islas de la Bahía. Lecture presented at the Centro Documental de Investigaciones Históricas de Honduras, Antigua Casa Presidencial, Tegucigalpa, Honduras, May 29.

2008* Souls and Soils of the Ancient Maya: Archaeological Lessons for Sustainable Land Use. Lecture presented in the Department of Anthropology, Oberlin College, Oberlin, Ohio, December 8.

2008* The Cornfield Spirits: Nonmaterial Motives for Cultivating Landscapes in the Ancient Maya World. Lecture presented to the Institute for Mesoamerican Studies, State University of New York, Albany, New York, March 7.

2007* Temples, Tombs, and Tablets: New Discoveries in Maya Archaeology. Lecture presented at Southern State Community College, Hillsboro, Ohio, October 29.

2006* Ancient Remains as Modern Resources: Participatory Archaeological Research in Northwest Honduras. Lecture presented in the Anthropology Colloquium, Department of Anthropology, University of North Florida, Jacksonville, Florida, October 6.

2002* Major Challenges for Protohistoric Research in South-central Arizona. Lecture presented in the Research Forum, Cultural Resource Management Program, Gila River Indian Community, Sacaton, Arizona, December 11.

2002* El Coyote and La Compostura: The Archaeology of Labor Mobilization and Chiefly Power in Prehispanic Honduras. Lecture presented in the Archaeology Wing Seminar, Department of Anthropology, Harvard University, Cambridge, Massachusetts, April 10.

2001* Warriors, Ancestors, and Pilgrims in Ancient Northwest Mexico: Recent Archaeological Excavations at La Quemada, Zacatecas. Lecture presented at the Mexican Cultural Institute, Mexican Embassy, Washington, DC, February 15.

1998* Archaeological Methods for Defining Maya Domestic Space: A Case Study from Piedras Negras, Guatemala. Lecture presented in the Department of Anthropology, Brigham Young University, Provo, Utah, October 1.

1996* The Politics of Ceramic Production in the Late Classic Naco Valley, Northwestern Honduras. Lecture presented in the Scholars' Summer Lecture Colloquia, Center for American Archaeology, Kampsville, Illinois, July 7.

Internal Scholarly Lectures

2016* Global Tourism and "Uneven Development" in a Garifuna Community. Lecture presented in the Department of Anthropology Lecture Series, Department of Anthropology, University of South Florida, Tampa, March 1.

2014* Transcending "Scale Challenges" of the Water-Energy Nexus. Lecture presented in the Environmental Research Interdisciplinary Colloquium, Department of Civil and Environmental Engineering, University of South Florida, Tampa, September 24.

2013* Water and Worldview in Honduras. Lecture presented to the Undergraduate Anthropology Club, University of South Florida, Tampa, March 21.

2012* The 2012 Ancient Maya Doomsday Prophesy: Facts and Fictions. Lecture presented to the Osher Lifelong Learning Institute, University of South Florida, Tampa, November 30.

2012* My Career in Ruins: Confessions of an Archaeologist. Keynote lecture presented in the "Last Lecture Series," Housing and Residential Education, University of South Florida, Tampa, March 26.

2012* The Ancient Maya Doomsday Prophecy: Some Helpful Tips for Surviving the End of the World. Lecture presented to the Humanities Institute, University of South Florida, Tampa, March 19.

2012* New Age Spiritual Appropriations of the Maya Apocalypse Narrative. Lecture presented in the conference on "Interdisciplinary Perspectives on New Religions: Globalization and Sustainability," Department of Religious Studies, University of South Florida, Tampa, March 1.

2012* Archaeologies of Environmental Worldview. Lecture presented in the colloquium on "Studying People, Places, and Systems: Ecology and Academic Pursuits," Institute for Research in Art, University of South Florida, Tampa, February 10.

2011* From "Sitizenship" to Citizenship: Rethinking How and Why College Students Learn. Lecture presented in the Provost's Scholars Program Lunchtime Speaker Series, Honors College, University of South Florida, Tampa, November 4.

2011* Toward a Cleaner, Greener University. Lecture presented to Net Impact, College of Business, University of South Florida, Tampa, October 19.

2011* Captain Blood (with Apologies to Errol Flynn): The "Real Truth" about Admiral Sir Henry Morgan and other Pirates Who Pillaged Roatán Island, Honduras. Lecture presented to the Undergraduate Anthropology Club, University of South Florida, Tampa, October 13.

2011* Anthropology and the Four Challenges of Sustainability. Lecture presented to the Undergraduate Anthropology Club, University of South Florida, Tampa, April 21.

2011* Archaeology and Sustainability: Prospects for Research. Lecture presented to the Undergraduate Research Board, University of South Florida, Tampa, April 6.

2010* Indiana Jones Meets Al Gore: How Archaeology Is Improving the Prospects for a Sustainable World. Lecture presented in the Lunch with a Scholar Program, College of Arts and Sciences, University of South Florida, University Club, Tampa, October 7.

2010* "Greenwashing" the University: An Anthropological Perspective on Sustainability Discourse in Higher Education. Lecture presented to the Undergraduate Anthropology Club, University of South Florida, Tampa, April 22.

2010* Challenges in Reducing Greenhouse Gas Emissions for Large Metropolitan Universities. Lecture and interdisciplinary faculty panel discussion presented in the Earth Day Colloquium on Greenhouse Gases as part of the Environmental Research Interdisciplinary Colloquium, Department of Civil & Environmental Engineering, University of South Florida, Tampa, April 21.

2009* The Value of Deep-time Perspectives for Understanding Land Use Legacies. Lecture presented in the Department of Geography, University of South Florida, Tampa, November 13.

2008* Understanding Chemical Residue Evidence in Soils and Sediments. Lecture presented in the Forensic Science Brown Bag Series, Department of Anthropology, University of South Florida, Tampa, October 10.

2008* Blood, Sweat, and Tears: The Archaeology of Ancestor Worship in Ancient Honduras. Lecture presented to the Undergraduate Anthropology Club, University of South Florida, Tampa, February 7.

2007* Forensic Soil Analysis. Lecture and demonstration presented in the workshop on Outdoor Crime Scene: Forensic Archaeology and Geophysical Techniques for Locating and Exhuming Clandestine Burials, University of South Florida, Tampa, December 10.

2006* Environmental Archaeology and Sustainable Development in Honduras. Lecture presented in the Environmental Research Interdisciplinary Colloquium, Department of Environmental Science and Policy, University of South Florida, Tampa, February 15. (K. L. Davis-Salazar and E. C. Wells)

2005* A 3,000-Year Perspective on the Political Ecology of Quebrada Communities in the Naco Valley, Honduras. Lecture presented in the Latin American and Caribbean Studies Program Seminar, University of South Florida, Tampa, March 23. (K. L. Davis-Salazar and E. C. Wells)

2004* Faenas, Ferias, and Fiestas: Labor Recruitment and Political Development in Agrarian Communities in Western Honduras. Lecture presented in the Latin American and Caribbean Studies Program Seminar, University of South Florida, Tampa, February 18.

2003* Artisans, Chiefs, and Feasts: Getting around the Egalitarian Ethos in Ancient Honduras. Lecture presented in the Department of Anthropology, University of South Florida, Tampa, January 29.

2000 Trading, Raiding, and Feasting on the Southeast Maya Frontier. Lecture presented in the Brown Bag Colloquium, Department of Anthropology, Arizona State University, Tempe, October 18.

2000* Archaeology and Soil Chemistry in Residential Areas at Piedras Negras, Guatemala. Lecture presented at the Graduate Research Exposition, Arizona State University, Tempe, March 3.

1999 Early Copán's External Connections and Dynastic Foundations. Lecture presented in the Brown Bag Colloquium, Department of Anthropology, Arizona State University, Tempe, March 30.

1998 Urban Residential Micro-environments at Piedras Negras, Guatemala. Lecture presented in the Brown Bag Colloquium, Department of Anthropology, Arizona State University, Tempe, October 7.

1997* Of Sherds and Stones and Broken Bones: The 1997 Field Season at Los Pilarillos, Zacatecas, Mexico. Lecture presented in the Brown Bag Colloquium, Department of Anthropology, Arizona State University, Tempe, October 22. (E. C. Wells and J. K. Millhauser)

1996 Strategies of Power: The Organization of Ceramic Production and Distribution in a Late Classic Southeastern Mesoamerican Polity. Lecture presented in the Brown Bag Colloquium, Department of Anthropology, Arizona State University, Tempe, November 13.

1996* Figurines on Fire: The Politics of Ceramic Production at the Late Classic Site of La Sierra, Northwestern Honduras. Lecture presented in the Department of Anthropology, Oberlin College, Oberlin, Ohio, May 5.

Guest Lectures

2016* Human Impacts on Soils. Lecture and lab demonstration presented in the course, "Archaeological Science," Department of Anthropology, University of South Florida, Tampa, March 23.

2016* Systems Thinking. Lecture presented in the course, "Introduction to Global Sustainability," Patel College of Global Sustainability, University of South Florida, Tampa, February 16.

2015* Interdisciplinary, Applied Anthropology: The Dozier School for Boys Project. Lecture presented in the course "Applied Anthropology," Department of Anthropology, University of South Florida, November 18.

2015* Legitimate Stakeholder Engagement and the Challenge of Democratizing Science. Lecture presented in the course, "Sustainable Water Resources Management," Patel College of Global Sustainability, University of South Florida, October 22.

2015* From Hohokam to O'odham. Lecture presented in the course, "North American Archaeology," Department of Anthropology, University of South Florida, October 8.

2015* Reconstructing Ancient Agriculture, from the Ground Up. Lecture and lab demonstration presented in the course, "Ancient Diets," Department of Anthropology, University of South Florida, Tampa, February 27.

2014* Approaches to Teaching Anthropology with Active Learning Strategies. Lecture and activities presented in the course, "Teaching Anthropology," Department of Anthropology, University of South Florida, October 6.

2013* Contributions of Soil Analysis to Archaeological Science. Lecture and lab demonstration presented in the course, "Archaeological Science," Department of Anthropology, University of South Florida, Tampa, October 28.

2013* Ancient Diets: A Geoscience Perspective. Lecture presented in the course, "Ancient Diets," Department of Anthropology, University of South Florida, Tampa, March 4.

2012* Bringing the Campus into the Classroom: High-impact Educational Strategies for Teaching and Learning Sustainability. Lecture presented in the course, "Sustaining the Earth: An Engineering Approach," Department of Civil and Environmental Engineering, University of South Florida, Tampa, March 27.

2012* Advances in Geoforensic Archaeology. Lecture and lab demonstration presented in the course, "Archaeological Science," Department of Anthropology, University of South Florida, Tampa, March 26.

2012* Solutions for Sustainable Energy Production and Consumption at USF. Lecture presented in the course, "Energy, Environment, and Sustainability," Department of Chemical and Biomedical Engineering, University of South Florida, Tampa, February 21.

2012* Project-based Learning in Archaeology. Lecture presented in the course, "Teaching Anthropology," Department of Anthropology, University of South Florida, Tampa, January 26.

2011* Archaeological Soil Chemistry. Lecture presented in the course, "Elemental Archaeology," Honors College, University of South Florida, Tampa, October 27.

2011* Green Building for Global Learning. Lecture presented in the course, "Global Issues and Perspectives," Global Citizenship General Education Program, University of South Florida, October 4.

2011* Outcome-driven Sustainability Science: The USF Campus Case. Lecture presented in the course, "Energy, Environment, and Sustainability," Department of Chemical and Biomedical Engineering, University of South Florida, Tampa, January 27.

2011* Responding to Criticism: Opinion Essays in Anthropological Literature. Lecture presented in the course, "Writing Anthropology," Department of Anthropology, University of South Florida, Tampa, January 20.

2010* Engaging Students in Archaeology through Hands-on Learning. Lecture presented in the course, "Teaching Anthropology," Department of Anthropology, University of South Florida, Tampa, October 21.

2010* Chemical Analysis of Archaeological Soils. Lecture presented in the course, "Elemental Archaeology," Honors College, University of South Florida, Tampa, November 4.

2010* The Human Social Dimension of Sustainability. Lecture presented in the course, "Sustaining the Earth: An Engineering Approach," Department of Civil and Environmental Engineering, University of South Florida, Tampa, April 27.

2010* A Deep-time Perspective on Sustainable Land-use Practices. Lecture presented in the course, "Environmental Anthropology," Department of Anthropology, University of South Florida, Tampa, April 20.

2010* Soil Chemistry as a Tool for Archaeological Prospection. Lecture and lab demonstration presented in the course, "Archaeological Science," Department of Anthropology, University of South Florida, Tampa, March 30.

2010* From Frankenstein to Copenhagen: A Brief History of Sustainability Science. Lecture presented in the course, "Energy, Environment, and Sustainability," Department of Chemical and Biomedical Engineering, University of South Florida, Tampa, February 9.

2009* Public Archaeology in Palmarejo, Honduras. Lecture presented in the course, "Public Archaeology," Department of Anthropology, University of South Florida, October 29.

2009* Chemical Analysis of Ancient Activity Residues. Lecture presented in the course, "Elemental Archaeology," Honors College, University of South Florida, Tampa, November 3.

2008* Reconstructing Past Foodways from Ancient Soil Evidence. Lecture presented in the course, "Ancient Diets," Department of Anthropology, University of South Florida, Tampa, October 21.

2008* Tips and Tricks for Teaching Archaeology. Lecture presented in the course, "Teaching Anthropology," Department of Anthropology, University of South Florida, Tampa, October 22.

2008* Soil Chemistry in Archaeology. Lecture and lab demonstration presented in the course, "Archaeological Science," Department of Anthropology, University of South Florida, Tampa, February 26.

2007* Active Learning Archaeology. Lecture presented in the course, "Teaching Anthropology," Department of Anthropology, University of South Florida, Tampa, October 23.

2007* Ritual Economy and Social Inequality in the Classic Maya Lowlands. Lecture presented in the course, "The Ancient Maya," Department of Anthropology, University of South Florida, Tampa, February 20.

2006* NAGPRA in the New Millennium. Lecture presented in the course, "Contemporary Applied Anthropology," Department of Anthropology, University of South Florida, Tampa, November 29.

2006* Archaeology in the Classroom: Active Learning Strategies. Lecture presented in the course, "Teaching Anthropology," Department of Anthropology, University of South Florida, Tampa, October 30.

2006* Anthropological Approaches to Rural Development in Central America. Lecture presented in the course, "Latin American and Caribbean Studies Seminar," Institute for the Study of Latin America and the Caribbean, University of South Florida, Tampa, September 6.

2006* Environmental Worldview among the Lenca: Implications for Rural Development in Honduras. Lecture presented in the course, "Environmental Anthropology," Department of Anthropology, University of South Florida, Tampa, April 12.

2006* Archaeological Soil Chemistry. Lecture and lab demonstration presented in the course, "Archaeological Science," Department of Anthropology, University of South Florida, Tampa, January 24.

2005* NAGPRA: Archaeology and Native American Relations in the Twenty-first Century. Lecture presented in the course, "Contemporary Applied Anthropology," Department of Anthropology, University of South Florida, Tampa, November 17.

2005* Teaching Archaeology. Lecture presented in the course, "Teaching Anthropology," Department of Anthropology, University of South Florida, Tampa, November 1.

2005* Archaeology is Anthropology- Lecture presented in the course, "Foundations of Applied Anthropology," Department of Anthropology, University of South Florida, Tampa, September 20.

2005* Maya Refugee Camps: A New Kind of Community. Lecture presented in the course, "Mexico and Central America," Department of Anthropology, University of South Florida, Tampa, April 25.

2004* Prehispanic Maya Religion and Ritual Practice. Lecture presented in the course, "Religion and Society in Latin America," Department of History, University of South Florida, Tampa, September 14.

2004* Ancient Maya Art and Architecture. Lecture presented in the course, "Ancient Latin American Culture," Department of Humanities and American Studies, University of South Florida, Tampa, September 2.

2004* Social Theory and Soil Chemistry: Recent Archaeological Research in Honduras. Lecture presented in the course, "Graduate Proseminar," Department of Anthropology, University of South Florida, Tampa, February 26.

2004* Geoarchaeology and Anthrosols: Modern Approaches. Lecture presented in the course, "Archaeological Science," Department of Anthropology, University of South Florida, Tampa, January 20.

2003* Creating Graphic Displays of Archaeological Data. Lecture presented in the course, "Archaeological Methods," Department of Anthropology, University of South Florida, Tampa, November 12.

2003* From Chiefdom to State and Back Again: Recent Archaeological Research in Honduras. Lecture presented in the "Senior Honors Seminar," Department of Anthropology, University of South Florida, Tampa, November 3.

2003* K'inich Yax K'uk' Mo' and the Image of a City: The Ancient Maya City of Copán, Honduras. Lecture presented in the course, "Ancient Latin American Culture," Department of Humanities and American Studies, University of South Florida, Tampa, September 15.

2002* Quantitative and Formal Approaches to Archaeological Data. Lecture presented in the course, "Introduction to Archaeological Analysis," Department of Anthropology, Brandeis University, Waltham, Massachusetts, April 9.

2001* The Archaeology of Soil Chemistry. Lecture presented in the course, "Principles of Archaeometry," Department of Anthropology, University of Wisconsin, Madison, October 12.

1998* Introduction to Maya Hieroglyphic Writing. Lecture presented in the course, "Prehispanic Civilizations of Middle America," Department of Anthropology, Arizona State University, Tempe, November 4.

PROFESSIONAL SERVICE

<u>Editor</u>

2016+ Editorial Board, *American Anthropologist* (American Anthropological Association)

2012+ Global Coordinator, *Current Research Online* (Society for American Archaeology)

2010+ Associate Editor, *Archaeological and Anthropological Sciences* (Springer – Earth Sciences)

2010+ Editorial Committee Member, *Journal of Agriculture, Food Systems, and Community Development* (New Leaf Associates)

2010-2012 Contributing Editor for the Archaeology Division, *Anthropology News* (American Anthropological Association)

2005-2009 Editor-in-Chief, *SAS Bulletin, Newsletter of the Society for Archaeological Sciences* (Society for Archaeological Sciences)

Officer

2016+ Advisor to the Board of Directors, Florida Brownfields Association
2010-2012 Archaeology Division Secretary, American Anthropological Association
2008-2011 Executive Board Member, Society for Economic Anthropology
2001-2004 Vice President for Membership Development, Society for Archaeological Sciences

Committee Member

2015-2018 Publications Committee (Ex Oficio), Society for American Archaeology
2015-2018 Minority Scholarships Committee, Society for American Archaeology
2015-2018 Douglas C. Kellogg Fund Committee, Society for American Archaeology
2012-2013 Annual Meeting Program Committee, Society for American Archaeology
2009-2010 Local Organizing Committee, International Symposium on Archaeometry
2007-2010 Committee on Curriculum, Society for American Archaeology
2006-2007 Annual Meeting Local Arrangements Committee, Society for Applied Anthropology
1997-2002 Student Affairs Committee, Society for American Archaeology

Society Member

2015+ Florida Brownfields Association
2013+ American Association for the Advancement of Science
2010-2012 U.S. Green Building Council (institutional representative)
2009-2012 Association for the Advancement of Sustainability in Higher Education (institutional representative)
2009-2012 Council on Undergraduate Research (institutional representative)
2005+ Society for Applied Anthropology (Member: 2005-2012, Fellow: 2012-present)
2004+ Society for Economic Anthropology
1997+ Society for Archaeological Sciences
1996+ Sigma Xi, The Scientific Research Society (Associate Member: 1996-2004, Full Member: 2004-present)
1995+ American Anthropological Association
1994+ Society for American Archaeology
1993+ Archaeological Conservancy
1992-1996 Archaeological Institute of America

Organizer/Chair/Moderator

2016 Co-Organizer and Co-Chair (with D. Wallman) of the paper symposium, "The Environmental Legacies of Colonialism in the Neotropics," at the 81st Annual Meeting of the Society for American Archaeology, Orlando, Florida.

2016 Co-Organizer and Co-Chair (with L. M. Whiteford and R. K. Zarger) of the paper symposium, ""Engineering" a New Anthropology: Interdisciplinary Approaches to Water-Energy Challenges," at the 76th Annual Meeting of the Society for Applied Anthropology, Vancouver, British Columbia, Canada.

2016 Co-Organizer and Co-Chair (with L. M. Whiteford) of the NSF Research Team Seminar, "Innovative Approaches to the Global Water-Energy Nexus," School for Advanced Research, Santa Fe, New Mexico.

2015 Co-Organizer (with L. M. Whiteford) of the roundtable, "The Water-Energy Nexus: Anthropology and Engineering Shape a New Research Paradigm," at the 114th Annual Meeting of the American Anthropological Association, Denver, Colorado.

2014 Co-Organizer (with E. H. Kimmerle and A. T. Jackson) of the conference, Research and Remembrance: 100 Years after the Fatal Fire at Dozier, University of South Florida, Tampa.

2014 Co-Organizer (with A. T. Jackson and E. H. Kimmerle) and Moderator of the forum, "Contested Places and the Invisibility of Black History: Recent Investigations at Boot Hill, a Segregation-era African-American Burial Ground in Northwest Florida," at the Race and Place: Cultural Landscapes of Black Life in America national conference, Institute on Black Life, University of South Florida, Tampa.

2012 Co-Organizer and Co-Chair (with C. I. Roos) of the paper symposium, "Geoarchaeology of Ritual Behavior and Sacred Places," at the 77th Annual Meeting of the Society for American Archaeology, Memphis, Tennessee.

2011 Chair of the session, "Indigenous Perspectives on Sustainability," at the conference on Eastern and Indigenous Perspectives on Sustainability and Conflict Resolution, University of South Tampa, Florida.

2011 Co-Organizer and Co-Host (with M. A. Biggs) of "Earth Day Tampa Bay Festival and Green Business Expo," Botanical Gardens, University of South Florida, Tampa, Florida.

2011 Co-Organizer and Co-Moderator (with L. E. Lucas) of the panel, "Fostering Student Global Leaders," at the 8th Annual USF Diversity Summit, University of South Florida, Tampa, Florida.

2011 Co-Organizer and Co-Moderator (with L. L. Runge) of the panel, "Cultural Sustainability," at the Global Humanities Symposium, University of South Florida, Tampa, Florida.

2011 Co-Team Leader (with K. Levy) for the Gulf Beach Communities Team at the "Resilient Tampa Bay" conference, Patel Center for Global Solutions, University of South Florida, Tampa, Florida.

2010 Organizer and Moderator of the four-part colloquium series, "Global Challenges for a Sustainable Future," Honors College, University of South Florida, Tampa, Florida.

2010 Co-Organizer and Co-Host (with S. M. Lyon) of the Annual Meeting of the Society for Economic Anthropology, "Contested Economies: Global Tourism and Cultural Heritage," Tampa, Florida.

2010 Co-Organizer (with A. J. Figueroa and W. A. Goodwin) of the poster symposium, "The Use, Abuse, and Lack of Archaeology in Heritage Tourism and Development in the Bay Islands of Honduras," at the 75th Annual Meeting of the Society for American Archaeology, St. Louis, Missouri.

2009 Co-Organizer and Co-Moderator (with P.-L. Yu) of the forum, "Toward a New Curriculum: The Future of Applied Archaeology in Higher Education," sponsored by the SAA Committee on Curriculum, at the 74th Annual Meeting of the Society for American Archaeology, Atlanta, Georgia.

2006 Co-Organizer and Co-Chair (with P. A. McAnany) of the 5th Cotsen Advanced Seminar, "Ritual Economy Untethered by Space, Time, or Economic Form," at the Cotsen Institute of Archaeology, University of California, Los Angeles.

2006 Co-Organizer and Co-Leader (with D. A. Storer) of the workshop, "Chemistry's Dirty Little Secret: Soil Analysis for Inquiry-Based Chemical Education," at the 19th Biennial Conference on Chemical Education, Purdue University, West Lafayette, Indiana.

2005 Co-Organizer and Co-Host (with K. L. Davis-Salazar and T. F. Doering) of the Southeast Conference on Mesoamerican Archaeology and Ethnohistory, University of South Florida, Tampa.

2003 Co-Organizer and Co-Chair (with K. L. Davis-Salazar) of the paper symposium, "Mesoamerican Ritual Economy: Archaeological and Ethnological Perspectives," at the 102nd Annual Meeting of the American Anthropological Association, Chicago, Illinois.

2003 Co-Organizer and Co-Chair (with R. E. Terry) of the paper symposium, "Advances in Archaeological Approaches to Soil Chemistry," sponsored by the Society for Archaeological Sciences, at the 68th Annual Meeting of the Society for American Archaeology, Milwaukee, Wisconsin.

2002 Co-Organizer and Co-Moderator (with D. M. Digrius) of the forum, "Interdisciplinary Research and the Future of Graduate Education in Archaeology," sponsored by the SAA Student Affairs Committee, at the 67th Annual Meeting of the Society for American Archaeology, Denver, Colorado.

2001 Co-Organizer and Co-Chair (with B. A. Nelson) of the paper symposium, "Social and Environmental Practices at Epiclassic La Quemada, Northwest Mexico," at the 66th Annual Meeting of the Society for American Archaeology, New Orleans, Louisiana.

2000 Chair of the session, "The Archaeology of Politics and Ritual," at the 99th Annual Meeting of the American Anthropological Association, San Francisco, California.

<u>Discussant</u>

2016 Discussant in the roundtable, "Just Water by Design: Collaborations between Anthropologists Engineers, and Communities," organized by R. K. Zarger and M. R. Cairns, at the 115th Annual Meeting of the American Anthropological Association, Minneapolis, Minnesota.

2015 Discussant in the roundtable, "The Water-Energy Nexus: Anthropology and Engineering Shape a New Research Paradigm," organized by E. C. Wells, L. M. Whiteford, and R. K. Zarger, at the 114th Annual Meeting of the American Anthropological Association, Denver, Colorado.

2015 Discussant in the forum, "Common Reading Experience Faculty Panel: 'Full Body Burden: Growing up in the Nuclear Shadow of Rocky Flats' by Kristen Iversen," organized by J. L. S. Moore, Office of Undergraduate Studies, University of South Florida, Tampa.

2014 Discussant in the forum "USF Research Themes and Findings," organized by E. H. Kimmerle, at the conference, Research and Remembrance: 100 Years after the Fatal Fire at Dozier, University of South Florida, Tampa.

2014 Discussant for the symposium, "Recent Trends in Plaza Investigations in the Maya Lowlands," organized by B. Capp and M. K. Brown, at the 79th Annual Meeting of the Society for American Archaeology, Austin, Texas.

2013 Discussant in the Executive Roundtable, “Civil Rights and Restorative Justice: The Story of Who is Buried in ‘Boot Hill Cemetery’ at the Former Dozier School for Boys in Marianna, Florida,” organized by A. T. Jackson, at the 112th Annual Meeting of the American Anthropological Association, Chicago, Illinois.

2013 Discussant in the roundtable, “Recruitment and Retention of Students of Color in Anthropology: Task Force on Race and Racism,” organized by K. Brodkin and K. M. Davalos, at the 112th Annual Meeting of the American Anthropological Association, Chicago, Illinois.

2013 Discussant in the learning lab, “Working the Room: How to Network without Getting Overwhelmed,” organized by M. Piscitelli and L. Short, at the 78th Annual Meeting of the Society for American Archaeology, Honolulu, Hawaii.

2011 Discussant in the forum, “Section Summit on the Changing Job Market and Student Training: Linking Anthropology Departments and Practice,” organized by K. Vacanti Brondo, W. Bartlo, and M. Odell Butler, at the 110th Annual Meeting of the American Anthropological Association, Montreal, Quebec, Canada.

2011 Discussant for the symposium, “Ceramic Ecology XXV: Current Research on Ceramics 2011,” organized by C. C. Kolb, at the 110th Annual Meeting of the American Anthropological Association, Montreal, Quebec, Canada.

2011 Discussant for the colloquium, “Out of Place: Relations, Locations, Positions,” organized by D. Richards, English Graduate Student Association, University of South Florida, Tampa.

2011 Discussant in the forum, “Anthropogenic Sediments as Archaeological Objects,” organized by M. Goodman-Elgar, at the 76th Annual Meeting of the Society for American Archaeology, Sacramento, California.

2011 Discussant for the symposium, “Approaches to Prehispanic Agricultural Soils in the New World,” organized by M. Kruse-Peeples and C. Strawhacker, at the 76th Annual Meeting of the Society for American Archaeology, Sacramento, California.

2010 Discussant in the forum, “’Saving the Lore’ Version 2.0-: Sustainability, Heritage Studies, Cultural Revitalization, and Development,” organized by A. B. Ebbitt McGill and K. A. Pyburn, at the 109th Annual Meeting of the American Anthropological Association, New Orleans, Louisiana.

2008 Discussant for the symposium, “The Formative Period in Mesoamerica: Views of Olman,” organized by T. F. Doering, at the 73rd Annual Meeting of the Society for American Archaeology, Vancouver, British Columbia, Canada.

2007 Discussant for the symposium, “Ceramic Ecology XXI: Current Research on Ceramics 2007,” organized by C. C. Kolb, at the 106th Annual Meeting of the American Anthropological Association, Washington, DC.

2007 Discussant in the forum, “Collaborative Solutions to Global Insecurities: Challenges, Opportunities, and Potential,” organized by S. E. Bird and N. Romero-Daza, at the 67th Annual Meeting of the Society for Applied Anthropology, Tampa, Florida.

2005 Discussant in the forum, “Bridging the Gap: Integrating Archaeological Sciences and Archaeology,” organized by S. N. Lengyel and A. V. Margaris, at the 70th Annual Meeting of the Society for American Archaeology, Salt Lake City, Utah.

2005 Discussant for the symposium, "Planning, Production, Power, and Pyrotechnics: Recent Research in the Cacaulapa and Chamelecon Valleys, Northwestern Honduras," organized by E. E. Bell and Y. Desailly-Chanson, at the 70th Annual Meeting of the Society for American Archaeology, Salt Lake City, Utah.

Book Manuscript Reviewer

2015 Social Sciences and Humanities, Wiley Blackwell
2014 Archaeology, Oxford University Press; Archaeology and Anthropology, University Press of Colorado
2013 Archaeology and Anthropology, University Press of Colorado
2011 Anthropology, Routledge/Taylor & Francis Group; Anthropology, Pearson; Research Methods, Statistics and Evaluation, SAGE Publications
2010 Archaeology and Anthropology, Left Coast Press; Anthropology, Westview Press
2009 Social Sciences, Springer
2008 Archaeology and Anthropology, University Press of Colorado; Social and Behavioral Sciences, Blackwell Publishing; Social Sciences, Springer

Article Manuscript Reviewer

2016 *Current Anthropology*; *Journal of Archaeological Science*; *Journal of Environmental Archaeology*; *Water Resources Research*
2015 *Water Resources Research*; *Sustainability* (2), *American Ethnologist* (2); *Science, Technology, and Human Values*; *PoLAR: Political and Legal Anthropology Review*; *Archaeometry*; *Geoarchaeology* (2); *Historical Archaeology*; *Journal of Archaeological Science: Reports* (2); *Southeastern Archaeology* (7)
2014 *The Holocene*, *African Journal of Environmental Science and Technology*, *Geoarchaeology*; *Journal of Archaeological Science: Reports*; *Journal of Ethnobiology*; *SOIL*; *Archaeometry*; *Latin American Antiquity*; *Journal of Archaeological Science*; *Journal of Agriculture, Food Systems*, and *Community Development* (3)
2013 *American Anthropologist*; *Economic Anthropology*; *American Antiquity* (2); *Anales de Antropología*; *Quaternary International*; *Advances in Archaeological Practice*; *Archaeological Prospection*; *Journal of Archaeological Science* (3); *The Sheffield Graduate Journal of Archaeology*
2012 *American Antiquity*; *Journal of Archaeological Science* (4); *Applied Geography*; *Latin American Antiquity*; *Journal of Agriculture, Food Systems, and Community Development*; *Assemblage*
2011 *Current Anthropology*; *Journal of Archaeological Science* (2); *Journal of Agriculture, Food Systems, and Community Development*
2010 *American Anthropologist*; *Current Anthropology*; *Journal of Material Culture*; *Journal of Archaeological Science* (2); *Ancient Mesoamerica*; *Agriculture and Human Values*; *Archaeological and Anthropological Sciences*; *Journal of Field Archaeology*
2009 *Journal of Archaeological Science* (2); *Journal of the Royal Anthropological Institute*; *Globalizations*
2008 *Current Anthropology*; *Journal of Social Archaeology*; *Journal of Archaeological Research*; *Journal of Field Archaeology*

2007 *Journal of Anthropological Research*
2006 *Current Anthropology*; *Journal of Archaeological Science*; *Chemosphere*; *Ancient Mesoamerica*; *Geoarchaeology*; *Latin American Antiquity*
2005 *Journal of Archaeological Science* (3)
2004 *The Holocene*; *Latin American Antiquity*
2003 *Journal of Archaeological Science*
2002 *Latin American Antiquity*
2001 *Journal of Archaeological Science*

Research Proposal Reviewer

2016 Division of Sponsored Research, University of South Florida
2015 Doctoral Dissertation Improvement Grant Program (SBE-BCS Anthropological Sciences-Archaeology), National Science Foundation
2014 Archaeology Program (SBE-BCS Anthropological Sciences), National Science Foundation (3); Doctoral Dissertation Improvement Grant Program (SBE-BCS Anthropological Sciences-Archaeology), National Science Foundation; Young Explorer Grant Program, National Geographic Society; Committee for Research and Exploration Grant Program, National Geographic Society (2)
2013 Archaeology Program (SBE-BCS Anthropological Sciences), National Science Foundation (2); Committee for Research and Exploration Grant Program, National Geographic Society (3)
2012 Archaeology Program (SBE-BCS Anthropological Sciences), National Science Foundation
2011 Archaeology Program (SBE-BCS Anthropological Sciences), National Science Foundation; Doctoral Dissertation Improvement Grant Program (SBE-BCS Anthropological Sciences-Archaeology), National Science Foundation
2010 Doctoral Dissertation Improvement Grant Program (SBE-BCS Anthropological Sciences-Archaeology), National Science Foundation
2009 Archaeometry Program (SBE-BCS Anthropological Sciences), National Science Foundation; Doctoral Dissertation Improvement Grant Program (SBE-BCS Anthropological Sciences-Archaeology), National Science Foundation; Committee for Research and Exploration Grant Program, National Geographic Society
2008 Archaeometry Program (SBE-BCS Anthropological Sciences), National Science Foundation; Archaeology Program (SBE-BCS Anthropological Sciences), National Science Foundation; Division of Sponsored Research, University of South Florida
2007 Division of Sponsored Research, University of South Florida; Office of Undergraduate Research, University of South Florida
2006 Division of Sponsored Research, University of South Florida; Office of Undergraduate Research, University of South Florida; Center for 21st Century Teaching Excellence, University of South Florida
2005 Division of Preservation and Access, National Endowment for the Humanities; Division of Sponsored Research, University of South Florida; Center for 21st Century Teaching Excellence, University of South Florida

Awards Judge

2014 Science Fair, Grades 3-7, Corpus Christi Catholic School, Temple Terrace, Florida
2014 NSF-Research Experience for Teachers in Engineering and Computer Science—Water Awareness Research and Education Poster Competition, University of South Florida, Tampa
2014 Harold K. Schneider Student Prize in Economic Anthropology, Society for Economic Anthropology
2014 6th Annual Graduate Student and Postdoctoral Research Symposium, Office of Graduate Studies, University of South Florida, Tampa
2014 Senior and Junior Divisions—Social/Behavioral Sciences, Hillsborough Regional Science, Technology, Engineering, and Mathematics Fair, Tampa Convention Center, Tampa
2013 Seventh Annual Oktoberfest Research Poster Competition, College of Arts and Sciences, University of South Florida, Tampa
2013 Harold K. Schneider Student Prize in Economic Anthropology, Society for Economic Anthropology
2013 Senior Division—Chemistry, Hillsborough Regional Science, Technology, Engineering, and Mathematics Fair, Tampa Convention Center, Tampa
2011 NSF-REU Tampa Interdisciplinary Environmental Research Poster Competition, University of South Florida, Tampa
2011 Humanities Student Paper Competition, UR USF Undergraduate Research Symposium, University of South Florida, Tampa
2010 Seventh Annual Ethics Bowl, Society for American Archaeology, St. Louis, Missouri
2010 Society for Archaeological Sciences R.E. Taylor Student Poster Competition, Annual Meeting of the Society for American Archaeology, St. Louis, Missouri
2010 Social Sciences Student Paper Competition, UR USF Undergraduate Research Symposium, University of South Florida, Tampa
2009 Society for Archaeological Sciences R.E. Taylor Student Poster Competition, Annual Meeting of the Society for American Archaeology, Atlanta, Georgia
2008 Society for Archaeological Sciences R.E. Taylor Student Poster Competition, Annual Meeting of the Society for American Archaeology, Vancouver, British Columbia, Canada
2008 Social Sciences Student Poster Competition, UR USF Undergraduate Research Symposium, University of South Florida, Tampa
2007 Society for Archaeological Sciences R.E. Taylor Student Poster Competition, Annual Meeting of the Society for American Archaeology, Austin, Texas
2007 Social Sciences Student Poster Competition, UR USF Undergraduate Research Symposium, University of South Florida, Tampa
2005 Society for Archaeological Sciences R.E. Taylor Student Poster Competition, Annual Meeting of the Society for American Archaeology, Salt Lake City, Utah
2004 Society for Archaeological Sciences R.E. Taylor Student Poster Competition, Annual Meeting of the Society for American Archaeology, Montreal, Quebec, Canada
2003 Society for Archaeological Sciences R.E. Taylor Student Poster Competition, Annual Meeting of the Society for American Archaeology, Milwaukee, Wisconsin
2003 Arizona American Indian Science and Engineering Fair, Arizona State University-Polytechnic Campus, Mesa, Arizona

2002 Society for Archaeological Sciences R.E. Taylor Student Poster Competition, Annual Meeting of the Society for American Archaeology, Denver, Colorado
2001 Society for Archaeological Sciences R.E. Taylor Student Poster Competition, Annual Meeting of the Society for American Archaeology, New Orleans, Louisiana
1997 Middle School Science Fair, Kyrene Aprende Middle School, Tempe, Arizona

UNIVERSITY SERVICE

University

2015-2018 Member, Faculty Senate, University of South Florida
2015-2016 Member, Director of Office of National Scholarships Search Committee
2015-2016 Member, Business Advisory Board, Enactus at USF
2014-2016 Member, Student Green Energy Fund Technical Advisory Group, Patel College of Global Sustainability
2014-2015 Member, Advisory Committee, Institute on Black Life
2013-2014 Member, Strategic Communication of Value Committee, College of Arts and Sciences
2012-2016 Member, Core Facilities Committee, College of Arts and Sciences
2012-2016 Member, Faculty Advisory Committee, Institute for Research in Art
2012-2013 Member, Education Abroad Scholarship Selection Committee, USF World
2011-2013 Member, Advisory Committee, Office of Undergraduate Research
2011-2012 Faculty Advisor for the Green Living and Learning Community, Housing and Residential Education, University of South Florida
2011-2012 Faculty Advisor for Keep Our School Beautiful, College Chapter Affiliate, Keep Tampa Bay Beautiful, University of South Florida
2011-2012 Member, USF National Reputation Taskforce, University Communications and Marketing
2011-2012 Chair, Student Green Energy Fund Council, Office of Sustainability
2011-2012 Chair, Campus Tree Advisory Committee, Office of Sustainability
2011-2012 Member, Research Faculty Search Committee, Florida Center for Community Design + Research
2011-2012 Member, International Risk and Safety Analyst Search Committee, USF World
2011-2012 Member, Program Director for Living and Learning Communities Search Committee, Housing and Residential Education
2011-2012 Member, Living and Learning Communities Council, Housing and Residential Education
2011-2012 Member, USF: Unstoppable Campaign Representatives Program, USF Foundation
2010-2016 Faculty Fellow, Housing and Residential Education, University of South Florida
2010-2012 Member, Global Citizenship Program Advisory Committee, Office of Undergraduate Studies
2010-2011 Member, Sustainability and Conflict Resolution Conference Planning Committee, Center for India Studies
2010-2011 Member, USF System Goal Setting Team, Office of the President

2010-2011 Member, Campus Master Plan Work Group, Facilities Planning and Construction
2010-2011 Member, Director of Community Engagement Search Committee, Office of the Provost
2010-2011 Member, Global Sustainability and Health Workshop Planning Committee, College of Public Health
2010-2011 Member, Resilient Tampa Bay Planning and Organizing Committee, Patel School of Global Sustainability
2010-2011 Member, Oil Spill Congress Planning Committee, Office of Research and Innovation
2009-2012 Member, Faculty Advisory Council, Patel School of Global Sustainability
2009-2012 Member, Business Advisory Board, USF Students In Free Enterprise
2009-2012 Chair, Sustainability Initiative Steering Committee, Office of the Provost
2009-2012 Member, Campus Leadership Council, Office of the Provost
2009-2012 Member, Campus Development Committee, Office of the President
2009-2012 Member, Faculty Advisory Board, Institute for the Study of Latin America and the Caribbean
2009-2012 Member, Graduate Student Success Fellowship Committee, Graduate School
2009-2010 Member, School of Global Sustainability Executive Director Search Committee, Office of the Provost
2009-2010 Member, School of Global Sustainability Exploratory Committee, Office of the Provost
2009-2010 Member, M.A. in Global Sustainability Advisory Group, Graduate School
2009-2010 Member, Global Change Conference Steering Committee, Office of Research and Innovation
2009-2010 Member, Textbook Affordability Committee, Office of the Provost
2008-2009 Member, USF World Initiative Task Force (Co-Chair, Graduate Committee), Office of the Provost
2007-2010 Member, Graduate Council (Member, Curriculum Committee), Faculty Senate
2007-2008 Member, Director Search Committee, Education Abroad
2005-2006 Chair, Undergraduate Committee, College of Arts and Sciences
2004-2007 Member, Student Grievance Committee, College of Arts and Sciences
2004-2005 Member, Undergraduate Committee, College of Arts and Sciences

<u>Department</u>
2015-2016 Member, Graduate Research Awards Committee
2015-2016 Member, Graduate Committee
2015-2016 Chair, Faculty Advisory Committee
2014-2015 Member, Faculty Advisory Committee
2014-2016 Member, Diversity Committee
2013-2014 Member, Visiting Instructor (Forensic Anthropology) Search Committee
2013-2014 Member, The Borman Research Award in Interdisciplinary Anthropology Review Committee
2012-2015 Chair, Peace Corps Masters International Anthropology Program Development Committee

2012-2013 Chair, Visiting Instructor (Archaeology) Search Committee
2012-2013 Member, Visiting Assistant Professor (Forensic Anthropology) Search Committee
2012-2013 Member, The Alliance for Applied Research in Education and Anthropology Research Achievement Award Review Committee
2011-2015 Member, The Whiteford Research Achievement Award in Medical Anthropology Review Committee
2009-2011 Member, Undergraduate Task Force
2009-2010 Member, Instructional Postdoctoral Scholar Search Committee
2008-2010 Member, Faculty Advisory Committee
2008-2009 Chair, Graduate Admissions Committee
2007-2008 Chair, Community Advisory Board Committee
2007-2008 Chair, Curriculum Review Committee
2006-2007 Member, Curriculum Review Committee
2006-2007 Member, Graduate Admissions Committee
2005-2006 Chair, Assistant Professor (Archaeology) Search Committee
2004-2007 Member, Research Committee
2004-2005 Member, Undergraduate Colloquium Committee

Ph.D. Committees (*Chair)

n.d. Adam Golob, human trafficking, Costa Rica (Government and International Affairs)
n.d. Whitney A. Goodwin, interregional interaction, agriculture, foodways, identity, Honduras, Roatán (Southern Methodist University)
n.d. Jose Peña, Andean Archaeology, power dynamics, urbanism, imperialism, state formation, material culture
n.d. Suellen R. Regonini, visual anthropology, economic anthropology, media, virtual communities
n.d.* Anthony R. Tricarico, environmental anthropology, agriculture, sustainability, landscapes, Caribbean
-awarded a 2016 Graduate Student Research Grant, Institute for the Study of Latin America and the Caribbean, University of South Florida; awarded the 2015 Kathryn M. Borman Research Award in Interdisciplinary Anthropology, University of South Florida
2015 Rhonda H. Coolidge, "Marginalization and Mortality: Osteological Stress Markers and Risk of Death in a Documented U.S. Skeletal Collection, 1866-1945"
2015* Kara A. Fulton, "Community Identity and Social Practice during the Terminal Classic Period at Actuncan, Belize"
-awarded a National Science Foundation Dissertation Improvement Grant (BCS-1418480); awarded the 2015 Provost's Award for Outstanding Teaching by a Graduate Teaching Assistant, University of South Florida; awarded the 2015 R.E. Taylor Student Poster Award, Society for Archaeological Sciences; awarded the 2014/2015 Anthropology Dissertation Completion Fellowship, University of South Florida; finalist for the 2011 Student Paper Award, Society for American Archaeology; published in *Archaeological and Anthropological Sciences*; currently

a Professional Development Specialist for the Global Citizens Project, Office of Undergraduate Studies, University of South Florida

2015 Caryssa M. Joustra, "A Framework for Determining Building Water Cycle Resilience Using a Dynamic Water Resilience Assessment Model (WRAM)" (Civil and Environmental Engineering) [External Chair]

2015* José E. Moreno Cortés, "Living among the Ruins of an Unknown Past: Economic Realities, Sociocultural Perceptions, and Archaeological Practice in the Naco Valley, Honduras"

-recipient of the 2007 Successful Latino Student Award; recipient of the Pan American Fellowship, University of South Florida, 2007-2009; recipient of the Latino Fellowship Award, University of South Florida, 2004-2007; published in *Latin American Antiquity*, *Journal of Field Archaeology*, and *Etude et Gestion des Sols*

2015 Rheta E. Lanehart, "Patterns of Consumption: Ceramic Residue Analysis at Liangchengzhen, Shandong, China"

2014 Anna L. Pollock, "Mid-Holocene Speleothem Climate Proxy Records from Florida and Belize" (Geosciences) [External Chair]

2014 Hasan J. Ashkanani, "Interregional Interaction and Dilmun Power in the Bronze Age: A Characterization Study of Ceramics from Bronze Age Sites in Kuwait"

2014 Michelle D. Sivilich, "Measuring the Adaptation of Military Response During the Second Seminole War Florida (1835-1842): KOCOA and The Role of a West Point Military Academy Education"

2013 Dawn M. Hayes, "Archaeological and Historic Preservation in Tampa, Florida"

2013 Daniel B. Hughes, "Circulating Ceramics in the Eighteenth Century Colonial Circum-Caribbean: Towards an Archaeological Model for Inter-Site Comparison"

2013* Lorena D. Mihok, "Unearthing Augusta: Landscapes of Royalization on Roatán Island, Honduras"

-awarded a 2010 Research Travel Grant, Institute for the Study of Latin America and the Caribbean, University of South Florida; published in *International Journal of Historical Archaeology*; currently Visiting Assistant Professor of Anthropology, Eckerd College

2012 Rebecca M. Rinsema, "Listening in Action: Students' Mobile Music Experiences in the Digital Age" (Music Education) [External Chair]

2012 Cynthia Grace, "Fishermen, Politics, and Participation: An Ethnographic Examination of Commercial Fisheries Management in St. Croix, U.S. Virgin Islands"

2011 Michelle H. Raxter, "Egyptian Body Size: A Regional and Worldwide Comparison"

2010 Julie F. Troum, "Empowered for Practice: The Relationship among Perceived Autonomy Support, Competence, and Task Persistence of Undergraduate Applied Music Students" (Music Education) [External Chair]

2009 Elizabeth E. Cooper, "Hunger of the Body, Hunger of the Mind: The Experience of Food Insecurity in Rural, Non-Peninsular Malaysia"

2008 Luca Lai, "The Interplay of Economic, Climatic, and Cultural Change Investigated through Isotopic Analyses of Human Bone Tissue: The Case of Sardinia 4000-1900 BC"

2007 Lori D. Collins, "Understanding and Closing the Gaps: A GAP Audit Approach Linking Archaeology and Land Acquisition Strategies in Florida"

2007* Travis F. Doering, "An Unexplored Realm in the Heartland of the Southern Gulf Olmec: Investigations at El Marquesillo, Veracruz"

-awarded a National Science Foundation Dissertation Improvement Grant (BCS-0424526); winner of the 2007 Outstanding Dissertation Award, University of South Florida; currently Research Assistant Professor in the School of Geosciences and Co-Director of the Alliance for Integrated Spatial Technologies, University of South Florida

<u>M.A. Committees (*Chair)</u>

n.d. Gabriella Balsam, environmental science and policy, water management, Florida (School of Geosciences)

n.d.* Jaine Danlag, international development, Southeast Asia, Peace Corps Master's International Program in Applied Anthropology

n.d. Alexander Delgado, spatialization theory, plazas, soil chemistry, Southeastern archaeology, Crystal River

n.d. Kendal Jackson, "Pollen Analysis of Soil Cores from Crystal River Site, Citrus County, Florida"

n.d.* Eric S. Koenig, "A Collaborative, Community-Based Approach to Understanding Cultural and Natural Resource Management on the Placencia Peninsula, Belize"

-awarded first prize in the Valene Smith Tourism Poster Competition, Society for Applied Anthropology; awarded a research grant (as Co-PI) from InHerit; awarded a research grant (as Co-PI) from the USF Office of Community Engagement and Partnerships; published in *Journal of Cleaner Production*

n.d.* Gabrielle Lehigh, environmental justice, brownfields, Florida

n.d. Jaime Sykes, forensic anthropology, bioarchaeology, trauma analysis, forensic taphonomy, paleopathology

n.d. Shaun West, Southeastern archaeology, community formation, Kolomoki

n.d. Alexis Winter, "A Case Study of Conservation Policy Implementation through Community Partnerships on Chicago's South Side"

2015 Martin W. Menz, "Like Blood from a Stone: Teasing out Social Difference from Lithic Production Debris at Kolomoki (9ER1)"

2015 Liotta Noche-Dowdy, "Multi-Isotope Analysis to Reconstruct Dietary and Migration Patterns of an Avar Population from Sajópetri, Hungary, AD 568-895"

2015* Xiaomin Lin, "Ecotourism Certification in Australia: A Case Study" (College of Global Sustainability)

2015 Stephanie Diana Paredes, "Adoption of the SAWYER Water Filter in Peru" (Department of Civil and Environmental Engineering)

2015* Suzanna M. Pratt, "Landscape Legacies of Sugarcane Monoculture at Betty's Hope Plantation, Antigua, West Indies"

-winner of the 7th Annual Graduate Student and Postdoctoral Symposium, University of South Florida; Honorable Mention for Graduate Student Oral Presentation by the Anthropological Sciences Section, 79th Annual Meeting of

the Florida Academy of Sciences; finalist for the Cornelia Futor Memorial Student Archaeology Grant, awarded by the Time Sifters Society at the 67th Annual Meeting of the Florida Anthropological Society; currently employed by as a Research Analyst for the Joint Legislative Audit and Review Committee, Washington State Legislature

2015* Diana Catalina Zafra-Gutiérrez, "Sustainable Tourism in Costa Rica: A Case Study of the DoubleTree Resort by Hilton Central Pacific" (College of Global Sustainability)

-current an Assistant Program Manager for Global Projects with the International City/County Management Association in Washington, DC

2014* Paige G. Phillips, "Examining Activity Organization in Plazas through Geochemical Analysis at Tlalancaleca, Puebla, Mexico (800 BC-AD 100)"

-awarded the 2013 Fathauer Graduate Fieldwork Travel Grant, Department of Anthropology, University of South Florida; currently employed as an Archaeological Data Analyst for the Florida Master Site File, Division of Historical Resources, Florida Department of State

2014 Sean P. Norman, "Modeling the Relationship between Climate Change and Landscape Modification at the Crystal River Site (8C11), Florida"

2014 Steven A. Williams, "Trash Talk: Understanding Food Waste at a Charter Elementary School in Florida"

2014 Patrick T. Woodruff, "Etruscan Trade Networks: Understanding the Significance of Imported Materials in Remote Etruscan Settlements through Trace Element Analysis Using Non-destructive X-ray Fluorescence Spectrometry"

2014 Susana R. Alvarado, "Determining What Factors Affect Peoples' Perceptions of the Use of Reclaimed Water a Source for Potable Water: A Study within Hillsborough County, Florida" (Environmental Science and Policy)

2013 Margeaux Chavez, "Desert in the Springs: Ethnography of a Food Desert"

2013* Melanie N. Coughlin, "Cruising for Culture: Mass Tourism and Cultural Heritage on Roatán Island, Honduras"

-published in *The SAA Archaeological Record*; currently Manager of Visitor Experience and Volunteers, Moravian Museum of Bethlehem (A National Historic Landmark), Historic Bethlehem Museums and Sites, Bethlehem, Pennsylvania

2013 David J. Godfrey, "Ecological and Human Diversity in Hillsborough County, Florida: Finding Correlations between Landscape Metrics and Socio-demographic Variables"

2013* David R. McCormick, "Exploring Potential Applications of Portable X-ray Fluorescence on Earthen Materials from Southeast Mesoamerica"

-recipient of a 2013 Archaeology Division Diversity Travel Grant, American Anthropological Association; Fellowship at the Smithsonian Institution in the Latino Museum Studies Program; currently a Ph.D. student at Yale University

2013 Julie H. Rogers Saccente, "Archaeology of the Early Eighteenth-Century Spanish Fort San José, Northwest Florida"

2012 Travis LaForge, "Specialization in Small-Scale Societies: The Organization of Pottery Production at Kolomoki (9ER1), Early County, Georgia"

2011 Zaida E. Darley, "The Dirt on Prehispanic Water Management at Palmarejo, Honduras"

2011* Alejandro J. Figueroa, "The Clash of Heritage and Development on the Island of Roatán, Honduras"

-awarded a 2010 Grant-in-Aid of Research, Sigma Xi, The Scientific Research Society; awarded a 2010 Research Travel Grant, Institute for the Study of Latin America and the Caribbean, University of South Florida; recipient of the 2009 Samuel Y. Fustukjian Memorial Scholarship, University of South Florida; currently a Ph.D. Candidate in Anthropology at Southern Methodist University

2011 Whitney A. Goodwin, "Indigenous Populations of the Island of Roatán, Honduras and their Mainland Neighbors: Implications for the Future of Heritage Tourism on the Bay Islands"

2011 Justin Hosbey, "Inalienable Possessions and Flyin' West: African American Women in the Pioneer West"

2011 Victoria A. K. Lawrence, "Studying Socioeconomic Trends through Cemetery Sales Records: A Case Study of Greenwood Cemetery, Orlando, Florida"

2011* Margaret F. Stack, "An Archaeological and Archival Appraisal of 'Spanish Indians' on the West Coast of Florida in the Eighteenth and Nineteenth Centuries"

-currently Ph.D. student in Applied Anthropology at the Univ. of South Florida

2010* Kara A. Rothenberg, "Multi-Elemental Chemical Analysis of Anthropogenic Soils as a Tool for Examining Spatial Use Patterns at Prehispanic Palmarejo, Northwest Honduras"

-recipient of the 2009 R.E. Taylor Student Poster Award, Archaeological Sciences of America Symposium; recipient of the 2009 NSF Funded Award for Archaeometry, Elemental Analysis Facility, Field Museum of Natural History

2010 Cynthia A. Schafer, "Impact of Tank Material on Water Quality in Household Water Storage Systems in Cochabamba, Bolivia" (Civil and Environmental Engineering)

2009 Casey Anderson, "GIS Spatial Analysis of Multiple Crime Scenes in Criminal Homicides"

2009 April Buffington, "Lower Creek/Seminole Archaeology in the Apalachicola River Valley, Northwest Florida"

2008 William A. Klinger, "Quebrada Communities in the Palmarejo Valley, Northwest Honduras"

2007* James R. Hawken, "Socio-natural Landscapes and Community Formation at Palmarejo, Honduras"

2007 Claire Novotny, "A Consideration of the Relationship between Settlement Hierarchy and Political Economy in the Naco Valley"

2007 Amber J. Yuellig, "Fort Walton Settlement Patterns and Ceramic Type Frequencies in the Apalachicola Valley of Northwest Florida"

2007 Andrea Satterfield, "The Assimilation of the Indigenous American: A Broader Reading of Christoph Weiditz's Trachtenbuch (1529) as an Ethnographic Document" (Art History) [External Reader]

2006 Anya Frashuer, "Middle Woodland Mound Distribution and Ceremonialism in the Apalachicola Valley, Northwest Florida"

2006 Shannon Peck-Janssen, "Animal Husbandry at Tell el Hesi (Israel): Results from Zooarchaeological and Isotopic Analysis"

2006 Nicole R. Shelnut, "Before the Inca: Prehistoric Dietary Transitions in the Argentine Cuyo"

2005* Lorena D. Mihok, "Cognitive Dissonance in Early Colonial Pictorial Manuscripts from Central Mexico" (Latin American and Caribbean Studies)
2005 Sarah A. Tobin, "Microfinance in Neoliberal Times: The Experience of an Egyptian NGO"
2004 Marie J. Archambeault, "Sourcing of Marble used in Mosaics at Antioch (Turkey)"
2004 Christine Bell, "Investigating Second Seminole War Sites in Florida: Identification through Limited Testing"
2004 Teddi J. Setzer, "Use-wear Experiments with Sardinian Obsidian: Determining its Function in the Neolithic"

B.A. Committees (*Chair)

2017* Jheuel Carter-Guy, land use, Caribbean (Environmental Science)
2017* Alexandra Johncola, sustainable tourism, (Business)
2016* Corinn N. Beem, "Cultural Tourism as Sustainable Tourism" (International Studies)
2013* Krupal Patel, "Hospital Sustainability" (Health Sciences/Pre-med)
2012* Susana R. Alvarado, "The Design of a General Education Curriculum with an Environmental and Sustainability Framework" (Environmental Science and Policy)
-currently a graduate student in Environmental Science and Policy at the University of South Florida
2012* Benjamin Cottrell, "Green Labs Are Gold: Evaluating and Improving the Environmental Impact of USF's Laboratories" (Health Sciences/Pre-med)
-currently Shoulder/Elbow Research Coordinator at Foundation for Orthopaedic Research and Education
2011* Marcela Yepes, "Our Planet Could Be Unrecognizable by 2050" (Accounting)
2011* Eleanor Ayers, "An Ideal Sustainable College Campus: USF" (Environmental Science and Policy)
2011* Karissa Gerhke, "Enacting a Student a Green Energy Fund at USF: An Example of the Effectiveness of Policy Tools as a Means to Achieve Campus Sustainability" (Biology)
-recipient of the 2011 Golden Bull Award, University of South Florida; currently Grant Writer at iB5k and Co-Chair of Leadership Development at Sierra Student Coalition
2009* Stefanie M. Butera, "Estimating the Postmortem Interval using Soil Chemistry of Pseudomorphs" (Anthropology)
2009* Benjamin Mehanni, "Walking the Walk: An Examination of -l Murrah Bedouin's Motives for Resisting Sedentarization" (Anthropology)
2008 Miranda L. Johnston, "Trade Systems at the Site of Palmarejo, Honduras" (Anthropology)
2007* Derek Lincoln, "Soil Analysis, Ancient Reservoirs, and Economic Advantage in the Naco Valley, Honduras" (Anthropology)
-M.A. in Mediterranean Archaeology, University of Bristol; featured in the History Channel series 'Chasing Mummies'; currently an Archaeologist with AMICK Consultants, Canada
2007* S. Elizabeth Maberry, "Learning from Museums: A Study of Traditional Exhibits and Ideas for Online Exhibits" (Anthropology)

-M.A. in Elementary Education, University of South Florida; currently AVID Coordinator/Teacher with Hillsborough County Public Schools

2007* Jolien S. Tyler (Verdaasdonk), "Assessing Agricultural Potential and its Implications for Political Development in Northwest Honduras" (Biology)

-received her Ph.D. in Biology at the University of North Carolina-Chapel Hill (2014) and is currently Director of the Light Microscopy Core Facility at University of Colorado-Boulder

2006 Nichole S. Bettencourt (Davenport), "Site Planning Principles and the Use of Public Space in Prehispanic Mesoamerican Communities at Palmarejo, Northwest Honduras" (Anthropology)

COMMUNITY SERVICE

Leadership

2014-2017 Member, School Advisory Council, Lewis Elementary School, Temple Terrace (open service)

2015-2016 Vice Chair, School Support Committee, Temple Terrace City Council (1 term)

2013-2015 Member, School Support Committee, Temple Terrace City Council (1 term)

2013-2018 Member, Historic Preservation Challenge Grant Program—Grant Review Committee, Board of County Commissioners, Hillsborough County (3 terms)

2013-2014 Member, Environmental Feedback Group, Environmental Protection Commission of Hillsborough County (open service)

2011-2013 Member, Board of Directors, Sweetwater Organic Community Farm (1 term)

2011-2012 Member, Energy and Sustainability Planning Committee, Environmental Protection Commission of Hillsborough County (open service)

2011-2012 Member, Advisory Board, GATES (Global School of Arts, Technology, Environment, and Sustainability) Junior/Senior High School (open service)

2011-2012 Member, Workgroup on Energy Management and Sustainability, Hillsborough County Government (open service)

2010-2012 Member, Advisory Board, New North Transportation Alliance (open service)

Memberships

2010+ Member, Temple Terrace Preservation Society

2010+ Member, USF Botanical Gardens

2010-2013 Member, Sweetwater Organic Community Farm

2010-2013 Member, Tampa Bay History Center

Public Commentary

2014 Letter to the Editor, in Response to "Tampa Bay Must Weigh Economic Benefits, Environmental Risks of Saving Cruise Ships" by J. Thalji. *Tampa Bay Times*, September 7, p. 2P.

2014 Letter to the Editor, in Response to "Report on Cruise Ship Port off Pinellas Dredges up Concerns" by J. Boatwright. *The Tampa Tribune*, July 25, p. D2.

2011 "Green" is Gold at USF. Editorial for *Ecology Florida*, May 24.

2011 Letter to the Editor, In Response to "Recycling on Campus" by M. Oldfield. *The Oracle*, January 11, p. 24.

Broadcast Media Interviews

2014 Giving Dozier Victims Their Names Back. *WUSF 89.7 FM* and *WSMR 89.1 FM*, August 11. (M. Schreiner)
2014 'Archaeology at Betty's Hope' on "Voice of the People." *Observer Radio Antigua 91.1 FM*, June 16. (A. Watt)
2014 Dozier Update. *WUSF 89.7 FM* and *WSMR 89.1 FM*, February 4. (M. Schreiner)
2014 Dozier Update. *WUSF TV (16.1)*, February 3. (M. Schreiner)
2014 Researchers Find 5 More Bodies at Dozier School for Boys. *WFTS/TV ABC News Channel 7*, Tampa, January 28. (M. Pleasant)
2014 Disturbing Discovery at Dozier Revealed. *WFLA/TV NBC News Channel 8*, Tampa, January 28. (J. Patterson)
2014 24 More Bodies Found at Dozier School for Boys Than Official Records Indicate. *WTSP/TV CBS News Channel 10*, Tampa, January 28. (P. Rudie)
2013 'Grave Misgivings' on "As it Happens." *CBC-Radio Canada*, August 2. (H. Mann)
2013 USF Request To Exhume Bodies At Dozier On Cabinet Agenda, Recommended For Approval. *WFSU 88.9 FM Florida Public Radio*, July 31. (S. Cordner)
2013 USF Replies to State: You Do Have Authority on Dozier School Gravesites. *WUSF 89.7 FM* and *WSMR 89.1 FM*, July 22. (Y. Ramos)
2013 USF Researchers Say Map May Point to Second Dozier Cemetery. *WFTS/TV ABC News Channel 7*, Tampa, December 10. (C. Chambers)
2013 Possible Second Burial Site at Dozier School. *WUSF 89.7 FM* and *WSMR 89.1 FM*, July 11. (M. Schreiner)
2013 White House Boys Investigation Heightens at Dozier. *WJHG/TV NBC News Channel 7*, Panama City, February 4. (J. Patterson)
2013 Could Tampa Bay Ban Plastic Water Bottles- *WFLA/TV NBC News Channel 8*, Tampa, January 2. (B. Garner)
2012 Does Maya Calendar Predict End of World Friday- USF Archaeologist Says No. *WMNF 88.5 FM Community Radio*, December 19. (J. Irwin)
2012 Unmarked Graves Found at Former Florida School. *WBBH-TV Channel 2, Fort Myers*, December 10. (J. Trammell)
2012 USF Researchers Find More Unmarked Graves at Dozier School for Boys. *WFTS/TV ABC News Channel 7*, Tampa, December 10. (C. Chambers)
2012 Researchers Find More Graves at Former School for Boys. *WTVT/TV Fox News Channel 13*, Tampa, December 10. (T. Arja)
2012 USF Researchers Find More Graves at Dozier School for Boys. *WMNF 88.5 FM Community Radio*, September 24. (J. Irwin)
2012 At Infamous Boys' School, Searching for a Secret Cemetery. *WTVT/TV Fox News Channel 13*, Tampa, October 12. (D. Smith)
2012 Electric Cars. *WUSF 89.7 FM* and *WSMR 89.1 FM*, January 16. (M. Schreiner)
2011 USF Food Waste Audit. *WTVT/TV Fox News Channel 13*, Tampa, November 6. (R. Hardman)

2011 City of Tampa Releases Greenhouse Gas Emissions Report. *WFLA/TV NBC News Channel 8*, Tampa, September 16. (B. Garner)
2011 USF Golf Carts Going Solar. *WFLA/TV NBC News Channel 8*, Tampa, August 8. (B. Garner)
2011 USF is Taking Green to a Whole New Level, Out with Styrofoam, In with Reusable To Go Boxes. *WFTS/TV ABC News Channel 7*, Tampa, July 28. (W. Logan)
2011 Looking at USF's No Styrofoam Policy. *WFLA/TV NBC News Channel 8*, Tampa, July 27. (B. Garner)
2011 USF Uses New Technology to Keep Bottles Out of Landfills. *Bay News 9*, Bright House Networks Cable Television, Tampa, July 10. (A. Jeffery)
2011 USF Fountain Technology Aims to Reduce Plastic Water Bottle Waste. *WFTS/TV ABC News Channel 7*, Tampa, June 29. (W. Logan)
2011 New Program at USF Examines Water Bottle Usage. *WFLA/TV NBC News Channel 8*, Tampa, June 24. (B. Garner)
2010 School of Global Sustainability. *WUSF 89.7 FM* and *WSMR 89.1 FM*, February 26. (M. Schreiner)
2009 Sustainability on Campus. *WMNF 88.5 FM Community Radio*, September 24. (M. Cimitile)
2007 Tomorrow Searching Again: Forensic Specialists Will Be at It Again on Saturday Searching for Evidence on the Disappearance of Sandra Prince. *WFLA/TV NBC News Channel 8*, Tampa, October 18. (N. Shepherd)

<u>Print/Internet Media Interviews and Featured Research</u>
2015 The Seine Bight Cultural Heritage Project. *Indigenous Heritage* 5(2):1-2 (C. Novotny)
2015 USF Professor of Anthropology Christian Wells Received a Crucial Research that Matters Grant to Help Fulfill a Community's Dream of Building a Collection for a New Cultural Museum. *Newsletter of the USF Office of Community Engagement and Partnerships*, October 19. (B. Silvestri)
2014 Los primeros rostros de Marianna. *El País*, August 9. (M. Primera)
2014 First of Boys Buried at Dozier Identified. *WUSF News*, August 8. (M. Schreiner)
2014 Report: No New Graves Found on South Dozier Campus. *Jackson County Floridian*, August 5 (A. Cook)
2014 Los viejos fantasmas de Marianna. *El País*, February 9. (M. Primera)
2014 USF Researchers Dig for Answers at Dozier, Find More Questions. *WUSF News*, February 4. (M. Schreiner)
2014 La gran tumba de los niños desobedientes. *El País*, February 3. (M. Primera)
2014 Land of Make-believe: Fake Archaeology in Paradise. *New Scientist* 2950:34-37. (M. Bawaya)
2014 Remains of 55 Bodies Found at Former Florida Reform School. *The Wall Street Journal*, January 28. (A. Campo-Flores)
2014 More Remains Excavated at Fla. Reform School Yard. *The Washington Post*, January 28. (Associated Press).
2014 USF Researchers Find More Bodies at Dozier School for Boys. *The Tampa Tribune*, January 28. (J. Stockfish)

2014 USF Researchers Unearthed 55 Bodies from Dozier, More than State Claimed. *Tampa Bay Times*, January 28. (B. Montgomery)
2014 USF Team Uncovers More Bodies at Dozier than State Records Show. *Sunshine State News*, January 28. (A. Nielsen)
2014 55 Bodies Discovered at Dozier School for Boys. *WUSF News*, January 28. (S. Newborn)
2013 Changing Public Policy Can Sustain Research. *The Daily Evergreen*, September 30. (Z. Briggs)
2013 Students Recall Dozier Dig. *The Oracle*, September 17. (R. Roldan)
2013 The Best News Photos of the Week: Grisly Find. *The Washington Post*, September 7. (E. Fountain)
2013 USF Team Uncovers Burials at Boot Hill. *USF News*, September 5. (K. Hennig)
2013 Scores of Bodies Exhumed in US Campus. *Aljazeera*, September 1 (N. Ghoneim)
2013 Nature of the Beast: Strange. *Tampa Bay Times*, September 1. (S. Fuchs)
2013 Excavation At Dozier's Boot Hill. *Tampa Bay Times*, September 1. (E. Fountain)
2013 Bones Unearthed in Search at Former Florida Reform School. *Reuters*, August 31. (B. Cotterell)
2013 Remains Found Outside Known Cemetery Border at Dozier. *Jackson County Floridian*, August 31 (D. Buckhalter)
2013 U.S. Justice Department Awards USF Researchers Grant for Dozier School Project. *USF News*, August 28. (L. Wade)
2013 USF to begin Dozier excavation on Saturday. *Tampa Tribune*, August 26. (J. Turner and T. Urban)
2013 USF asks state to reconsider Dozier request. *WFTS/TV ABC News Channel 7*, Tampa, July 22. (A. Hobson)
2013 USF Asks State to Reconsider Dozier Excavation Denial. *Tampa Tribune*, July 22. (W. March)
2013 USF Replies to State: You Do Have Authority on Dozier School Gravesites. *WUSF News*, July 22. (Y. Ramos)
2013 Sen. Nelson Slams Gov. Scott on Latest Dozier School Decision. *WUSF News*, July 16. (M. Schreiner)
2013 Florida Secretary of State Halts Dozier Exhumations. *Tampa Tribune*, July 15. (J. Stockfisch)
2013 State Turns Down USF Request for Dozier Exhumations. *WUSF News*, July 15. (M. Schreiner)
2013 USF Team May Have Found Dozier School's 'White Cemetery' Site. *Sunshine State News*, July 11. (E. Giunta)
2013 USF Denied Permit to Exhume Unmarked Graves at Former Dozier School for Boys. *WFTS/TV ABC News Channel 7*, Tampa, July 11. (C. Chambers)
2013 "The Right to Know": DNA Samples are Taken from Relatives of Children Who Died at the Former Dozier School for Boys Who Want to Know the Truth of What Happened There. *USF News*, June 14. (P. Howard)
2013 The Day Port Royal 'Burned': Archaeologists Shed New Light on 1782 Battle. *Bay Islands Voice* 11(6):31. (R. Armstrong)

2013 Turning Wastewater into a Renewable Resource: USF Researchers Awarded $3.9 Million for Game-Changing NSF Grant Project. *Envision Magazine* 8:3-5. (V. Chachere and J. Gillis)
2013 USF Seeks State Permission to Exhume Dozier Graves. *The Oracle*, June 3. (D. Kumar)
2013 Sustainability Solution. *USF Magazine* 55(1):5. (V. Chachere and J. Gillis)
2013 At Boys' Home, Seeking Graves, and the Reason. *The New York Times*, February 10. (L. Alvarez)
2013 USF Research at Closed School Praised. *USF News*, February 1. (V. Chachere)
2013 Focus on Sustainability: USF Researchers Will Use a NSF Grant to Lead an International Team Looking at Revolutionary Ways to Turn Wastewater into Usable Products. *USF News*, January 22. (V. Chachere and J. Gillis)
2012 19 More Bodies Discovered at Dozier Cemetery. *WMBB/TV ABC News Channel 13, Panama City*, December 12. (A. Hyman)
2012 Abuses at Infamous Florida Boys Reform School Even More Widespread, Report Says. *U.S. News on NBC News*, December 10. (M. A. Johnson)
2012 USF Researchers Find 19 More Graves at Dozier School for Boys. *The Tampa Tribune*, December 10. (J. R. Stockfisch)
2012 Additional Graves Located at Former Reform School. *USF News*, December 10. (V. Chachere)
2012 Totally Cool: USF is Cooler than Ever—Just Ask the Folks at Sierra Magazine. *USF Magazine* 54(4):6-7. (V. Chachere)
2012 Professor Explains 2012 Mayan Doomsday Prophecy. *The Oracle*, December 3. (A. Rosenthal)
2012 "End Date" Nears: Expect the Hype to Intensify as the Calendar Draws Closer to Dec. 21, 2012, the So-called Maya Doomsday. *USF News*, November 27. (P. Howard)
2012 Dr. Christian Wells on "The Maya Doomsday Prophecy..." *WTSP/TV CBS News Channel 10*, Tampa, November 23. (A. Patel)
2012 Saving the Best for Last. *Tampa Bay Times*, November 14. (J. Keeler)
2012 Revealing the Real Roatán. *American Archaeology* 16(3):24-30. (M. Bawaya)
2012 A Cooler 'Cool School': USF Rockets Up the Sierra Magazine Rankings in Sustainability by Creating a Greener Campus. *USF News*, August 14. (B. Gathegi)
2012 Sustainable Leader. *USF Magazine* 54(2):30-33. (A. Carney)
2012 Environmental Sustainability Intern Named and Solar Dok Installed. *USF News*, May 16. (J. Burns)
2012 USF Receives Top Accolade for Environmental Action: Second Nature Recognizes USF's Climate Leadership and Sustainability Efforts with National Award. *USF News*, May 2. (K. Burke)
2012 Tree Plantings Celebrate Earth Day. *USF News*, April 21. (D. Miller)
2012 Green Fee Council Selects Five New Sustainability Projects. *The Oracle*, April 4. (J. Velez)
2012 All About the Apocalypse: Science Fiction Writers and USF Professors Teamed Together to Address Misconceptions about the Mayan Apocalypse. *USF News*, April 3. (D. Miller)
2012 Dream in Green: Creative Sustainability Projects Have USF Vying for Environmental Honor. *Tampa Bay Times*, April 1. (K. Wilmath)

2012 USF Reaches Final Round of Climate Leadership Awards. *The Oracle*, March 26. (K. Modigell)
2012 Mayan Doomsday Just a Myth: Archeological Evidence Was Taken Out of Context, Asserts USF Professor Christian Wells. *USF News*, March 20. (D. Miller)
2012 Apocalypse Lecture Series to Discuss Impending Doomsday. *The Oracle*, March 20. (K. Modigell)
2012 Sustainability Challenge: USF is a Finalist in a Competition to Find the Most Innovative Climate Leaders in Higher Education. *USF News*, March 19. (V. Chachere)
2012 Fear the 2012 Apocalypse- USF Can Help. *Tampa Bay Times*, March 18. (E. Miller)
2012 Student Green Energy Fee Sees Second Round of Proposals. *The Oracle*, March 6. (M. Saleh)
2011 U of South Florida Latest School to Add Electric Vehicle Charging Stations. *USA Today*, December 20. (D. Miller)
2011 Start Your Engines: Electric Car Chargers, Funded through a DOE Grant, Are Installed on Campus Near the Marshall Student Center. *USF News*, December 15. (D. Miller)
2011 Professor Recognized for Sustainability Efforts. *The Oracle*, November 17. (M. Mangrum)
2011 Going Green Becoming Mainstream, Profitable. *The Tampa Tribune*, November 4. (T. Jackovics)
2011 USF's First Food Waste Audit. *USF News*, November 4. (D. Miller)
2011 Sun Dome Renovation Taking Shape. *The Oracle*, November 1. (M. Saleh)
2011 SGEF Council Approves About $277,000 in Project Funding. *The Oracle*, October 27. (M. Saleh)
2011 USF Students' Food Waste Adds Up. *The Oracle*, October 24. (M. Saleh)
2011 Council to Decide on Green Fee Allocation. *The Oracle*, October 10. (M. Saleh)
2011 LEED Certifications at USF in Progress. *The Oracle*, September 29. (D. Kumar)
2011 New Council to Oversee Student Green Energy Fund Expenses. *The Oracle*, September 22. (G.-R. Grell)
2011 Tampa's Greenhouse Gas Emissions Higher than Some Larger Cities. *The Tampa Tribune*, August 31. (C. Wade)
2011 Students Embrace Green Initiatives at USF. *The Tampa Tribune*, August 26. (K. Hall)
2011 USF Experts Disagree with Climate Change Challenges. *The Oracle*, August 25. (J. Velez)
2011 "Cool School": USF Is Ranked as One of Sierra Magazine's "Cool Schools" for Its Focus and Practices Supporting Sustainability. *USF News*, August 24. (B. Gathegi)
2011 USF among "Coolest Schools," Says Sierra Club. *Tampa Bay Times*, August 23. (K. Wilmath)
2011 Green Building with a STARS Gold University. *2010 Campus Sustainability Review*, pp. 18-20. Association for the Advancement of Sustainability in Higher Education, Denver, Colorado. (T. Gibbins)
2011 USF Dining is Styrofoam-Free: On-campus Dining Now Uses Plastic, Reusable Containers Which Promotes a Healthier Environment and Saves the University Money. *USF News*, July 22. (V. Chachere)
2011 New Fountains Bring Green Change to Campus. *The Oracle*, July 6. (A. Dawson)
2011 Stop! Fill Water Bottle. *USF News*, June 20. (J. Cherres)
2011 Green Fee Preps for Future Sustainability Efforts. *The Oracle*, May 19. (M. Velez)

2011 USF Hosts Earth Day Festival. *The Oracle*, April 25. (M. Velez)
2011 Judy Genshaft to Ride Bull Runner for the First Time. *The Oracle*, April 20. (D. Kumar)
2011 Earth Day Celebration Upcoming: USF Celebrates Green Living and Sustainability with Earth Day Celebration and "Get on the Bus!" Campaign. *USF News*, April 8. (D. Miller)
2011 USF Student Body President Wins Top Honors: The Presentation by Cesar Hernandez on Immigration Policy Takes Top Honors at an International Event in Dubai. *USF News*, April 7. (V. Chachere)
2011 Students Petition for Genshaft to Ride a Bull Runner. *The Oracle*, April 5. (D. Kumar)
2011 USF Sustainability Finds Gold: Sustainability and Environmentally Focused Initiatives on Campus Have Earned USF a Coveted "Gold" Rating. *USF News*, February 7. (V. Chachere)
2011 USF Wins a Gold for Its Efforts to Be Green. *Tampa Bay Online*, February 4. (L. Peterson)
2011 University Hopes to Raise Water Conservation Awareness. *The Oracle*, February 1. (D. Kumar)
2011 USF Unveils Green Global Center in Tampa. *83 degrees*, January 25. (M. Kavanaugh)
2011 "Green" Patel Center Opens at USF: USF's Patel Center for Global Solutions is Designed and Built to be Efficient, Respectful of Strained Natural Resources and Green. *USF News*, January 24. (V. Chachere)
2010 USF Earns a B+ on National Sustainability Report Card: New "Green" Practices on Campus Help Fuel Efforts to Conserve Energy and Reduce Waste. *USF News*, October 27. (V. Chachere)
2010 Tampa Bay Living Green Expo This Weekend to Feature 60 Exhibitors of Green Products, Services. *St. Petersburg Times*, October 15. (T. Aggeles)
2010 Documentary Series Highlights Personal, Global Water Crises. *The Oracle*, October 12. (M. Velez)
2010 Cleaning up a Football Game: USF is Taking Part in the 2010 EPA Game Day Challenge to Reduce, Reuse and Recycle Waste from Homecoming Game. *USF News*, October 8. (D. Miller)
2010 Global Sustainability Lecture Series to Begin. *USF News*, September 10. (S. Amrhein)
2010 New School Welcomes First Class This Fall. *The Oracle*, August 31. (A. Oxner)
2010 USF a Leader in Sustainability. *The Tampa Tribune*, August 27. (M. Biggs)
2010 Driving toward a Sustainable Future: USF is Continuing Its Sustainable Efforts by Retrofitting Campus Golf Carts to Run on Solar Power. *USF News*, August 9. (J. Withrow)
2010 USF among Top "Green" Colleges. *The Oracle*, May 20. (M. Nicoleau)
2010 USF Researchers Investigate Oil Spill. *The Oracle*, May 17. (B. Cerny)
2010 USF One of Nation's Top Green Colleges. *USF News*, May 5. (J. Cash)
2010 Sustainability Film Festival: Honors College Students Address Green Issues on Campus through Projects and Video Diaries. *USF News*, May 4. (D. Miller)
2010 Reduce, Reuse, RecycleMania: USF Ranks 2nd in Florida and 25th Nationwide in 2010 Competition. *USF News*, April 21. (D. Miller)
2010 USF Gives Sustainability Effort the 'Green' Light. *The Oracle*, April 8. (S. Kassem)
2010 USF Races to Catch Up in Recycling Contest. *The Oracle*, February 2. (V. Defrancesco)
2010 USF is Charter Member in Nation's First Campus-Wide Sustainability Program. *USF News*, January 13. (V. Chachere)
2010 USF Scientist Tracks Dirt Path to Sustainable Future. *Bay Soundings*, February 1. (K. Loft)

2010 Wells Tracks Dirt Path to Sustainable Future. *USF News*, January 5. (S. Harff)
2010 USF Scientist Tracks Dirt Path to Sustainable Future. *83 degrees*, January 5. (K. Loft)
2009 Eco-friendly Ideas Sprout at Tampa Conference. *St. Petersburg Times*, October 10. (J. Vander Velde)
2009 Spotlight on Sustainability. *USF News*, October 1. (V. Chachere)
2009 New Office of Sustainability. *USF News*, July 29. (L. Wade)
2008 Ancient Crystal Skulls: Bones of Contention. *St. Petersburg Times*, June 4. (E. Smithers)
2008 Anthropology Gains National Recognition. *The Oracle*, April 18. (E. Sylvester)
2008 La Universidad del Sur de Florida devuelve la colección de 157 piezas prehispánicas de Honduras. *Sol*, March 12. (Staff)
2008 Repatrían valiosa colección prehistórica. *El Heraldo*, March 12. (L. Estrada)
2008 Retornan de EUA piezas históricas. *La Prensa*, March 12. (Staff)
2008 Gift of Honduran Artifacts Returned by Anthropology Department. *USF News*, March 26. (B. Melendez)
2008 Excavation Turns Up No Trace of Missing Woman. *Northeast News and Tribune*, January 24 (M. Wells)
2008 Leads Found But No Body At S. Tampa Home, Police Say. *The Tampa Tribune*, January 23. (M. Wells)
2007 Rare Maya "Death Vase" Discovered. *National Geographic News*, December 3. (B. de Pastino) Syndicated by The New York Times News Service/Syndicate. (L. Shapiro)
2007 Anthropogenic Sediments, Example: El Coyote. From "Chapter 15: Archaeometry" in *Principles of Archaeology*, by T. D. Price, pp. 425-427. McGraw Hill, Boston, Massachusetts. (T. D. Price)
2006 Cover Photo. *The SAA Archaeological Record: The Magazine of the Society for American Archaeology*, 6(2). (J. Kantner)
2006 Digging Deeply into the Past: Chemistry Is Increasingly Helping Archaeologists Answer Questions of What, Where, and When. *Chemical & Engineering News*, April 24, pp. 35-38. (C. H. Arnaud)
2006 Gritty Clues: How Soils Can Tell Stories of the Past. *Science News: The Weekly News Magazine of Science*, 169(23), pp. 362-364. (A. Cunningham)
2006 Rare Marble Vase Reveals Life from Long Ago. *Research, University of South Florida*, 1(1), p. 16. (J. Bunch)
2005 Palmarejo y su riqueza histórica. La Prensa de Honduras, June 25, p.24. (J. Castillo)
2004 Excavarán en nuevo sitio arqueológico de los lencas. *El Tiempo Diario de Honduras*, October 12, p.20. (R. Carranza)
2004 Los ladrones de la historia venden el patrimonio: Llevan piezas al extranjero para negociarlas en casa de antigüedades. *La Prensa de Honduras*, November 21, pp. 24-25. (J. Figueroa)

<u>Lectures</u>

2016 Climate Change Archaeology. Classroom lecture and activities for 8th grade students at Corpus Christi Catholic School, Temple Terrace, Florida, April 19; sponsored by the Department of Anthropology, University of South Florida.

2015 Ancient Mixtec Art and Epigraphy. Classroom lecture and activities for 7th grade students at Williams Middle Magnet IB School, Tampa, Florida, November 19; sponsored by the Department of Anthropology, University of South Florida.

2015 Archaeology of Ancient Mexico. Classroom lecture and activities for 2nd grade students at Temple Terrace Elementary, Temple Terrace, Florida, November 19; sponsored by the Department of Anthropology, University of South Florida.

2015 Archaeology of Ancient Mexico. Classroom lecture and activities for 4th grade students at Lewis Elementary, Temple Terrace, Florida, November 19; sponsored by the Department of Anthropology, University of South Florida.

2014 Ancient Civilizations of Mexico. Classroom lecture and activities for 6th grade students at Williams Middle Magnet IB School, Tampa, Florida, November 20; sponsored by the Department of Anthropology, University of South Florida.

2014 Ancient Civilizations of Mexico. Classroom lecture and activities for 3rd grade students at Lewis Elementary, Temple Terrace, Florida, November 20; sponsored by the Department of Anthropology, University of South Florida.

2014 Calusa and Tocobaga: Hunting, Gathering, Planting, and Harvesting. Classroom lecture and activities for 2nd grade students at Temple Terrace Elementary, Temple Terrace, Florida, November 20; sponsored by the Department of Anthropology, University of South Florida.

2014 Calusa and Tocobaga: Hunting, Gathering, Planting, and Harvesting. Classroom lecture and activities for 3rd grade students at Lewis Elementary, Temple Terrace, Florida, November 20; sponsored by the Department of Anthropology, University of South Florida.

2014 Calusa and Tocobaga: Hunting, Gathering, Planting, and Harvesting. Classroom lecture and activities for 2nd grade students at Lewis Elementary, Temple Terrace, Florida, February 26; sponsored by the Department of Anthropology, University of South Florida.

2014 Pirates, Protestants, Militia, and Miskitu: The Royalization of Roatan Island. Lecture presented to the Central Gulf Coast Archaeological Society, Weedon Island Preserve Cultural and Natural History Center, St. Petersburg, Florida, January 16; sponsored by the Central Gulf Coast Archaeological Society and the Alliance for Weedon Island Archaeological Research and Education.

2013 Pirates, Pillage, and Plunder: Recent Excavations on Roatán Island, Honduras. Lecture presented to the Temple Terrace Preservation Society, Temple Terrace, Florida, May 2; sponsored by the Temple Terrace Preservation Society.

2012 It's the End of the World as We Know It: The 2012 Ancient Maya Doomsday Prophecy Revealed. Lecture presented to the Charlotte County Historical Center, Charlotte Harbor, Florida, December 7; sponsored by the Charlotte County Community Services Department.

2012 Bare-bones Archaeology. Classroom lecture and activities for 4th grade students at Lewis Elementary, Temple Terrace, Florida, October 31; sponsored by the Department of Anthropology, University of South Florida.

2012 December 21, 2012: All You Ever Wanted Need to Know About the Ancient Maya Doomsday Prophecy. Lecture presented to the Time Sifters Archaeology Society, Sarasota, Florida, January 18; sponsored by the Florida Anthropological Society.

2011 The Arrr…chaeology of Pirates! Classroom lecture and activities for 3rd grade students at Lewis Elementary, Temple Terrace, Florida, November 17; sponsored by the Department of Anthropology, University of South Florida.

2011 What Does an Archaeologist Do? Classroom lecture and activities for Kindergarten students at Lewis Elementary, Temple Terrace, Florida, November 17; sponsored by the Department of Anthropology, University of South Florida.

2011 Green Building at USF: The Dr. Kiran C. Patel Center for Global Solutions. Tour and lecture presented to delegates of the Institute of Florida Studies conference "Beyond Sustainability 2011: Ecosystems, Economics, and Education," University of South Florida, Tampa, November 2; sponsored by Hillsborough Community College.

2011 Thinking Global, Acting Local: New Sustainability Initiatives at the University of South Florida. Lecture presented to the Tampa Bay Public Risk Management Association, Clearwater, Florida, December 8; sponsored by Tampa Bay Public Risk Management Association.

2011 Building a Sustainable Campus and Community at the University of South Florida. Lecture presented to the Building Owners and Managers Association – Greater Tampa Bay, Tampa, Florida, October 4; sponsored by Building Owners and Managers Association.

2011 Global Sustainability: The Role of Higher Education. Tampa East Sertoma Club, Tampa, Florida, September 27; sponsored by Sertoma International.

2011 Energy Conservation Strategies at the University of South Florida. County Workgroup on Energy Management and Sustainability, Tampa, Florida, September 22; sponsored by Environmental Protection Commission of Hillsborough County.

2011 USF's First LEED Certified Building: The Dr. Kiran C. Patel Center for Global Solutions. Tour and lecture presented to the American Planning Association – Florida Chapter, University of South Florida, Tampa, April 14; sponsored by USF Facilities Planning and Construction.

2010 How Can Archaeology Improve the Prospects for a Sustainable World? Lecture presented to the Temple Terrace Preservation Society, Temple Terrace, Florida, May 20; sponsored by the Temple Terrace Preservation Society.

2010 The Dirt on Soil. Classroom lecture and activities for 6th grade students from Carrollwood Day School, Carrollwood, Florida, May 5; sponsored by the Office of Sustainability, University of South Florida.

2010 Leading by Example: The Role of the University in Creating Sustainable, Healthy Communities. Lecture presented to the Exchange Club, Tampa, Florida, March 8; sponsored by the School of Global Sustainability, University of South Florida.

2009 Careers and the Environment. Lecture presented at the Go Green Career Fair, Pinellas Technical Education Center, St. Petersburg, Florida, November 5; sponsored by the Pinellas County Urban League.

2009 Artifact Gallery. Classroom lecture and activities for 1st grade students at Lewis Elementary, Temple Terrace, Florida, September 15; sponsored by the Department of Anthropology, University of South Florida.

2008 What Do Archaeologists Do and Why Do They Do It? Classroom lecture and activities for 5th grade students at P. L. Sheehy Elementary School, Tampa, Florida, November 19; sponsored by the West Central Regional Center, Florida Public Archaeology Network.

2008 What Do Archaeologists Do and Why Do They Do It? Classroom lecture and activities for 3rd grade students at P. L. Sheehy Elementary School, Tampa, Florida, November 19; sponsored by the West Central Regional Center, Florida Public Archaeology Network.

2008 Mesoamerica's Prehistory. Classroom lecture and activities for 8th grade students at Young Middle Magnet School, Tampa, Florida, February 5; sponsored by the Department of Anthropology, University of South Florida.

2007 Maya Archaeology. Classroom lecture and activities for 7th grade students at Young Middle Magnet School, Tampa, Florida, November 14; sponsored by the West Central Regional Center, Florida Public Archaeology Network.

2006 Archaeology: Observations and Inferences. Classroom lecture and activities for 7th grade students at Williams Middle Magnet IB School, Tampa, Florida, September 22; sponsored by the Department of Anthropology, University of South Florida.

2005 The Royal Tombs of the Ancient Maya City of Copán, Honduras. Lecture presented to the Learning in Retirement Institute at the Tampa Palms Golf and Country Club, Tampa, Florida, February 3; sponsored by the Division of Senior Programs, University of South Florida.

2004 Recent Discoveries in the Archaeology of Honduras. Classroom lecture and activities for 12th grade students at Durant High School, Plant City, Florida, November 9; sponsored by the Department of Anthropology, University of South Florida.

2004 The Ancient Maya City of Copán, Honduras. Lecture presented to the Aston Gardens Senior Living Community, West Chase, Florida, April 27; sponsored by the Department of Anthropology, University of South Florida.

2004 The Archaeology of Ritual in Honduras. Classroom lecture and activities for 12th grade students at Durant High School, Plant City, Florida, February 4; sponsored by the Department of Anthropology, University of South Florida.

2003 The Archaeology of Ritual in Honduras. Classroom lecture and activities for 12th grade students at Durant High School, Plant City, Florida, November 12; sponsored by the Department of Anthropology, University of South Florida.

1997 How to Get a Date: Dating Archaeological Deposits. Classroom lecture and activities for 6th grade students at Campe Verde Middle School, Campe Verde, Arizona, April 18; sponsored by the Eastern Mimbres "Lives and Landscapes" Education Program, Arizona State University.

1997 What's for Dinner? Prehistoric Diet and Archaeological Research. Classroom lecture and activities for 6th grade students at Campe Verde Middle School, Camp Verde, Arizona, April 17; sponsored by the Eastern Mimbres "Lives and Landscapes" Education Program, Arizona State University.

1997 What Is It? How Archaeologists Interpret the Past. Classroom lecture and activities for 6th grade students at Kyrene Aprende Middle School, Tempe, Arizona, March 26; sponsored by the Eastern Mimbres "Lives and Landscapes" Education Program, Arizona State University.

1997 What Is It? How Archaeologists Interpret the Past. Classroom lecture and activities for 6th grade students at McKemy Middle School, Tempe, Arizona, March 12; sponsored by the Eastern Mimbres "Lives and Landscapes" Education Program, Arizona State University.

1997 What Is It? How Archaeologists Interpret the Past. Classroom lecture and activities for 4th grade students at Tempe Montessori School, Tempe, Arizona, February 19; sponsored by the Eastern Mimbres "Lives and Landscapes" Education Program, Arizona State University.

1996 Why Do Archaeologists Dig? Classroom lecture and activities for 9th grade students at Oberlin High School, Oberlin, Ohio, April 4; sponsored by the Department of Anthropology, Oberlin College.

1996 Why Do Archaeologists Dig? Classroom lecture and activities for 4th grade students at Crestwood Elementary School, Elyria, Ohio, April 2; sponsored by the Department of Anthropology, Oberlin College.

1996 Why Do Archaeologists Dig? Classroom lecture and activities for 4th grade students at Prospect Elementary School, Oberlin, Ohio, March 21; sponsored by the Department of Anthropology, Oberlin College.

1996 Why Do Archaeologists Dig? Classroom lecture and activities for 4th grade students at McKinley Elementary School, Elyria, Ohio, March 19; sponsored by the Department of Anthropology, Oberlin College.

1996 Why Do Archaeologists Dig? Classroom lecture and activities for 4th grade students at Westview Elementary School, Avon Lake, Ohio, March 12; sponsored by the Department of Anthropology, Oberlin College.

Presentations

2013 Interlinking Soil Properties to Prospect for Ancient Activity Loci: An Example from Palmarejo, Honduras. Public display at the 6th Annual College of Arts and Sciences Oktoberfest, University of South Florida, Tampa, Florida, October 25; sponsored by the Office of Research and Innovation, University of South Florida. (K. A. Rothenberg, D. A. Storer, and E. C. Wells)

2013 Ancient Soilscape Legacies Influence Today's Farming in Honduras. Public display at the 6th Annual College of Arts and Sciences Oktoberfest, University of South Florida, Tampa, Florida, October 25; sponsored by the Office of Research and Innovation, University of South Florida.

2013 Alkaline Earth Metals Reveal Human Impacts to Ancient Anthrosols. Public display at the 6th Annual College of Arts and Sciences Oktoberfest, University of South Florida, Tampa, Florida, October 25; sponsored by the Office of Research and Innovation, University of South Florida.

2013 Politics, Ecology, and Tourism Revolutionize Wastewater Management on the Placencia Peninsula, Belize. Public display at the 6th Annual College of Arts and Sciences Oktoberfest, University of South Florida, Tampa, Florida, October 25; sponsored by the Office of Research and Innovation, University of South Florida. (E. C. Wells, R. K. Zarger, L. M. Whiteford, M. R. Cairns, E. S. Koenig, and Z. E. Darley)

2012 Geoarchaeological Prospection of an 18th Century English Settlement on Roatán Island, Honduras. Public display at the 5th Annual College of Arts and Sciences Oktoberfest, University of South Florida, Tampa, Florida, October 26; sponsored by the Office of Research and Innovation, University of South Florida. (L. D. Mihok and E. C. Wells)

2012 Phosphate, Organic Matter, and pH: An Integrated Approach to Anthrosol Prospection at Palmarejo, Honduras. Public display at the 5th Annual College of Arts and Sciences Oktoberfest, University of South Florida, Tampa, Florida, October 26; sponsored by the Office of Research and Innovation, University of South Florida. (K. A. Rothenberg and E. C. Wells)

2012 Archaeological Science. Public display at the 40th Annual Engineering Expo, University of South Florida, Tampa, Florida, February 17; sponsored by the Department of Anthropology, University of South Florida.

2011 Patel School of Global Sustainability. Public display at the City of Tampa Earth Day Celebration, Lykes Gaslight Square Park, Tampa, Florida, April 21; sponsored by the Patel School of Global Sustainability, University of South Florida.

2011 Sustainability at USF. Public display at the 39th Annual Engineering Expo, University of South Florida, Tampa, Florida, February 18; sponsored by the Department of Anthropology, University of South Florida.

2010 Working with the Environment: Rainwater Harvesting and Composting. Public display at Earth Day Tampa Bay, Tampa, Florida, April 25; sponsored by the Office of Sustainability, University of South Florida.

2009 Office of Sustainability. Public display at the Going Green Tampa Bay Expo, Tampa, Florida, October 9; sponsored by the Office of Sustainability, University of South Florida.

2009 USF Office of Sustainability. Public poster presentation at the 4th Annual Campus and Community Sustainability Conference, Tampa, Florida, October 8; sponsored by the Office of Sustainability, University of South Florida.

2005 Bridging the Gap between Social Science and Materials Science: Archaeologists Use Modern Technology to Study Ancient Technology. Public poster presentation for the 10th Annual Symposium on 21st Century Teaching Technologies: A Continuing Series of Explorations, Tampa, Florida, March 2; sponsored by the Center for 21st Century Teaching Excellence, University of South Florida. (E. C. Wells and R. H. Tykot)

2003 Archaeology. Public poster presentation for SEE ASU program for Tempe public schools, Tempe, Arizona, March 29; sponsored by the Archaeological Research Institute, Arizona State University.

2000 Archaeology. Public poster presentation for SEE ASU program for Tempe public schools, Tempe, Arizona, March 25; sponsored by the Archaeological Research Institute, Arizona State University.

2000 Archaeology. Public poster presentation for SEE ASU program for Tempe public schools, Tempe, Arizona, March 24; sponsored by the Archaeological Research Institute, Arizona State University.

1999 Archaeology. Public poster presentation for SEE ASU program for Tempe public schools, Tempe, Arizona, March 27; sponsored by the Archaeological Research Institute, Arizona State University.

1999 Archaeology. Public poster presentation for SEE ASU program for Tempe elementary and middle schools, Tempe, Arizona, March 26; sponsored by the Archaeological Research Institute, Arizona State University.

1998 Archaeological Research Institute. Public poster presentation for Arizona Archaeology Week, Casa Grande, Arizona, March 21; sponsored by the Arizona Archaeological and Historical Society.

Panels

2012 Moderator of the panel, "The Future is Now: Electric Vehicles," for WEDU Film Screening of "Revenge of the Electric Car," University of South Florida, Tampa, Florida.

2011 Discussant in the forum, "Take Notice: Environmental Awareness and Business Preparedness," at the Sustainability Luncheon, Greater Brandon Chamber of Commerce, Brandon, Florida.

2011 Discussant in the forum, "Education Pathways to Green Jobs," at the Sustainable Communities Workshop, Sarasota, Florida.

2011 Discussant in the forum, "Green Campus as Living Laboratory," at the Taiwan-Florida Higher Education Conference, Orlando, Florida.

2010 Discussant in the forum, "Go Green and Save," at the Sustainability Luncheon, Greater Brandon Chamber of Commerce, Brandon, Florida.

2010 Discussant in the forum, "Multimodal Transportation," at Greenstock, University of South Florida, Tampa, Florida

2010 Discussant in the forum, "Transit Talk," at the Tampa Museum of Art, Tampa, Florida.

2010 Discussant in the forum, "Green Living," at the Tampa Bay Living Green Expo, Dunedin Community Center, Dunedin, Florida.

2010 Moderator of the panel, "Alternative Transportation," at the E3—Energy, Environment and Economics—Fall Forum, Tampa, Florida.

2010 Moderator of the session, "Environmental Issues," at the E3—Energy, Environment and Economics—Spring Forum, Tampa, Florida.

2009 Sustainability at the University of South Florida. Roundtable discussion, "Sustainability Efforts on Bay Area Campuses," at The Studio@620, St. Petersburg, Florida, September 23; sponsored by the Office of Sustainability, University of South Florida.

Workshops

2015 Using Contemporary Art to Explain Complex Quantitative Modeling. Case study lecture in the workshop, "Infusing STEM Research and Teaching with the Creativity of Art and Music" at the USF STEAM (Science, Technology, Engineering, Arts, and Math) Event, College of Arts and Sciences, University of South Florida, Tampa, Florida, March 13.

2012 Early Mesoamerican and South American Cultures. Workshop presented for World History Curriculum Development for 6th grade ancient world history faculty, Pinellas K-12 Social Studies Department, Countryside High School, Clearwater, Florida, August 16.

2011 The Path to Sustainability is Just around the Corner, No Matter Where You Live. Workshop presented at the Disability Rights Florida Professional Development Retreat, Embassy Suites, Tampa, Florida, June 29.

2002 Digging for Culture. Workshop on archaeological field and laboratory methods for 4th grade students at Fitzgerald Middle School at the Sibley Farm Historic Site, Waltham, Massachusetts, June 5; sponsored by the Department of Anthropology, Brandeis University.

2002 Digging for Culture. Workshop on archaeological field and laboratory methods for 4th grade students at Plympton Middle School at the Sibley Farm Historic Site, Waltham, Massachusetts, May 29; sponsored by the Department of Anthropology, Brandeis University.

2002 Digging for Culture. Workshop on archaeological field and laboratory methods for 6th grade students at MacArthur Middle School at the Sibley Farm Historic Site, Waltham, Massachusetts, May 24; sponsored by the Department of Anthropology, Brandeis University.

2002 Digging for Culture. Workshop on archaeological field and laboratory methods for 6th grade students at Whittemore Middle School at the Sibley Farm Historic Site, Waltham, Massachusetts, May 23; sponsored by the Department of Anthropology, Brandeis University.

2002 Digging for Culture. Workshop on archaeological field and laboratory methods for 6th grade students at Whittemore Middle School at the Sibley Farm Historic Site, Waltham, Massachusetts, May 22; sponsored by the Department of Anthropology, Brandeis University.

2002 Digging for Culture. Workshop on archaeological field and laboratory methods for 6th grade students at MacArthur Middle School at the Sibley Farm Historic Site, Waltham, Massachusetts, May 21; sponsored by the Department of Anthropology, Brandeis University.

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Education

Ph.D., Civil/Environmental Engineering, Stanford University, 1/1997.
Ph.D. minor, Chemistry, Stanford University, 1/1997.
M.S., Civil/Environmental Engineering, Stanford University, 6/1992.
B.S., Mechanical Engineering, Texas A&M University, 12/1988.

Professional Experience

Full Professor, University of Texas at Austin, 8/1/2014-Present
Visiting Professor and Foreign Expert, Tongji University, Shanghai, China, 1/1/14-12/31/16
Associate Head, Director of Graduate Studies and Director of Research, Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign (UIUC), 2012-2014.
Chair, Environmental Engineering and Science Program, UIUC, 2008-2011.
Affiliate Professor, Institute for Genomic Biology, UIUC, April 2013-2014.
Affiliate Professor, Micro and Nanotechnology Laboratory, UIUC, Jan 2011-2014.
Affiliate Professor, Geology Department, UIUC, Dec 2009-2014.
Full Professor, UIUC, August of 2008-2014.
Visiting Professor, Tuebingen University, Tuebingen, Germany, 2004-2005.
Associate Professor, UIUC, August 2003-August 2008.
Assistant Professor, UIUC, January 1997-August 2003.
Post Doctoral Researcher, Stanford University, 1996.
Research Assistant, Stanford University, 1992-1996.
Systems Analyst, Anderson Consulting (now Accenture), Houston, TX, 1989-1991.

Professional Affiliations

Association of Environmental Engineering and Science Professors, member since 1999.
American Geophysical Union, member since 1997, Groundwater committee member 1999-2008.
American Society of Civil Engineers, member since 2007.
American Chemical Society, member since 1994.

Honors, Recognition and Selected Service

Chair, USEPA Scientific Advisory Board (SAB) Regulatory Review Working Group, 12/15-Present
USEPA Scientific Advisory Board (SAB), 12/14-Present
USEPA Working Group to Develop New Leaching Standards for Organic Chemicals, 11/16-Present
Bettie Margaret Smith Chair of Environmental Health Engineering, UT Austin, 8/14.
Editor-in-Chief, Journal of Contaminant Hydrology, January 2014-January 2017.
Wiley Research Fellow, DOE's Environmental Molecular Science Laboratory, 2011-2014.
Top poster award for one of my graduate students (Jinyong Liu) at the Gordon Conference on Environmental Sciences: Water, Summer 2014.
US EPA Science Advisory Board Environmental Engineering Committee Member, 1/14-Present

External Advisory Board, Center for Frontiers of Subsurface Energy Security, DOE Energy Frontiers Research Center, University of Texas, 2011-2013.
Certificate of Merit Award for one of my graduate students (Allison Bergquist) for her presentation at the 2013 Spring American Chemical Society Meeting, Indianpolis, IN.
Guest Editor, Environmental Science and Technology, special issue on *Environmental and Geochemical Aspects of Geological Carbon Sequestration*, January 2013.
Top poster award for one of my graduate students (Jinyong Liu) at the Gordon Conference on Environmental Nanotechnology, Summer 2013.
One of the top ten most read articles in Environ. Sci. Technol., January – March, 2013, Impacts of Geochemical Reactions on Geologic Carbon Sequestration (Authors: Jun, Giammar, Werth).
Excellence in Reviewing Award, Environmental Science and Technology, 2012.
One of the ten most cited article since 2008, Journal of Contaminant Hydrology, Werth et al., A review of non-invasive imaging methods and applications in contaminant hydrogeology research, 2010.
American Water Works Association Thomas R. Camp Scholarship for my graduate student, Jong Kwon Choe, 2011.
User Advisory Committee, DOE's Environmental Molecular Science Laboratory, 2011.
Editors Choice Award, *Environmental Science and Technology*, Best Papers of 2010, 2nd Runner-up in the category of Technology, (Zhang et al., *ES&T*, 2010).
Arthur and Virginia Nauman Faculty Scholar, 2006-Present.
NANO conference, Student Platform Presentation Award for my graduate student, Danmeng Shuai, 2010.
Grand Challenge Student Paper Award for my graduate student, Danmeng Shuai, Association of Environmental Engineering and Science Professors, 2009.
National Academy of Engineering's Frontiers of Engineering Education Symposium, Fall 2009.
Science Theme Advisory Panel on Biochemistry/Biogeochemistry and Subsurface Science, DOE's Pacific Northwest Laboratory, Environmental Molecular Science Laboratory, 2009-2011.
BP Award for Innovation in Undergraduate Instruction, 2008.
Invited presentation, Gordon Research Conference, 2008.
Humboldt Research Fellowship Award, 2004-2005.
Association of Environmental Engineering and Science Professors (AEESP), Board of Directors (2005-2008), Secretary (2006-2008), AEESP Foundation BOD (2006-2009).
Distinguished Service Award, Association of Environmental Engineering and Science Professors, 2005, 2008.
ASCE Journal of Environmental Engineering Editor's Award for Service, 2004.
Associate Editor, Journal of Contaminant Hydrology, 2004-Present.
Associate Editor, ASCE, Journal of Environmental Engineering, 2004-2007.
Environmental Engineering and Science Faculty Scholar, 2001-2006.
National Science Foundation CAREER Award, 1998-2002.
Collins teaching fellow, 2000, 2001.
General Electric teaching fellow, 1999.
General Electric teaching scholar, 1998.
List of teachers ranked as excellent by their students for CEE540 (Remediation Design): Fall 2001, 2003, 2008; CEE330 (Intro to Env. Eng.): Fall 2012; CEE440 (Pollutant Fate and Cleanup), Spring 1997, 2000- 2002, 2004, 2006-2012, Fall 2012.

Consulting / Expert Experience

Providing expert report for a Houston law firm regarding the source, extent, and risk of chemicals at a former surfactant processing facility, 9/16-Present.
Provided guidance to the USEPA on issues related to organics leaching from soil and waste material, USEPA Organic Leaching Workshop, 9/15

Reviewed and provided feedback on the DePue Superfund Site Preliminary Phase II Remedial Investigation Report, and associated documents, for DePue, Illinois, 2012-2015.
Provided expert opinion and a deposition for a St. Louis law firm regarding the source, extent, and risk of a hydrocarbon spill in West Alton, Missouri, 2007 & 2008 (West Alton Saale Road Pipeline Release, Missouri Dept of Natural Resources Incident Number 0209261415RDS)
Provided design guidance on a bioremediation project at a hazardous waste site in Indiana, 2007-2009.
Served as a consultant to a Korean government research project, 2006, 2007.
Provided design guidance on a bioremediation pilot project at a hazardous waste site in Chicago (Lockformer Manufacturing), 2004, 2005, 2006, 2008.
Served as a consultant to a Korean geotechnical/environmental company (BEC) during 2004 and 2005.
Provided expert opinion, an expert report, and trial testimony for a Chicago law firm on the source of vapor phase organic pollutants in residential homes above a contaminated drinking water aquifer in suburban Chicago, 2002 (LeClercq vs. The Lockformer Company).
Reviewed report for The Consortium for Risk Evaluation with Stakeholder Participation, 1999.

Publications

Articles in Peer-Reviewed Journals (#indicates work by my graduate student or post-doc)

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105) #Botto, J., S.J. Fuchs, B.W. Fouke, A.F. Clarens, J.T. Freiburg, P.M. Berger, C.J. Werth, Effects of mineral surface properties on supercritical CO2 wettability in a siliciclastic reservoir, Energy & Fuels, 31(5), 5275-5285, 2017.

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100) Chen, X., X. Huo, J Liu, Y. Wang, C.J. Werth, T.J. Strathmann, Exploring beyond palladium: Catalytic reduction of aqueous oxyanion pollutants with alternative platinum group metals and new mechanistic implications, Chem. Eng. J., 313, 745-752, 2017.

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96) #Liu, J., D. Wu, X. Su, M. Han, S. Kimura, D. Gray, J. Shapley, M. Abu-Omar, C.J. Werth, T.J. Strathmann, Configuration Control in the Synthesis of Homo- and Heteroleptic Bis-(oxazolinylphenolato/thiazolinylphenolato) Chelate Ligand Complexes of Oxorhenium (V), Isomer Effect on Ancillary Ligand Exchange Dynamics and Implications for Perchlorate Reduction Catalysis, *Inorganic Chem.*, 55 (5), 2597-2611, 2016.
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84) Strathmann, T.J., C.J. Werth, J.R. Shapley, K.D. Hurley, C.E. Joseph, and A.J. Frierdich. Development of Metal Catalysts for Reducing Perchlorate and NDMA at Ambient Temperature and Pressure. Presented at the 6th International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, CA, May 19-22, 2008.

83) Zhang, C. Y., X. Wang, J. Zilles, R.H. Muller, C.J. Werth, Microbial Transport and Growth Along the Transverse Mixing Zone Between 2,4-DP and Oxygen in a Model Dynamic Soil System. American Geophysical Union Fall Meeting: San Francisco, CA, 15 - 19 December 2008.

82) Dehoff, K., C. Zhang, C.J. Werth, Pore-Scale Study of Mixing Induced Precipitation and Permeability Reduction. American Geophysical Union Fall Meeting: San Francisco, CA, 15 - 19 December 2008.

81) Werth, C.J., A.J. Valocchi, M. Oostrom, H. Yoon, C. Zhang, Physical and Chemical Properties that Give Rise to Flow ByPassing in DNAPL Impacted Groundwater Source Zones, Fall Meeting, Abstract H33J-08, 2008.

80) Yoon, H., C.J. Werth, A.J. Valocchi, M. Oostrom, Impact of multiphase flow and transport on NAPL distribution and NAPL removal mechanisms in unsaturated porous media, Fall Meeting, Abstract H41C-0895, 2008.

79) Wojnar, S., J.K. Choe, B.P. Chaplin, C.J. Werth, Effects of natural water ions, pH, pH buffering technique, and catalyst loading on the activity and selectivity of nitrate reduction using Alumina supported Pd-In bimetallic catalysts, Proceedings of the American Chemical Society Meeting, Division of Environmental Chemistry, Chicago, Spring Meeting, 2007.

78) Chaplin, B.P., J.R. Shapley, C.J. Werth, Long-term catalytic reduction of nitrate using Pd-based bimetallic catalysts under sulfide fouling conditions, Proceedings of the American Chemical Society Meeting, Division of Environmental Chemistry, Chicago, Spring Meeting, 2007.

77) Yang, Y., C.J. Werth, B.J. Mahler, J.T. Wilson, The Role of Carbonaceous Materials in the Fate of Polycyclic Aromatic Hydrocarbons in a Small Urban Watershed, European Geophysical Union General Assembly, Vienna, Austria, 2007.

76) Werth, C.J., C. Zhang, H. Yoon, A.J. Valocchi, N. Basu, J.W. Jawitz, Evaluation of modeling approaches to describe nonaqueous phase liquid dissolution in 3D heterogeneous permeability fields, Spring Meeting of the American Geophysical Union, Acapulco, 2007.

75) Willingham, T.W., C.J. Werth, A.J. Valocchi, Effects of flow focusing on enhancement of transverse-mixing limited reactions at the pore and continuum scale, Fall Meeting of the American Geophysical Union, San Francisco, 2007

74) Yoon, H., C. Zhang, C.J. Werth, A.J. Valocchi, Evaluation of Water Flow-Paths and Dispersivities in Three-Dimensional Heterogeneous Porous Media Based on Magnetic Resonance Imaging Experiments, Eos Trans. AGU, 88(23), Jt. Assem. Suppl., Abstract H41B-02., 2007.

73) Yoon, H., A.J. Valocchi, C.J. Werth, Effects of Soil Moisture Dynamics on NAPL Spill Zone Architecture in Two-Dimensional and Three-Dimensional Heterogeneous Porous Media, Eos Trans. AGU, 88(23), Jt. Assem. Suppl., Abstract H31A-05, 2007.

72) Robinson, B.A., J.A. Vrugt, H. Yoon, C. Zhang, C.J. Werth, P.K. Kitanidis, P.C. Lichtner, and C. Lu, An Inverse Model of Three-Dimensional Flow and Transport in Heterogeneous Porous Media, Eos Trans. AGU, 88(52), Fall Meet. Suppl., Abstract H14C-06, 2007.
71) Yoon, H., A.J. Valocchi, C.J. Werth, M. Oostrom, Numerical investigation of NAPL Source Zone Architecture in Two-Dimensional and Three- Dimensional Unsaturated Porous Media, Eos Trans. AGU, 88(52), Fall Meet. Suppl., Abstract H33H-1732, 2007.
70) Barnuevo, G., C.J. Werth, R. Sanford, Long-Term Potential of Chitin Fermentation Products to Stimulate the Complete Reduction of Chlorinated Solvents, International Conference on Hazardous Waste Management for a Sustainable Future, Bankok, Thailand, January, 2006
69) Chaplin, B., E. Roundy, J. Shapley, C.J. Werth, The Influence of Reduced Sulfur Compounds on Catalytic Nitrate Reduction by Alumina Supported Pd-Cu Catalysts, International Conference on Hazardous Waste Management for a Sustainable Future, Bankok, Thailand, January, 2006
68) Gopalakrishnan, G., C.J. Werth, C.M. Negri, and B.S. Minsker, Monitoring Subsurface Contamination Using Tree Branches, International Conference on Hazardous Waste Management for a Sustainable Future, Bankok, Thailand, January, 2006
67) T. Willingham, C.J. Werth, A.J. Valocchi, Effects of Pore-Scale Characteristics on Transverse Dispersion and Reactive Transport, National Fall Meeting of the American Geophysical Union, Dec., 2006.
66) Werth, C.J., C. Zhang, H. Yoon, A.J. Valocchi, A.G. Webb, Impacts of Source Zone Architecture on Nonaqueous Phase Liquid Dissolution, National Fall Meeting of the American Geophysical Union, Dec., 2006.
65) Zhang, C., C.J. Werth, A.G. Webb, Investigation Of Surfactant-Enhanced Mass Removal And Flux Reduction In 3D Correlated Permeability Fields Using Magnetic Resonance Imaging, National Fall Meeting of the American Geophysical Union, Dec., 2006.
64) Chaplin, B.P., J.R. Shapley, C.J. Werth, Fouling and Regeneration of Pd-based Catalysts Used for Nitrate Reduction, Proceedings of the American Chemical Society Meeting, Division of Environmental Chemistry, San Francisco, Fall Meeting, 2006.
63) Willingham, T., C.J. Werth, A.J. Valocchi, A Look at Sub-Continuum Effects of Pore Structure on Reactive Transport Using Micro-Models and LB-FVM, Gordon Research Conference on Flow and Transport in Porous Media, New Hampshire, Summer 2006.
62) Zhang, C, H. Yoon, C.J. Werth, A.J. Valocchi, A. Webb, Characterization of Water Flow and Solute Transport in Three-Dimensional Heterogeneous Porous Media Using Magnetic Resonance Imaging, Gordon Research Conference on Flow and Transport in Porous Media, New Hampshire, Summer 2006.
61) Xu, H., K. Guy, J. Shapley, D. Johnson, C.J. Werth, J.C. Yang, Structural characterizations of bimetallic Pd/Cu nanocatalysts for the purification of drinking water, Engineering Sustainability, Pittsburgh, Pennsylvania, April 10-12, 2005.
60) Werth, C.J., S. Jeong, S. Kleineidam, P. Grathwohl, Identification of carbonaceous material fractions and properties that control hydrophobic organic chemical sorption in soils and sediments, Proceedings of the Society of Environmental Toxicology and Chemistry, Lille, France, In Press, Spring 2005.
59) Werth, C.J., S. Kleineindam, K. Silvers, S. Jeong, P. Grathwohl, Comparison of physiochemical treatment and petrographic methods to identify organic matter facies that control sorption in soils and sediments, Proceedings of the European Geophysical Union, Vienna, Austria, In Press, Spring 2005.
58) Gopalakrishnan G, C.M Negri, B.S. Minsker and C.J. Werth, "Monitoring soil and groundwater plumes using trees in an existing phytoremediation system", Third International Phytotechnologies Conference, Atlanta, U.S.A., April 2005.
57) Barnuevo, G., R. Sanford, C.J. Werth, Long-Term Management of Chlorinated Solvent Plumes Using a Slow-Release In Situ Electron Donor Source, The Joint International Symposia for Subsurface Microbiology (ISSM 2005) and Environmental Biogeochemistry (ISEB XVII) held in Jackson Hole, WY, August 14-19, 2005

56) Barnuevo, G., R. Sanford, C.J. Werth, Biodegradation of tetrachloroethene in a continuous column system using chitin as the electron donor. National Meeting of the American Society of Microbiology, Atlanta. June, 2005.
55) Schmidt, T., P. Grathwohl, E. Bi, S. Endo, C.J. Werth, Sorption of organic compounds in the subsurface, ConSoil, Bordeaux, Oct 4, 2005.
54) Zhang, C., C.J. Werth, Evaluation of Surfactant-Enhanced Nonaqueous Phase Liquid Dissolution in Heterogeneous Permeability Fields Using Magnetic Resonance Imaging, National Fall Meeting of the American Geophysical Union, Dec., 2005.
53) Zhang, C., C.J. Werth, Effects of source zone architecture on nonaqueous phase liquid dissolution: a magnetic resonance imaging study, National Fall Meeting of the American Geophysical Union, Dec., 2005.
52) Willingham, T., C.J. Werth, A.J. Valocchi, Evaluation of pore-scale effects on transverse dispersion and reactive transport, National Fall Meeting of the American Geophysical Union, Dec., 2005.
51) Chaplin, B., J. Shapley, C.J. Werth, Nitrate reduction using bimetallic catalysts, Midwest Chemistry Workshop, Oct., 2005
50) Werth, C.J., G. Barnuevo, R. Sanford, Long-Term Potential of Chitin Fermentation Products to Stimulate the Complete Bioremediation of Chlorinated Solvents, Midwest Groundwatwer conference, November, 2005
49) Barth, J.C., A. Kapppler, M. Piepenbrink, C. Werth, S. Regenspurg, L. Semprini, G.F. Slater, C. Schueth, P. Grathwohl, New Challenges in Biogeochemical Gradients Research, EOS Transactions, 86(44), 432-433, 2005.
48) Grathwohl, P., T. Gocht, S. Kleineidam, T. Schmidt, C.J. Werth, Role of black carbon (BC) for the fate of hydrophobic organic compounds (HOCs) in soils at the catchment scale, Proceedings of the American Chemical Society Meeting, Division of Environmental Chemistry, Fall Meeting, Washington, D.C., 2005.
47) Werth, C.J, S. Jeong, B. Ligouis, P. Grathwohl, Contribution of black carbon to hydrophobic orgnaic chemical sorption in central Illinois aquifer sediments, Proceedings of the American Chemical Society Meeting, Division of Environmental Chemistry, Fall Meeting, Washington, D.C., 2005.
46) Gocht, T., C.J. Werth, M. Razzaque, P. Grathwohl, Role of carbonaceous particles during accumulation of persistent organic pollutants in rural soils, Proceedings of the American Chemical Society Meeting, Division of Environmental Chemistry, Fall Meeting, Washington, D.C., 2005.
45) Brennan, R.A., R.A. Sanford, C.J. Werth, "Bioremediation of tetrachloroethene using chitin: spatial and temporal effects in a 1-D column system." Proceedings of the Remediation of Chlorinated and Recalcitrant Compounds: The Fourth International Conference, Monterey, CA, 2004.
44) Yoon, H., A.J. Valocchi, C.J. Werth, Impact of spatially distributed NAPL saturation and water content on soil vapor extraction in heterogeneous porous media, Proceedings of the Computational Methods in Water Resources Meeting, University of North Carolina, Chapel Hill, Spring 2004.
43) Martin, J.P., K.S. Sorenson, Jr., R.A. Brennan, R.A. Sanford, C.J. Werth, G.H. Bures, G. Guest, R. Fulton, "Full-scale application of chitin for bioremediation of chlorinated solvents." Proceedings of the Remediation of Chlorinated and Recalcitrant Compounds: The Fourth International Conference, Monterey, CA, 2004.
42) Knutson, C.E., C.J. Werth, A.J. Valocchi, B.J. Travis, Modeling biofilm morphology in porous media at the pore scale, Proceedings of the Computational Methods in Water Resources Meeting, University of North Carolina, Chapel Hill, Spring 2004.
41) Roundy, E., K. Guy, J.R. Shapley, C.J. Werth, The effects of natural water ions and humic acid on nitrate reduction using an alumina supported Pd-Cu catalyst, Proceedings of the American Chemical Society Meeting, Division of Environmental Chemistry, Philadelphia, PN, 2004 Fall Meeting.

40) Jeong, S., C.J. Werth, Spectroscopic characterization of carbonaceous material properties that affect hydrophobic organic chemical sorption, Proceedings of the American Chemical Society Meeting, Division of Environmental Chemistry, Philadelphia, PN, 2004 Fall Meeting.
39) Brennan, R.A., C.J. Werth, R.A. Sanford, "Tracking the growth and distribution of a chloridogenic microbial community in PCE-contaminated sediments treated with chitin." Proceedings of the 10th International Symposium on Microbial Ecology – ISME, Mexico, 2004.
38) Yoon, H., A.J. Valocchi, C.J. Werth, Effect of soil Moisture dynamics on DNAPL spill zone architecture in heterogeneous porous media, EOS Transactions, The American Geophysical Union, Hydrol. Division, San Francisco, CA, 2004 Fall Meeting.
37) Nambi, I. M., C.J. Werth, R.A. Sanford, A Pore-scale investigation of anaerobic dechlorinating bacteria growth, Proceedings of the American Chemical Society Meeting, Division of Environmental Chemistry, New Orleans, 2003 Spring Meeting.
36) Knutson, C., A.J. Valocchi, C.J. Werth, The influence of pore-scale transverse mixing upon biodegradation reactions and biomass growth, EOS Transactions, Joint Meeting of The American Geophysical Union and the European Geophysical Society, Hydrol. Division, Nice, France, 2003 Spring Meeting.
35) Chomsurin, C., C.J. Werth, Pore-Scale Analysis of Mass Transfer from Dense Nonaqueous Phase Liquids Trapped in Low Permeability Zones of an Etched-Silicon Pore Network, EOS Transactions, Joint Meeting of The American Geophysical Union and the European Geophysical Society, Hydrol. Division, Nice, France, 2003 Spring Meeting.
34) Chu, Y., C.J. Werth, A.J. Valocchi, A.G. Webb, Investigation of Soil Vapor Extraction Mechanisms using Magnetic Resonance Imaging (MRI), EOS Transactions, Joint Meeting of The American Geophysical Union and the European Geophysical Society, Hydrol. Division, Nice, France, 2003 Spring Meeting.
33) Yoon, H., A.J. Valocchi, C.J. Werth, Modeling the Influence of Temperature and Water Content on Soil Vapor Extraction, EOS Transactions, Joint Meeting of The American Geophysical Union and the European Geophysical Society, Hydrol. Division, Nice, France, 2003 Spring Meeting.
32) Werth, C.J., C. Chomsurin, C. Zhang, A. Webb, Analysis of pore-scale mass transfer processes that control nonaqueous phase liquid dissolution and the implications for risk assessment, Proceedings of the 1st International Workshop on Groundwater Risk Assessment at Contaminated Sites, Tuebingen University, Tuebingen, Germany, 2002.
31) Valocchi, A.J. and C.J. Werth, Enhancing Student Understanding of Reactive Pollutant Fate and Transport Using Web-Based Interactive Simulation, XIV International Conference on Computational Methods in Water Resources, Delft, The Netherlands, June 23-28, 2002.
30) Valocchi, A.J. and C.J. Werth, Interactive web-based models for teaching students about integrated processes that control pollutant transport and fate in groundwater, Conference of the Association of Environmental Engineering and Science Professors, Toronto, August 11-13, 2002.
29) Sanford, R.A., C.J. Werth, I. Nambi, Pore-scale analysis of microbial growth using a silicon-based micromodel, Conference of the Association of Environmental Engineering and Science Professors, Toronto, August 11-13, 2002.
28) Li, J. and C.J. Werth, Slow desorption mechanisms of volatile organic chemical mixtures in soil and sediment micropores, EOS Transactions, The American Geophysical Union, Hydrol. Division, San Francisco, CA, 2002 Fall Meeting.
27) Chomsurin, C. and C.J. Werth, Characterization of the mass flux to groundwater from DNAPL trapped in low conductivity zones, EOS Transactions, The American Geophysical Union, Hydrol. Division, San Francisco, CA, 2002 Fall Meeting.
26) Yoon, H., A.J. Valocchi, C.J. Werth, The influence of water content on soil vapor extaction, EOS Transactions, The American Geophysical Union, Hydrol. Division, San Francisco, CA, 2002 Fall Meeting.
25) Martin, J.P., K.S. Sorenson, L.N. Peterson, R.A. Brennan, C.J. Werth, R.A. Sanford, G.H. Bures, C.J. Taylor, "Enhanced CAH dechlorination in a low permeability, variably-saturated

medium." Proceedings of the Remediation of Chlorinated and Recalcitrant Compounds Conference, Monterey, CA, 2002.

24) Brennan, R.A., C.J. Werth, R.A. Sanford, K.S. Sorenson, J.P. Martin, G.H. Bures, "From the lab to the field: development and deployment of the halorespiration enhancing redox transition zone (HERTZ) technology for bioremediation." Proceedings of the Association of Environmental Engineering & Science Professors Conference, Toronto, Canada, 2002.

23) Chu, Y., C.J. Werth, A.J. Valocchi, A. G. Webb, Magnetic resonance imaging of nonaqueous phase liquid during soil vapor extraction in heterogeneous porous media, EOS Transactions, The American Geophysical Union, Hydrol. Division, San Francisco, CA, 2002 Fall Meeting.

22) Zhang, C., C.J. Werth, and A.G. Webb, A Magnetic Resonance Imaging Study of Dense Nonaqueous Phase Liquid Dissolution from Angular Porous Media, 6th International Conference on Magnetic Resonance in Porous Media, Ulm, Sept. 8-12, 2002.

21) Brennan, R.A., S.M. Vera, R.A. Sanford, and C.J. Werth, Bioremediation of PCE in a Column Experiment Using Chitin Fermentation, Proceedings of the In Situ and On-Site Bioremediation 6th International Symposium, San Diego, Summer of 2001.

20) Nambi, I., R. Sanford, C.J. Werth, Investigation of the anaerobic reductive dechlorination of chlorinated ethenes at the pore-scale using micromodels, 9th International Symposium, Microbial Ecology Interactions with the Microbial World, Amsterdam, August 2001.

19) Knutson, C. and C.J. Werth, Pore-scale fluid velocity measurements through porous media using MRI, EOS Transactions, The American Geophysical Union, Hydrology Division, Boston, MA, 2001 Spring Meeting.

18) Zhang, C. and C.J. Werth, Characterization of DNAPL dissolution in porous media using magnetic resonance imaging, EOS Transactions, The American Geophysical Union, Hydrology Division, Boston, MA, 2001 Spring Meeting.

17) Nambi, I., C.J. Werth, and R.A. Sanford, Investigation of biodegradation of chlorinated ethenes at the pore scale using silicon based micromodels, EOS Transactions, The American Geophysical Union, Hydrology Division, Boston, MA, 2001 Spring Meeting.

16) Knutson, C., C.J. Werth, and A.J. Valocchi, Pore scale modeling of apparent mass transfer limitations during equilibrium controlled NAPL dissolution, EOS Transactions, The American Geophysical Union, Hydrology Division, Boston, MA, 2001 Spring Meeting.

15) Chomsurin, C. and C.J. Werth, DNAPL Dissolution in a silicon based micromodel using fluorescence microscopy and digital image analysis, EOS Transactions, The American Geophysical Union, Hydrol. Division, Boston, MA, 2001 Spring Meeting.

14) Werth, C.J. and C. Chomsurin, Pore-scale evaluation of dense nonaqueous-phase liquid dissolution using silicon-based micromodels, EOS Transactions, The American Geophysical Union, Hydrol. Division, Boston, MA, 2001 Fall Meeting.

13) Baumann, T., C.J. Werth, R. Niessner, Quantitative observation of colloidal transport with etched silica micromodels, European Geophysical Union XXVII General Assembly, Nice, France, 22.-25.4.2001.

12) Schaefer, C., C. Scheuth, C.J. Werth, and R. Reinhard, Binary desorption isotherms of TCE and PCE from silica gel and natural solids, Transactions of the European Geophysical Society, Hydrology Division, Nice, France, 2000 Spring Meeting.

11) Werth, C.J., H. Castillia, and S.A. McMillan, Structural evaluation of slow desorbing site via isotope exchange column studies, Transactions of the European Geophysical Society, Hydrology Division, Nice, France, 2000 Spring Meeting.

10) Hansen, K.M. and C.J. Werth, Effects of concentration and incubation time on the slow desorption of TCE from a soil, Proceedings of the American Chemical Society Meeting, Division of Environmental Chemistry, Washington DC, 2000 Fall Meeting.

9) Li, J. and C.J. Werth, Evaluating competitive sorption mechanisms in soils and sediments using zeolites, Proceedings of the American Chemical Society Meeting, Division of Environmental Chemistry, Washington DC, 2000 Fall Meeting.

8) Vera S.M., R.A. Brennan, C.J. Werth, and R.A. Sanford, Analysis of substrates to support a halorespiration enhanced redox transition zone, HERTZ, in chlorinated solvent impacted groundwater, Proceedings of the Groundwater 2000 Conference, Amsterdam, 2000.
7) Castilla, H. and C.J. Werth, Effects of temperature on slow desorption characteristics of VOCs in soils and sediments, EOS Transactions, The American Geophysical Union, Hydrology Division, Boston, MA, 1998 Spring Meeting.
6) Li, J. and C.J. Werth, Effects of water on trichloroethylene desorption from silica gel and natural sediments, EOS Transactions, The American Geophysical Union, Hydrology Division, Boston, MA, 1998 Spring Meeting.
5) Werth, C.J. and M. Reinhard, Characterization of slow desorbing sites via isotope exchange column studies, Proceedings of the American Chemical Society Meeting, Division of Environmental Chemistry, Las Vegas, NV, 1997 Fall Meeting.
4) Hollenbeck, K.J., C.F. Harvey, R. Haggerty, C.J. Werth, Mass-transfer for continuous rate distributions: Modeling and estimation, EOS Transactions, The American Geophysical Union, Hydrology Division, San Francisco, CA, 1997 Fall Meeting.
3) McMillan, S. and C.J. Werth, A diffusion model of volatile organic isotope exchange in the slow sorption domain, EOS Transactions, The American Geophysical Union, Hydrology Division, San Francisco, CA, 1997 Fall Meeting.
2) Werth, C.J. and M. Reinhard, Mechanistic investigation of trichloroethylene desorption from model and natural solids at 100% relative humidity, The American Chemical Society, 70th Colloid and Surface Science Symposium, Potsdam, NY, June of 1996.
1) Werth, C.J., J. Farrell and M. Reinhard, The effects of temperature on the slow desorption of trichloroethylene from Livermore sand, clay and bulk fractions: isotherms and kinetics, Proceedings of the American Chemical Society Meeting, Division of Environmental Chemistry, San Diego, CA, 1994 Spring Meeting.

Major Research Grants

34) Werth (PI), $345,000, National Science Foundation, Novel Materials and Reactor Design for Coupled Electrolytic Hydrogen and Production Nitrate Removal with Resource Recovery from Drinking Water, 8/30-2017-8/30/2020
33) Werth (coPI), $330,000, Dow Chemical, Controlling Hydrocarbon Formation Damage to Enhance Souring Control and Energy Production, 6/30/2017-6/30/2020
32) Werth (PI), $659,198, Department of Energy, Basic Energy Sciences, Geosciences Program, Mineral Alteration of Shales by CO2 and Brine Containing Surfactants, 3/30/2017-3/30/2020
31) Werth (PI), $50,000, Tailoring the Structure of Hydrogenation Catalysts to Transform the Economic and Environmental Sustainability of Nitrate Removal from Drinking Water, Texas Hazardous Waste Research Center, 8/30/15-8/31/17.
30) Werth (PI), Valocchi (co-PI), Strathmann (co-PI), Sanford (co-PI), Schaefer (co-PI), Elsner (co-PI), Shouakar-Stash (co-PI), DOD SERDP, $1,069,000, Biogeochemical Processes that Control Natural Attenuation of Trichloroethylene in Low Permeability Zones, 8/15-8/18.
29) Werth (co-PI), Frailey (PI), DOE EFRC, $10,000,000, Center for Geological Storage of CO2, 8/14-8/18.
28) Werth (co-PI), Zilles (PI), NSF, $324k, Novel biomimetic materials for water purification: perchlorate treatment, 8/13-8/16.
27) Werth (co-PI), Fouke (PI), British Petroleum, Energy Bioscience Institute, $550,000, GeoBioCell experimentation of microbial sulfur cycling during oil reservoir souring, 1/1/13-6/31/15.
26) Werth (PI), Strathmann (co-PI), USEPA, $500k, Research and demonstration of innovative drinking water treatment technologies in small systems, 1/12-1/15.
25) Werth (co-PI), Goldenfeld (PI), NASA, $8,044,935, Towards universal biology: Constraints from early and continuing evolutionary dynamics of life on earth, 1/1/13-1/1/18.
24) Werth (PI), USGS-WRR, $250k, Determining the fate and toxicity of PAHs associated with coal-tar and other carbonaceous material particles in urban lakes, 9/11-9/14.

23) Werth (PI), USEPA P3 (People, Prosperity, Plant) Award, Phase II, $75,000, Use of bone char for the removal of arsenic and uranium from groundwater at the Pine Ridge Reservation, 2011-2013.
22) Werth (co-PI), Valocchi (PI), DOE, $1.3 million, Microbial enhanced mixing across scales during in-situ bioreduction of metals and radionuclides at DOE sites, 8/11-8/14.
21) Werth (PI), Marinas (co-PI), King Abdullah University of Science and Technology (KAUST), $3.8 million, Collaborative research on sustainable water development and engineering, 1/10-1/15.
20) Werth (co-PI), Boppart (PI), NSF Major Research Instrumentation Grant, $1,800,000, Acquisition of a molecular imaging instrument for dynamic material and biological systems, 9/2009-9/2012
19) Werth (co-PI), Valocchi (PI), DOE LDRD subcontract, $600k, Integrated experimentation and hybrid modeling for prediction and control of multi phase flow and reaction in CO2 injection and storage, 1/10-1/13.
18) Werth (PI), USEPA P3 (People, Prosperity, Plant) Award, Phase I, $10,000, Use of bone char for the removal of arsenic and uranium from groundwater at the Pine Ridge Reservation, 2010-2011.
17) Werth (PI), UIUC Student Sustainability Council, $13,000, Integration of green roof monitoring into classroom instruction, 2009.
16) Werth (co-PI), Dastgheib (PI), DOE, $1,183k, Reuse of produced water from CO2 enhanced oil recovery, coal-bed methane, and mine pool water by coal-based power plants, 6/09-6/12.
15) Werth (co-PI), Finneran (PI), DOE ERSP, $488k, Characterizing the combined roles of iron and transverse mixing on uranium bioremediation in groundwater using micromodels, 8/09-8/12.
14) Werth (co-PI), Strathmann (PI), NSF, $350k, Development of a sustainable catalytic treatment process for perchlorate, 5/8-5/11.
13) Werth (PI), Zilles (co-PI), NRI / USDA, $460k, Evolution of gene expression and herbicide degradation in a model dynamic soil system, 1/07-1/10.
12) Werth (PI), Zilles (co-PI), GAANN / US Dept. Educ., $540k, enhancing quality and diversity of environmental engineering at UIUC. 5/06-5/10.
11) Werth (PI), Valocchi (co-PI), ESPR / DOE, $920k, Influence of wetting and mass transfer properties of organic chemicals in the vadose zone on groundwater contamination, 3/06-3/10.
10) Werth (PI), NSF Project within Science and Technology Center (Shannon, PI), $800k, Nitrate reduction using bimetallic catalysts, 7/02-7/12.
9) Werth (PI), NIWR-USGS, $170k, Carbonaceous material fractions in sediment and their effect on the sorption and persistence of organic pollutants in small urban watersheds, 5/2005-5/2008.
8) Werth (co-PI), Valocchi (PI), NSF, $400k, Effects of pore-scale mixing on reactive transport, 5/2002-5/2006.
7) Werth (co-PI), Valocchi (PI), EMSP-DOE, $600k, Investigation of pore-scale processes that affect soil vapor extraction, Completed, 8/2001-8/2004.
6) Werth (co-PI), Valocchi (co-PI), Provosts Initiative on Teaching and Advancement, $8,977, Pollutant transport and fate in groundwater: web-based interactive simulation and instruction, 2000-2001.
5) Werth (co-PI), Sanford (PI), NSF, $400k, Effects of redox conditions on the bioavailability and biodegradation of nonaqueous phase chlorinated ethenes at the pore scale, 5/1998-5/2002.
4) Werth (co-PI), Daniel (PI), NSF, $250k, Contaminant transport through a field-scale earthern liner, Completed, 5/1999-5/2002.
3) Werth (PI), NSF, $270k, Competitive sorption of volatile organic chemicals in model and natural solids, 5/1998-5/2001.
2) Werth (PI), UIUC Educational Technology Board, $2,200, Development of web-based applications to integrate research and teaching, 1998-1999.

1) Werth (PI), NSF-CAREER, $250k, Spatial and temporal characterization of dense non-aqueous phase liquids in porous media, 5/1998-5/2002.

Invited Lecturers

Universities/Institutions

31) University of California Irvine, Irvine, CA January 2016, Role of extracellular electron transfer for contaminant metal reduction in sediment nanopores, and implications for hazardous waste site cleanup.
30) Texas Tech University, Lubbock, TX, October 2015, Role of extracellular electron transfer for contaminant metal reduction in sediment nanopores, and implications for hazardous waste site cleanup.
29) University of Houston, Houston, TX, February 2015, Mechanisms of calcium carbonate biomineralization in subsurface reservoirs.
28) Manhattan College, Bronx, New York, November 2014, Development of sustainable catalytic treatment process for nitrate removal from drinking water.
28) University of Texas at Austin, TX, November 2013, Development of sustainable catalytic materials and treatment process for oxyanion removal from drinking water.
27) University of Texas at Austin, TX, Summer 2013, Mechanisms that control $CaCO_3$ biomineralization during reactive transport and the implications for pore space alteration, fluid flow, and mixing.
26) University of Michigan, Ann Arbor, MI, Spring 2012, New Pd-based catalyst materials for sustainable treatment of oxyanions in drinking water.
25) Tuebingen University, Tuebingen, Germany, Summer 2012, Pore-scale study of mixing induced mineral precipitation of relevance to geological carbon sequestration.
24) King Abdullah University of Science and Technology, Fall 2012, Sustainable treatment of oxyanions in drinking water using pd-based catalytic treatment.
23) Tufts University, Spring 2011, Pore-scale study of mixing induced mineral precipitation of relevance to geological carbon sequestration.
22) Notre Dame, Winter 2011, New Pd-based catalyst materials for sustainable treatment of oxyanions in drinking water.
21) King Abdullah University of Science and Technology, Fall 2010, Microfluidic-based sensors for detecting organic pollutants in drinking water resources.
20) Montana State Biofilm Research Center, Fall 2010, Pore-scale evaluation of mass-transfer limited reaction and biomass growth in model groundwater pore systems, and implications for in-situ bioremediation.
19) Sandia National Laboratory, Summer 2010, Experimental and modeling studies of pore-scale reactive transport.
18) Northeastern University, Fall 2009, Effects of pore geometry and biomass growth and activity and implications for bioremediation.
17) University of Nebraska – Lincoln, Spring 2009, Environmental microfluidics and applications in environmental engineering and science.
16) Pacific Northwest National Laboratory, Spring 2007, A pore-scale study of transverse mixing limited reactions and biomass growth, and implications for groundwater remediation.
15) Asian Institute of Technology, Spring 2006, Effects of heterogeneous permeability fields on DNAPL dissolution and cleanup.
14) Washington University, Spring 2006, Effects of transverse dispersion on bioremediation of chlorinated solvents.
13) University of Delaware, Fall 2005, The contribution of black carbon to hydrophobic organic chemical sorption in central Illinois aquifer sediments.
12) Tuebingen University, Tuebingen, Germany, Fall 2004, Determining the contribution of different carbonaceous material fractions to organic pollutant fate in soils and sediments.

11) Hohenheim University, Hohenheim, Germany, Fall 2004, Determining the contribution of different carbonaceous material fractions in soils and sediments to organic pollutant sorption**.**
10) UFZ, Leipzig, Germany, Fall 2004, A pore-scale study of biomass growth effects on transverse mixing limited reactions in groundwater during bioremediaiton.
9) Purdue University, West Lafeyette, IN, Spring 2002, Pore-scale analysis of dense nonaqueous phase liquid dissolution.
8) Technical University of Munich, Munich, Germany, Spring 2002, Evaluation of a halorespiration enhancing redox transition zone.
7) University of Arizona, Tucson, AZ, Fall 2001, Investigation of pore-scale mechanisms controlling nonaqueous phase liquid dissolution.
6) Johns Hopkins University, Baltimore, MD, Fall 2001, Investigation of pore-scale mechanisms controlling nonaqueous phase liquid dissolution.
5) Stanford University, Stanford, CA, Fall 2001, Investigation of pore-scale mechanisms controlling nonaqueous phase liquid dissolution.
4) University of Illinois at Chicago, Spring 2000, Structural evaluation of slow desorbing sites in model and natural sediments.
3) Tuebingen University, Tuebingen, Germany, Spring 2000, Investigation of pore-scale mechanisms controlling DNAPL dissolution: New techniques and initial results.
2) Vanderbilt University, Nashville, TN, Spring 1999, Structural evaluation of slow desorbing sites via temperature stepped desorption profiles.
1) Northwestern University, Evansville, IL, Spring 1998, Sterically hindered counter-diffusion of trichloroethylene isotopes in silica gel and geosorbent micropores.

Conferences/Workshops

25) DOE Basic Research Needs Workshop. Plenary Lecture: Challenges at the water-energy nexus in subsurface energy recovery and storage, DOE Office of Science, Bethesda, Maryland, January, 2017.
24) American Geophysical Union Meeting, San Francisco, Fall 2016, Role of extracellular electron transfer for dissimilatory metal reduction in sediment nanopores, and implications for hazardous waste site cleanup.
23) American Chemical Society Meeting, Philadelphia, PA, Fall 2016, Novel hybrid ion exchange (ix)-catalyst treatment system for nitrate to reduce economic and environmental life cycle costs.
22) American Chemical National Meeting, San Diego, CA, Spring 2016, Metabolically induced calcium carbonate precipitation during reactive transport in porous media.
21) Gordon Research Conference on Environmental Sciences: Water, Holderness, NH, June 2014, Design of novel nanomaterial catalysts for oxyanion reduction in drinking water.
20) American Chemical Society National Meeting, Indianapolis IN, Fall 2013, Mechanisms that control $CaCO_3$ biomineralization during reactive transport and their implications for pore space occlusion.
19) American Chemical Society National Meeting, Indianapolis, IN, Fall 2013, Development of sustainable catalytic materials for removal of oxyanions from drinking water, September 2013.
18) Soil Science Society of American, Orlando, FL, Fall 2013, Mechanisms that control biomineralization of carbonates in porous media.
17) InterPore Conference, Purdue University, May 2012, Precipitation of carbonate minerals along a transverse mixing zone in a microfluidic pore network.
16) Illinois Groundwater Association Spring Meeting, Champaign, IL, April 2012, A pore scale evaluation of mixing limitations in groundwater that hinder mineral sequestration of uranium.
15) DOE EMSL, Richland, WA, 2011, Pore-scale modeling challenge and workshop, Pacific Northwest National Laboratory.
14) American Chemical Society Pacific Rim Regional Conference, Hawaii, December 2010, Catalytic treatment of oxyanions in dinking water.
13) GeoDarmstadt 2010, Germany, 2011, The role of coal-tar-based parking lot sealcoat on polycyclic aromatic hydrocarbon loadings in urban lake sediments in the United States.

12) NSF workshop on contaminated groundwater plumes, Univ. Kansas, 2008.
11) American Chemical Society National Meeting, April 2008, Effects of black carbon on polycyclic aromatic hydrocarbon fate in an urban watershed.
10) Gordon Research Conference, Flow and Transport in Porous Media, Summer 2008, Transverse mixing-limited reaction in groundwater; does pore-scale morphology matter.
9) Aquaterra Biogeochemical Workshop, Tuebingen University, Teubingen, Germany, Spring, 2007, Watershed-scale processes that affect pollutant partitioning, transport, and fate.
8) US-Israeli Workshop on Nanotechnology for Water Purification, March 2006, Impact of natural water solutes on nitrate reduction by alumina-supported Pd-Cu catalysts.
7) American Geophysical Union National Meeting, San Francisco, Fall 2006, Impact of source zone architecture on dense nonaqueous phase liquid dissolution.
6) National Institute of Environmental Health Sciences (NIEHS) Superfund Basic Research Program, February 24-25, 2005, DNAPL Source Zone Workshop, NAPL Dissolution – Pore Scale Experimentation, Tucson, AZ.
5) German – American workshop on Biogeochemical Gradients, Sponsored by the German National Science Foundation, Spring 2005, Effects of solute mixing at the pore scale on reactions in groundwater.
4) 1st International Workshop on Groundwater Risk Assessment at Contaminated Sites, Tuebingen, Germany, Spring 2002, Analysis of pore-scale mass transfer processes that control nonaqueous phase liquid dissolution and the implications for risk assessment.
3) American Geophysical Union National Meeting, San Francisco, Fall 2001, Pore-scale evaluation of dense nonaqueous-phase liquid dissolution using silicon-based micromodels.
2) European Geophysical Society Meeting, Nice, France, Spring 2000, Structural evaluation of slow desorbing site via isotope exchange column studies.
1) American Chemical Society National Meeting, Las Vegas, NV, Fall 1997, Characterization of slow desorbing sites via isotope exchange column studies.

Classroom Instructional Activities

2017, Spring, CE385J-Hazardous Waste Management
2016, Fall, CE364-Wastewater Design
2016, Spring, CE385J-Hazardous Waste Management
2015, Fall, CE364-Wastewater Design
2015, Spring, CE377k/397-Energy and Water
2014, Fall, CE385J-Hazardous Waste Management
2014, Spring: CEE540-Remediation Design
2013, Fall: CEE440-Fate and Cleanup of Environmental Pollutants
2013, Spring: CEE540-Remediation Design
2012, Fall: CEE440-Fate and Cleanup of Environmental Pollutants
2012, Spring: CEE440-Fate and Cleanup of Environmental Pollutants
2012, Spring: CEE498SIS-Sustainable Infrastructure Systems
2011, Fall: CEE330-Introduction to Environmental Engineering
2011, Spring: CEE440-Fate and Cleanup of Environmental Pollutants
2010, Fall: CEE330-Introduction to Environmental Engineering
2010, Spring: CEE440-Hazardous and Solid Waste Management
2009, Fall: CEE498SUE-Sustainable Urban Engineering
2009, Spring: CEE440-Hazardous and Solid Waste Management
2008, Fall: CEE540-Remediation Design
2008, Spring: CEE440-Hazardous and Solid Waste Management
2007, Fall: CEE498SUE-Sustainable Urban Engineering
2007, Spring: CEE440-Hazardous and Solid Waste Management
2006, Fall: CEE498SUE-Sustainable Urban Engineering
2006, Spring: CEE440-Hazardous and Solid Waste Management

2006, Spring: Short course on Environmental Mass Transfer Processes, Tuebingen University, Tuebingen, Germany.
2005, Fall: CEE540-Remediation Design
2004-2005: Guest lectures in MS courses at Tuebingen University, Tuebingen, Germany
2003, Spring: CEE440-Hazardous and Solid Waste Management
2002, Fall: CEE540-Remediation Design
2002, Spring: CEE440-Hazardous and Solid Waste Management
2001, Fall: CEE540-Remediation Design
2001, Spring: CEE440-Hazardous and Solid Waste Management
2000, Fall: CEE540-Remediation Design
2000, Spring: CEE440-Hazardous and Solid Waste Management
1999, Fall: CEE537-Water Quality Processes I
1999, Spring: CEE440-Hazardous and Solid Waste Management
1998, Fall: CEE442-Physical Principles of Environmental Engineering
1998, Spring: CEE440-Hazardous and Solid Waste Management
1997, Fall: CEE540-Remediation Design
1997, Spring: CEE440-Hazardous and Solid Waste Management

Graduate Students Advised, Theses Titles, and (for PhD students) Current Position

M.S. Students

31) Bertoch, Madison, M.S. thesis, UT Austin, 2016, Catalytic Nitrate Reduction in Drinking Water Using a Trickle Bed Reactor.
30) Seraj, Sarah, M.S. thesis, UT Austin, 2016, Synthesis of Palladium-Gold Alloy Nanoparticle Catalysts for the Reduction of Nitrite in Water.
29) Botto, Juien, M.S. thesis, UT Austin, 2016, CO_2 Wettability Of The Mount Simon Sandstone And Implications For Predicting Co_2 Pore Scale Transport And Storage Capacity.
28) Berns, Erin, M.S. thesis, UIUC, 2015, Manganese Dioxide Reduction Kinetics By *Geobacter Sulfurreducens* And Associated Biofilm Morphology In A Flow-Through Reactor.
27) Laleian, Artin, M.S. thesis, UIUC, 2014, Approximating Three-Dimensional Fluid Flow In A Microfluidic Device With A Two-Dimensional, Depth-Averaged Lattice Boltzmann Method.
26) Spurti Akki, M.S. thesis, UIUC, 2012, Selection and Characterization of DNA Aptamers for 17b-Estradiol.
25) Tory Boyd, M.S. thesis, UIUC, 2012, The Effect Of Calcium And Magnesium On Carbonate Mineral Precipitation During Reactive Transport In A Model Subsurface Pore Structure.
24) Michael Fanizza, M.S. thesis, UIUC, 2011, Precipitation And Dissolution Of Uranyl Phosphates In A Microfluidic Pore Structure.
23) Cole Duckworth, M.S. Thesis, UIUC, 2011, Sulfate Removal From Water Produced During Co_2 Enhanced Oil Recovery, Coal-Bed Methane Recovery, And Mining Operations Using Anion Exchange Resins.
22) Rui Zhang, M.S. Thesis, UIUC, 2011, Elucidation of Nitrate Reduction Mechanisms on a Pd/In Bimetallic Catalyst using Isotope Labeled Nitrogen Species.
21) Ken Ng, M.S. Thesis, UIUC, 2011, Construction Of Green Fluorescent Protein Plasmids For Labeling Of Herbicide-Degrading Delftia Acidovorans MC1071.
20) Karl DeHoff, M.S. thesis, UIUC, 2010, Pore-Scale Characterization Of Transverse Mixing-Induced Calcium Carbonate Precipitation Of Relevance To Geological Carbon Sequestration.
19) Amanda Marruffo, M.S. thesis, UIUC, 2010, Modeling The Impact Of Petroleum Mixtures Released From Railroad Tank Car Accidents On Groundwater Contamination And Cleanup Times.
18) Jong Kwon Choe, M.S. thesis, UIUC, 2009, Influence Of Rhenium Speciation On The Stability And Activity Of Palladium/Rhenium Bimetal Catalysts Used For Perchlorate Reduction.
17) Scott Nellis, M.S. thesis, UIUC, 2008, Effect Of Mixture Properties And Aging On Soil Wettability At The Department Of Energy's Hanford Site.

16) Garvin Prescod, M.S. thesis, UIUC, 2008, Methods for Fabrication of Microfluidic Systems to Evaluate Multi-Phase Fluid Behavior in Porous Media.
15) Neha Hridaya, M.S. thesis, UIUC, 2008, Development Of An Environmental Consequence Model For Assessing The Impact Of Hazardous Chemical Spills From Railroad Tank Cars On Groundwater Cleanup Times And Cost.
14) Sheldon Adrian Gale, M.S. thesis, UIUC, 2005, Development Of Methods For Characterization Of Biomass Growth In Porous Media Along A Transverse Mixing Zone.
13) Rene Suarez-Soto, M.S. thesis, UIUC, 2005, Biological Degradation Of Tetrachloroethylene (PCE) At The Pore Scale.
12) Eric Roundy, M.S. thesis, UIUC, 2005, The Effects of Natural Water Ions and Humic Acid on Nitrate Reduction Using an Alumina Supported Pd-Cu Catalyst.
11) Julia Stamerjohn, M.S. thesis, UIUC, 2002, Effects of Moisture on Tricholoroethene Sorption to Model and Natural Solids.
10) Thomas Willingham, M.S. thesis, UIUC, 2001, Long Term Evaluation of Transport Through a Field-Scale Compacted Earthen Liner.
9) Changyong Zhang, M.S. thesis, UIUC, 2001, A Magnetic Resonance Imaging Study of Dense Nonaqueous Phase Liquid Dissolution from Angular Porous Media.
8) Karen Hansen, M.S. thesis, UIUC, 2000, Effects of Concentration and Incubation Time on the Slow Desorption of TCE From a Soil.
7) Alicia Aragon, M.S. thesis, UIUC, 2000, Characterization of Non-Aqueous Phase Liquid Dissolution in Porous Media Using Nuclear Magnetic Resonance Imaging.
6) Sinziana Vera, M.S. thesis, UIUC, 2000, Evaluation of Different Polymeric Organic Materials (POMs) to Stimulate Reductive Dechlorination.
5) Andrew Fuller, M.S. thesis, UIUC, 2000, Development and Testing of a Protocol for Determining the Photochemical Generation of Hydroxyl Radical, Singlet Oxygen, and Peroxyl Radicals in Natural Waters.
4) Chad Knutson, M.S. thesis, UIUC, 2000, Pore-Scale Modeling of Dissolution from Variably Distributed NAPL Blobs.
3) Bradley Grens, M.S. thesis, UIUC, 1999, Durability of Wood-Based Versus Coal-Based Granular Activated Carbon.
2) Humberto Castilla, M.S. thesis, UIUC, 1998, Effects of Temperature on the Slow Desorption of VOCs in Soils and Sediments.
1) Scott McMillan, M.S. thesis, UIUC, 1998, A Sterically-Hindered Counter-Diffusion Model of Trichloroethylene Isotope Exchange in Silica Gel and Geosorbent Micropores.

Ph.D. Students

17) Victoria Boyd, Ph.D. thesis, UIUC 2017, Fate Of Polycyclic Aromatic Hydrocarbons Associated With Coal Tar, Asphalt, Charcoal, And Soot In Urban Lake Sediments. *Current Position: Environmental Engineer at GSI Environmental Inc*.
16) Allison Bergquist, Ph.D. thesis, UIUC 2016, Development Of A Hybrid Ion Exchange-Catalyst System To Denitrify Ion Exchange Waste Brine. *Current Position: Environmental Scientist in the Water Treatment Group at Exxon-Mobil*.
15) Najwa Obeid, Ph.D. thesis, UIUC 2015, Low Impact Development In Urban Areas For Integrated Watershed Management Across Scales. *Current Position: Water Resources Engineer at Louis Berger*.
14) Jinyong Liu, Ph.D. thesis, UIUC, 2014, Development of Oxorhenium Complexes and Bimetallic Re-Pd/C Catalysts for Perchlorate Reduction in Water. *Current Position: Assistant Professor at University of California Riverside.*
13) Jong Kwon Choe, Ph.D. thesis, UIUC, 2013, Development Of A Sustainable Water Treatment Technology For Oxyanions Using Palladium-Based Catalysts: Catalyst Design, Reaction Mechanisms, And Life Cycle Assessment. *Current Position: Assistant Professor at Seoul National University.*

12) Danmeng Shuai, Ph.D. thesis, UIUC, 2012, Development Of Sustainable Pd-Based Catalysts For Emerging Contaminant Removal From Drinking Water. *Current Position: Assistant Professor at George Washington University.*
11) Yaning Yang, Ph.D. thesis, UIUC, 2009, The Role Of Carbonaceous Materials In Pavement Dust, Soils, And Lake Sediments On The Fate Of Organic Pollutants In Small Urban Watersheds. *Current Position: Environmental Scientist at Bayer.*
10) Gayathri Gopalakrishnan, Ph.D. thesis, UIUC, 2008, Nature's Sensors: Using Plants As An Alternative Monitoring Approach for Subsurface Contamination. *Current Position: Research Scientist at The Space Science Institute.*
9) Brian Chaplin, Ph.D. thesis, UIUC, 2007, Mechanistic Study of Fouling and Regeneration of Palladium-Based Bimetallic Catalysts Used for the Removal of Pollutants from Drinking Water. *Current Position: Assistant Professor at University of Illinois, Chicago.*
8) Thomas Willingham, Ph.D. thesis, UIUC, 2006, Analysis Of Solute Mixing At The Pore-Scale Using Micromodels And Lattice-Boltzmann Finite Volume Modeling. *Current Position: Senior Scientist at Exxon-Mobil.*
7) Changyong Zhang, Ph.D. thesis, UIUC, 2005, Impacts Of Source Zone Architecture On Nonaqueous Phase Liquid Dissolution And Cleanup: A Magnetic Resonance Imaging Study. *Current Position: Scientist at Exxon-Mobil.*
6) Hongkyu Yoon, Ph.D. thesis, UIUC 2005, Influence of Soil Moisture Dynamics on DNAPL Spill-Zone Architecture and Its Impact on Mass Removal Mechanisms During Soil Vapor Extraction in Heterogeneous Porous Media. *Current Position: Research Scientist at Sandia National Laboratory.*
5) Chad Knutson, Ph.D. thesis, UIUC, 2004, A Pore Scale Study of Substrate Mixing and Biological Degradation in Porous Media. *Current Position: Quality Assurance Engineer, Wolfram Research.*
4) Sangjo Jeong, Ph.D. thesis, UIUC, 2004, The Contribution of Different Carbonaceous Material Fractions to the Sorption of Hydrophobic Organic Contaminants to Subsurface Sediments. *Current Position: Associate Professor at Korean Military Academy.*
3) Rachel Brennan, Ph.D. thesis, UIUC, 2003, Evaluation of Chitin-Enhanced Bioremediation of Chlorinated Solvents. *Current Position: Associate Professor at Penn State.*
2) Cheema Chomsurin, Ph.D. thesis, UIUC, 2003, Pore-Scale Analysis of Dense Nonaqueous Phase Liquid Dissolution Using Silicon-Based Micromodels. *Current Position: Associate Professor at Kasetsart University, Thailand.*
1) Jun Li, Ph.D. thesis, UIUC, 2002, Evaluating Competitive Sorption Mechanisms of Volatile Organic Chemical Mixtures in Soils and Sediments Using Polymers and Zeolites. *Current Position: Environmental Engineer at Sandia National Laboratory.*

Current Graduate Students

MS. Thesis Students:

None.

Ph.D. Thesis Students:

7) Samantha Fuchs (Expected Graduation: May 2017)
6) Reinaldo Alcalde (Expected Graduation: May 2018)
5) Artin Laleian (co-advise with Valocchi, Expected Graduation: Mary 2018)
4) Erin Berns (Expected Graduation: May 2018)
3) Lang Zhou (Expected Graduation: Spring 2017)
2) Spurti Akki (co-advise with Silverman, Expected Graduation: Spring 2017)
1) Kyle Michelson (Expected Graduation: Fall 2016)

Post-doctoral Associates and Visiting Scientists

Post-doc, Jinyong Liu, 8/2014-12/2015, University of Illinois Ph.D. (co-advise with Strathmann)
Post-doc, Yin Wang, 2/2013-8/2014, Washington University Ph.D. (co-advise with Strathmann)

Visiting Scientist, Xuefei Zhou, 1/1/2013-7/31/2014, Professor at Tongji University, China.
Post-doc, Youneng Tang, 8/2012-12/2014, Arizona State Ph.D. (co-advise with Valocchi, then Fouke)
Post-doc, Rajveer Singh, 11/2011-12/2014, Drexel Ph.D. (co-advise with Fouke).
Visiting Scientist, Sangjo Jeong, 8/2011-8/2012, Professor at Korean Military Academy.
Visiting Scientist, Zeynep Erin, 8/2011-12/2011, Professor at Istanbul Technical University.
Post-doc, Changyong Zhang, 2007-2009, UIUC Ph.D. (co-advised with Zilles and Valocchi)
Post-doc, Hongkyu Yoon, 2006-2010, UIUC Ph.D., (co-advised with Valocchi).
Post-doc, Hongkyu Yoon, 2005-2006, UIUC Ph.D., (co-advised with Barkan).
Post-doc, Ram Achayra, 2005-Present, Nepal, Netherlands Ph.D.), (co-advised with Valocchi).
Post-doc, Yanjie Chu, 2000-2003, U. of Delaware Ph.D. (co-advised with Valocchi).
Post-doc, Indumathi Nambi, 2000-2002, Clarkson University Ph.D. (co-advised with Sanford).
Visiting Scientist, Thomas Baumann, 2001, Researcher, Technical University of Munich.

Selected University Service

Associate Chair of Environmental Engineering in Civil, Architecture, and Environmental Engineering, 2017-2018.
Chair, Cockrell School of Engineering Promotion and Tenure Committee, 2017-2018.
Cockrell School of Engineering Promotion and Tenure Committee, 2016-2018.
Chair, Faculty Search Committee, CAEE, UT Austin, 2016-2017.
Chair, Awards Committee, CAEE, UT Austin, 2015-2016.
EWRE Graduate Advisor, UT Austin, 2015-2016.
Associate Head, Director of Graduate Studies and Research, UIUC, 2012-8/2014.
Faculty Supervisor for Admissions Administrative Assistant, and for Graduate Studies Administrative Assistant, UIUC, 2012-8/2014.
Coordinator, CEE PhD Student Professional Development Program, UIUC, 2012-8/2014.
Management Committee, Department of Civil & Environ. Eng., UIUC, 2012-8/2014.
Chair, Environmental Engineering and Science Program, UIUC, 2008-2011.
Faculty Supervisor for the EES Administrative Assistant, UIUC, 2008-2011.
CEE Promotion and Tenure Committee, UIUC, 2009-Present.
Co-Leader of Interdisciplinary Research Team (one of three teams) that comprise the NSF Science and Technology Center of Advanced Materials for the Purification of Water with Systems (CAMPWS), UIUC, 2005-2010.
UIUC GAANN Program Manager, UIUC, 2006-2011.
Director, Environmental Engineering and Science Laboratories, UIUC, 2005-2008.
Faculty Supervisor for the EES Laboratory Manager, UIUC, 2005-2008.
CEE Department Advisory Committee, UIUC, 2002-2004, 2005-2007.
Chair, Faculty Search Committee for Environmental Microbiology Position, UIUC, 2005.
Chair, CEE Department Advisory Committee, UIUC, 2004, 2007.
Faculty Search Committee for Biotechnology Position, UIUC, 2003.
Faculty Search Committee for Environmental Chemistry Position, UIUC, 2002.
Graduate Admissions Committee, UIUC, 2000-2002.

Selected National Service/Activities Not Covered Above

DOE BER proposal review panel, Spring 2017.
Ecological and Environmental Engineering Program Review Committee for Purdue University in West Lafayette, IN, Fall 2013.
Co-Organized a special session on 'Reactive Transport' for the 2013 Conference of the Association of Environmental Engineering and Science Professors.
Civil and Environmental Engineering Program Review Committee for University of Utah in Salt Lake City, Utah, Spring 2013.

Organizing Committee, Gordon Research Conference on Flow and Transport in Permeable Media, 2010-2012.
Co-Organized a special session in honor of the retirement of Professor Martin Reinhard, Spring 2012 meeting of the American Chemical Society.
Co-Organized a special session on 'Carbon Capture and Storage' for the 2011 Conference of the Association of Environmental Engineering and Science Professors.
Reviewer for DOE EMSL user proposals, 2009-Present.
NSF proposal review panel, Fall 2009.
DOE proposal review panel, Fall 2009.
Environmental Engineering Program Review Committee for the Air Force Institute of Technology in Dayton, OH, Spring 2009.
Groundwater Committee Member (Hydrology Division), American Geophysical Union, 1999-2008.
Co-Organized a special session on 'Abiotic Transformation Processes for Micropollutants in Drinking Water and Drinking Water Resources' for the Spring 2008 meeting of the American Chemical Society.
Co-Organized a special session on 'Sustainability in Water Supply – Catalytic Control of Emerging Micropollutants' for the Spring 2007 meeting of the American Chemical Society.
Co-Organized a special session on 'Modeling Reactive Transport in Porous Media' for the Fall 2007 meeting of the American Geophysical Union.
DOE proposal review panel, Fall 2006.
Instructor, Short course on Environmental Mass Transfer Processes at Tuebingen University in Tuebingen, Germany, Spring 2006.
Chair, Web Site Committee, Association of Environmental Engineering and Science Professors, 2003-2005.
Instructor, Multiple lectures in three courses that are part of the M.S. program at Tuebingen University in Tuebingen, Germany, 2004-2005.
USDA proposal review panel, Winter 2003.
USEPA proposal review panel, Summer 2003.
Co-Organized a special session on 'Reconciling Sorption Theories of Organic Compounds in Soils and Sediments' for the Spring 2003 Joint meeting of the American Geophysical Union and the European Geophysical Society.
USEPA proposal review panel, Fall 2002.
Co-Organized a special session on 'Diffusion in Porous Materials' for the 2002 Fall meeting of the American Geophysical Union.
Co-Organized and co-chaired a special session on 'Pore-scale characterization of subsurface transport and fate processes' for the 2001 Spring meeting of the American Geophysical Union.
NSF proposal review panel, Summer 2000.
Co-Organized a symposium on the 'Sequestration of organic solutes in natural organic matter and mineral aggregates' at the 2000 Fall meeting of the American Chemical Society.
Contributed (by invitation) a chapter to the National Environmental Policy Institute's document on 'The bioavailability of organic compounds in soil,' 1999.
Session co-chair, Hydrology Division, American Geophysical Union, Boston, MA, 1998 Spring Meeting.

Journal and Proposal Reviewing Activities

Reviewing multiple manuscripts each and every year from 1997-Present for *Environmental Science and Technology, Journal of Contaminant Hydrology, Water Resources Research, Advances in Water Research.*
Periodically reviewing manuscripts since 1997 for *Water Research, Environmental Engineering Science, Langmuir, Environmental Toxicology and Chemistry, Journal of Hydrology, Soil and Sediment Contamination: An International Journal, Advances in Water Research, ASCE Journal of Environmental Engineering, Journal of Environmental Quality.*
Reviewing proposals in most years since 1997 for the *National Science Foundation*

Reviewing proposals in most years since 1997 for the *Department of Energy.*
Reviewed one or more proposals since 1997 for the *USDA*, *Petroleum Research Fund, Illinois Groundwater Consortium, UIUC Research Board, European Union, Vanderbilt University.*

Kimberly Wise White, Ph.D.
Phone: [redacted]
Email: Kimberly_White@americanchemistry.com

PROFESSIONAL EXPERIENCE

AMERICAN CHEMISTRY COUNCIL, WASHINGTON, DC (June 2011– Present)
SENIOR DIRECTOR – CHEMICAL PRODUCTS & TECHNOLOGY DIVISION
Serve as a lead scientific advisor to committees on the development and execution of chemical hazard assessment related research and science policy activities; analyze scientific documents, including published studies and chemical assessments; and act as representative and liaison with agencies on chemical assessment related issues.

AMERICAN PETROLEUM INSTITUTE, WASHINGTON, DC (March 2009 – June 2011)
SCIENTIFIC ADVISOR
Worked with scientific experts to identify and prioritize short-term and long-range research objectives; Managed toxicology related research projects, regulatory response, and product stewardship efforts.

BOAR'S HEAD PROVISIONS CO., INC. , JARRATT, VA (December 2006 – February 2009)
ENVIRONMENTAL MANAGER
Managed environmental compliance for all operations; developed and implemented policies, and training materials for environmental compliance and sustainability; and conducted environmental compliance, process safety management and risk management audits.

RESOURCE MANAGEMENT CONCEPTS, INC., ARLINGTON, VA (January 2006 – December 2006)
ENVIRONMENTAL SCIENTIST
Conducted training and audits to evaluate compliance with environmental management system procedures utilized at airport operations.

VIRGINIA COMMONWEALTH UNIVERSITY, RICHMOND, VA (August 2005 – December 2005)
POST-DOCTORAL ASSOCIATE
Conducted in vitro research on glioblastoma multiforme cellular toxicity and correlating drug therapy interaction.

TEXAS SOUTHERN UNIVERSITY, HOUSTON, TX (April 2002 – August 2005)
GRADUATE RESEARCH ASSISTANT / TEACHING ASSISTANT
Conducted in vivo and in vitro neurotoxicity related research projects; mentored students in research projects; presented research at scientific conferences; and taught undergraduate level biology courses.

PORT OF HOUSTON AUTHORITY, HOUSTON, TX (June 2004 – April 2005)
INTERN, ENVIRONMENTAL AFFAIRS DEPARTMENT
Implemented an environmental compliance training program and conducted environmental compliance audits of Port Authority properties.

U.S. DEPARTMENT OF STATE, WASHINGTON, DC (February 2004 – May 2004)
INTERN, OFFICE OF SCIENCE AND TECHNOLOGY
Developed matrices of U.S. science and technology interest between countries; provided planning and implementation tools for the kick off event of educational initiatives; and served as liaison with federal agencies in the application process for the US Embassy Science Fellows Program.

LEXICON GENETICS, HOUSTON, TX (July 2001 – January 2003)
RESEARCH ASSISTANT
Conducted research focused on DNA sequencing.

EDUCATION

- Ph. D in Environmental Toxicology, Texas Southern University, Houston, TX, 2005
- M.S. in Biology, Texas Southern University, Houston, TX, 2004
- B.S. in Biology, Texas Southern University, Houston, TX, 1999

AUTHORSHIP

- Borgert, C., Wise, K., and Becker, R. "Modernizing problem formulation for risk assessment necessitates articulation of mode of action." Regulatory Toxicology and Pharmacology 72, no. 3 (2015): 538-551.
- Becker, R.., Hays, S., Kirman, C., Aylward, L., and Wise, K. "Interpreting estrogen screening assays in the context of potency and human exposure relative to natural exposures to phytoestrogens." Birth Defects Research Part B: Developmental and Reproductive Toxicology 101, no. 1 (2014): 114-124.
- Rhomberg, L., Goodman, J., Bailey, L., Prueitt, R., Beck, N., Bevan, C., Honeycutt, M., Scherer, R., Wise, K., and Becker, R. "A survey of frameworks for best practices in weight-of-evidence analyses." Critical reviews in toxicology 43, no. 9 (2013): 753-784.
- Barr, J., Sharma, C., Sarkar, S., Wise, K., Dong, L., Periyakaruppan, A., and Ramesh, G. "Nicotine induces oxidative stress and activates nuclear transcription factor kappa B in rat mesencephalic cells." Molecular and Cellular Biochemistry 297, no. 1 (2007): 93-99.
- Sharma, C., Sarkar, S., Periyakaruppan, A., Barr, J., Wise, K., Thomas, R., Wilson, B., and Ramesh, G.. "Single-walled carbon nanotubes induces oxidative stress in rat lung epithelial cells." Journal of Nanoscience and Nanotechnology 7, no. 7 (2007): 2466-2472.
- Manna, S., Rangasamy, T., Wise, K., Sarkar, S., Shishodia, S., Biswal, S., and Ramesh, G. "Long term environmental tobacco smoke activates nuclear transcription factor-kappa B, activator protein-1, and stress responsive kinases in mouse brain." Biochemical Pharmacology 71, no. 11 (2006): 1602-1609.
- Sarkar, S, Wise,K., Manna, S., Ramesh, V., Yamauchi, K., Thomas, R., Wilson, B., Kulkarni, A.,. Pellis, N., and Ramesh, G. "Activation of activator protein-1 in mouse brain regions exposed to simulated microgravity." In Vitro Cellular & Developmental Biology-Animal 42, no. 3 (2006): 96-99.
- Manna, S., Sarkar, S., Barr, J., Wise, K., Barrera, E., Jejelowo, O., Rice-Ficht, A., and Ramesh, G. "Single-walled carbon nanotube induces oxidative stress and activates nuclear transcription factor-κB in human keratinocytes." Nano letters 5, no. 9 (2005): 1676-1684.
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- Wise, K., Manna, S., Barr, J., Gunasekar, P., and Ramesh, G. "Activation of activator protein-1 DNA binding activity due to low level manganese exposure in pheochromocytoma cells." Toxicology letters 147, no. 3 (2004): 237-244.

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S. Stanley Young
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Current Position:
CEO CGStat LLC

Education
BS, MES, PhD, 1966, 1968, 1974, North Carolina State University, Raleigh, NC

Postions

1972-1987	Research Statistician, Eli Lilly&Co.
1987-2000	Principle Consultant, GlaxoWelcome
2000-2002	Director, Statistical Research, GlaxoSmithKline
1996-	Adjunct Professor of Statistics, NCSU
1998-	Adjunct Professor of Statistics, University of Waterloo
2002-	CEO, CGStat, LLC
2002-2015	Assistant Director for Bioinformatics, NISS
2004-	Adjunct Professor of Statistics, University of British Columbia
2015-	Adjunct Professor of Biostatistics, Georgia Southern University

Other Experience and Professional Memberships

1972-	American Statistical Association
1972-	Biometrics Society
2004	Program Chair, ASA's Section on SPES
2003	Program Chair, Midwest Biopharmaceutical Statistics Workshop

Honors

1980	Best Statistics Paper, SAS Users' Group International
1989	Best Statistics Paper, SAS Users' Group International
1990	Fellow of the American Statistics Association
1991	Best Statistics Application Paper, ASA
1998	Statistics in Chemistry Award, ASA
1999	Virtual Screening Conference, Marburg Germany
2000	Statistics in Chemistry Award, ASA
2000	Participant of "Biostatistics Workshop" at the Oberwolfach Institute in Germany
2000	Participant of "Computational Chemistry Workshop" Beilstein Institute of Germany
2006	Fellow of the American Association for the Advancement of Science
2006	Statistics in Chemistry Award, ASA

Book
Peter H. Westfall and S. Stanley Young (1993) *Resampling-based Multiple Testing*, John Wiley&Sons

Book Chapters
Young SS, Hawkins DM. (2004) Using recursive partitioning analysis to evaluate compound

selection methods. Chemoinformatics: Methods and Protocols Ed. J. Bajorath. The Humana Press Inc., Totowa, NJ 07512

Westfall, W.H., Zaykin, D.V. and Young, S.S. (2002) Multiple tests for genetic effects in association studies. Biostatistical Methods. S.W. Looney, Ed. Humana Press Inc., Totowa, NJ 07512

Lambert CG, Young SS. (2006) Pharmaceutical research and development productivity: Can software help? Computer Applications in pharmaceutical research and development, Ekins S, Wang B. Eds Wiley

Young SS, Obenchain RL, Lambert CG. (2016) A Problem of Bias and Response Heterogeneity. In Standing with Giants. Eds. Moghissi AA and Ross G. American Council on Science and Health.

Patents

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Lam RLH, Welch WJ, Young SS. Cell based binning methods and cell coverage system for molecule selection. US Patent 6,850,876 (2000)

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Papers

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Young, S.S., and Hawkins, D.M. (1995) Analysis of a 2^9 full factorial chemical library. *J. Medicinal Chemistry* 38, 2784-2788.

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Obenchain RL, Young SS. (2013) Advancing statistical thinking in health care research. *Journal of Statistical Theory and Practice* 7, 456-469.

Young SS, Xia JQ. (2013) Assessing geographic heterogeneity and variable importance in an air pollution data set. *Statistical analysis and data mining.* 6, 375-386.

Young SS. (2013) Re: "Modeling the association between particle constituents of air pollution and health outcomes. *American Journal of Epidemiology* 177, 195.

Zhang K, Hughes-Oliver JM, Young SS. (2013) Analysis of high-dimensional structure-activity screening datasets using the Optimal Bit String Tree. *Technometrics* 55, 161-173.

Fogel P, Hawkins DM, Beecher C, Luta G, Young SS. (2013) A tale of two matrix factorizations. *The American Statistician* 67, 207-218.

Webb D, Leahy MM, Milner JA, Allison DB, Dodd KW, Gaine PC, Matthews RAJ, Schneeman BO, Tucker KL, Young SS. (2013) Strategies to optimize the impact of nutritional surveys and epidemiological studies. Advances in Nutrition (Impact Factor: 3.2). 01/2013; 4(5):545-7.

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Young SS, Fogel P. (2014) Air pollution and daily deaths in California. Proceedings, 2014 Discovery Summit. https://community.jmp.com/docs/DOC-6691/

Lopiano KK, Obenchain RL, Young SS. (2014) Fair Treatment Comparisons in Observational Research. *Statistical Analysis and Data Mining* 7, 376–384.

Young SS. (2015) Where there is smoke, there are often mirrors. *BMJ 2014;348:g40* *http://www.bmj.com/content/348/bmj.g40/rr*

Young SS, Obenchain RL, Krstic G. (2015) Local Control Analysis of Radon and Ozone. Discovery Summit 2015. https://community.jmp.com/docs/DOC-7784

Lopiano KK, Smith RL, Young SS (2015) Air quality and acute deaths in California, 2000-2012. https://arxiv.org/abs/1502.03062

Fogel P, Gaston-Mathé Y, Fogel F, Luta G, Young SS. (2016) Applications of a Novel Clustering Approach Using Non-Negative Matrix Factorization to Environmental Research in Public Health. International Journal of Environmental Research and Public Health. 13,509 doi:10.3390/ijerph13050509.

Obenchain RL, Young SS. (2017) Local Control strategy: Simple analyses of air pollution data can reveal heterogeneity in longevity outcomes. Risk Analysis. Risk Anal. doi: 10.1111/risa.12749

Young SS. (2017) Air quality environmental epidemiology studies are unreliable. Regulatory Toxicology and Pharmacology 88, 177-180.

Young SS, Smith RL, Lopiano KK. (2017) Air quality and acute deaths in California, 2000-2012. Regulatory Toxicology and Pharmacology 88, 173-184.

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EDUCATION:

1984 Ph.D. Harvard University, Cambridge, MA
Thesis: Surrogate Measures of Human Cancer Risk
1977 S.M. Harvard University, Cambridge, MA
1976 B.S. Loyola University, Los Angeles, CA

PROFESSIONAL EXPERIENCE:

1991-present California Environmental Protection Agency
Office of Environmental Health Hazard Assessment
- Chief, Reproductive and Cancer Hazard Assessment Branch
(Oversees a variety of the California's risk assessment activities: for California's Proposition 65; development of frameworks and methodologies for risk, cumulative impact, nanotechnology assessment; green chemistry/safer chemical assessment; susceptible populations, including early life exposure to carcinogens; characterizations for toxicants in the environmental media, food, fuels and consumer products; oversees the department's biomonitoring activities; and develops regulatory guidance and Proposition 65 and green chemistry regulations)

1988-1991 California Department of Health Services
Reproductive and Cancer Hazard Assessment Section
- Acting Section Chief (1990-1991)
- Chief and Acting Chief, Cancer Unit (1989-1990)
- Staff (1988-1989)

1986-1988 California Public Health Foundation

1980-1986 Harvard University
- Postdoctoral Research Associate, Physics Department (1984-1986)
- Research Assistant, Energy and Environmental Policy Center (1981-1984)
- Teaching Fellow, Division of Applied Sciences (1980-1983)

1978-1980 U.S. Environmental Protection Agency, Washington, DC
Office of Water and Waste Management, Effluent Guidelines Division
- Environmental Scientist

SCIENCE ADVISORY COMMITTEES AND OTHER SERVICE:

Institute of Medicine/National Academy of Sciences
- Committee on Herbicide Exposure Assessment for Vietnam Veterans (1996-2003)
- Committee on Strategies to Protect the Health of Deployed U.S. Forces (1999-2000)
- Board on Health Promotion and Disease Prevention (2002-2005)
- Board on Population Health and Public Health Practice (2006)
- Committee on Evaluation of the VA's Presumptive Disability Decision-Making Process (2006-2007)
- Committee on Breast Cancer and the Environment (2008-present)

National Research Council/ National Academy of Sciences

- Committee on Risk Characterization (1994-1996)
- Committee on Comparative Toxicology of Naturally Occurring Carcinogens (1993-1996)
- Committee to Review the EPA's Maximum Contaminant Level Goal for Copper in Drinking Water (1999-2000)
- Committee on Toxicology (2000-2002)
- Committee on Air Quality Management in the United States (2001- 2004)
- Committee on Review of EPA's Research Grants Program (2001- 2003)
- Committee to Assess the Distribution and Administration of Potassium Iodide in the Event of a Nuclear Incident (2003)
- Board on Environmental Studies and Toxicology (2002-2008)
- Committee on Toxicity Testing and Assessment of Environmental Agents (2004-2008)
- Committee on Improving Risk Analysis Approaches Used by the US Environmental Protection Agency (2006-2008)
- Committee to Review EPA's Title 42 Hiring Authority for Highly Qualified Scientists and Engineers (2009-2010)
- Planning Committee for a Symposium on Toxicity-Pathway-Based Risk Assessment (2008-2009)
- Standing Committee on Use of Emerging Science for Environmental Health Decisions (2008-present)
- Committee on Incorporating Sustainability in the US Environmental Protection Agency (2010-2011)
- Committee on Sustainability Linkages in the Federal Government (2012)
- National Associate of the National Research Council, honor with lifetime membership

US Environmental Protection Agency (US EPA) Science Advisory Board

- Chartered Board, member (2003-2009)
- Committee for Science Integration for Decision-Making (2008-2012)
- Research Strategies Advisory Committee, Member (2000-2004)
- Environmental Health Committee, Member (1995-2000)
- Integrated Risk Project, Human Exposure and Health Subcommittee, Member (1996-1997)
- Clean Air Act Scientific Advisory Committee, Consultant (1992)
- Environmental Health Committee, Consultant (1994-1995)
- Environmental Engineering Committee, Consultant (1997, 2001-2002)
- Drinking Water Committee, Consultant (2001-2002)
- Acrylamide Review Panel (2007-2008)
- PCB Artificial Reef Risk Assessment Panel (2005)
- Air Toxics Research Strategy/Multiyear Plan Panel (2003-2004)
- Surface Impoundments Study Subcommittee, Environmental Engineering Committee (2001-2002)
- Chloroform Risk Assessment Review Subcommittee (1999)

US EPA FIFRA Science Advisory Panel (1999 - 2004)

US EPA Board of Scientific Counselors

- Risk Assessment Subcommittee of the Particulate Matter Subcommittee (1999)
- Human Health Risk Assessment Subcommittee, Member (2007-2010)

US EPA, Ad Hoc Advisory Committees, peer reviews and consulting

- Alpha-2U-Globulin: Association with Renal Toxicity and Neoplasia in the Male Rat (1990)
- Ad Hoc Expert Consensus Panel on NTP Testing Protocols (1992)
- 2,3,7,8-TCDD Dose Response (1997)
- Carcinogenic Effects of Benzene: An Update (1997)
- Risk Characterization Guidelines (1999)
- Planning and Scoping the Initial National Scale Assessment (2000)
- Drinking Water Health Advisory for Monochloroacetic acid (2005)
- Drinking Water Health Advisory for Dichloroacetic acid (2005)
- Drinking Water Health Advisory for N-Nitrosodimethylamine (2006; 2009)
- Exposure Factors Handbook on Aging (2007)
- Toxicological Review of Chlordecone (2008)
- Toxicological Review of 1,2,3-Trichloropropene (2008)

- Inhibition of the Sodium-Iodide Symporter by Perchlorate: An Evaluation of Lifestage Sensitivity Using Physiologically-based Pharmacokinetic (PBPK) Modeling (2008)
- Review of EPA's Supporting Analysis for Revisions of the Total Coliform Rule (2009-2010) (under the auspices of the EPA SAB)
- Draft Provisional Peer-Reviewed Toxicity Value manuscripts (via Eastern Research Group subcontract):
  - Benzene thiol (2010)
  - Oleic acid (2010)
  - Stearyl acetate (2010)
  - *o*-Toluidine (2010)
  - Tricaine methansulfonate (2010)
  - Guanidine nitrate
  - 3-Amino-4-chlorobenzotrifluoride
  - 2,3-benzofluorene (2011)
  - N-Nitrosodi-N-propylamine (2011)
  - NPYR (2011)
  - p-toluidine (2011)
- NexGen Risk Assessment (via ICF International contract) (2010-2012)

World Health Organization, International Agency for Research on Cancer (IARC)
- Advisor, Scientific Principles of Quantitative Estimation and Prediction of Carcinogenic Risks to Humans (1993-1998)
- Member, Advisory Group to Review the Amended Preamble to the IARC Monographs (2005-2006)
- Member, IARC/NORA (National Occupational Research Agenda) Expert Group on Identification of research needs to resolve the carcinogenicity of high priority IARC carcinogens (2008-2009)
- Member of advisory group on tumour site concordance and mechanisms of cancer (2011-2013)

World Health Organization, International Programme on Chemical Safety
- Member, Working Group on the Harmonization of Approaches to the Assessment of Risk from Exposure to Chemicals (2010-2011)

Consumer Product Safety Commission
- Chronic Hazards Advisory Panel on Diisononylphthalate

Office of Technology Assessment, United States Congress
- Advisory Panel on Risk Assessment Research (1992-1993)
- Advisory Panel on Technologies for Testing and Review of Chemicals in Commerce (1995-1996)

National Council on Radiation Protection and Measurements, consultant (2002)

National Toxicology Program
- Technical Reports Peer Review Subcommittee (1989-1993)
- Ad Hoc Working Group for the Review of the Criteria for Listing Substances in the Biennial Report on Carcinogen (BRC) (1995)
- Working Group to Review the Carcinogenic Potency Database (2004)
- Captafol and ortho-Nitrotoluene Expert Panel, Panel Chair, Report on Carcinogens (2007)
- Styrene Expert Panel, Report on Carcinogens (2008)

National Institute of Environmental Health Sciences
- Superfund Basic Research Program External Advisory Panel (2008)

Consortium for Risk Evaluation with Stakeholder Participation
Environmental and Occupational Health Sciences Institute
- Peer Review Committee (1995-Present)

University of California at Berkeley
- Member, External Advisory Board, Superfund Basic Research Program

- Member California Breast Cancer Research Program Advisory Panel on California Chemicals Policy and Breast Cancer (2008-2009)

Harvard University, School of Public Health, Harvard Center for Risk Analysis
- Member, Advisory Committee (1990-1993)

California Comparative Risk Project
- Chair, Human Health Committee (1992-1994)

International Life Sciences Institute (ILSI)/US EPA
- Working Group on Dose Selection for Chronic Toxicity Testing (1987)
- LSI/US EPA Cooperative Agreement, Ad Hoc Committee (1991)
- Working Group on Cancer Dose Response Modeling (1991-1992)
- Working Group on Cumulative Risk Assessment (1998-1999)

State of New York
Trichlomethylene Review panel (2005)

State of Minnesota, Department of Health
Health Risk Limits Expert Advisory Panel, Member (2005)

State of Arizona, Department of Environmental Quality
Human Health Effects Committee (1990)

Universite de Metz
Centre des Sciences de E'Environmente
Doctoral Thesis Committee: Frederic Bois
Thesis Topic: The use of mechanistic and pharmacokinetic models in risk assessment (1989)

International Program of Chemical Safety, World Health Organization
Faculty - Risk Assessment Seminar, University of London (1988-1989)

US Federal Trade Commission, Washington, DC, expert witness (1988)

SOCIETIES/JOURNALS:

Collegium Ramazzini, Fellow
Society of Risk Analysis
- Member
- Fellow
- Editor (1988-2008)
- Councilor (1998-2001)
- 2008 Outstanding Risk Practitioner Award

Society of Toxicology, Member
Journal of Human and Ecological Risk Assessment, Editorial Board (2005-2008)

REVIEWER OF GRANT PROPOSALS FOR:

National Toxicology Program
Institute of Medicine/National Academy of Sciences
US Environmental Protection Agency
US Department of Energy
American Chemistry Council
University of California Toxic Substances Teaching and Research Program
California Department of Health Services
California Environmental Protection Agency

BOOK CHAPTERS/BOOKS:

National Research Council. Sustainability and the US Environmental Protection Agency, Committee on Incorporating Sustainability in the US Environmental Protection Agency, National Academy Press, Washington DC, 2011 (coauthor).

Institute of Medicine. Breast Cancer and the Environment: A Life Course Approach, IOM Committee on Breast Cancer and the Environment, National Academy Press, Washington DC, 2011 (coauthor).

National Research Council (NRC). Science and Decisions: Advancing Risk Assessment. NRC Board on Environmental Studies and Toxicology. National Academy Press, 2009 (co-author)

Institute of Medicine (IOM). Improving the Presumptive Disability Decision-Making Process for Veterans. Committee on Evaluation of the VA's Presumptive Disability Decision-Making Process. IOM Board on Military and Veterans Health. National Academy Press, 2007 (coauthor)

National Research Council (NRC). *Toxicity Testing in the 21st Century: A Vision and a Strategy. Committee on Toxicity Testing and Assessment of Environmental Agents,* NRC Board on Environmental Studies and Toxicology. National Academy Press, 2007 (co-author)

National Research Council (NRC). Toxicity Testing for Assessment if Environmental Agents. Committee on Toxicity Testing and Assessment of Environmental Agents, NRC Board on Environmental Studies and Toxicology. National Academy Press, 2006 (co-author)

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MEETINGS: PRESENTATIONS/ABSTRACTS/PROCEEDINGS

B Goldstein and L Zeise, Presidential Roundtable on Sustainability and the US Environmental Protection Agency, the Green Book Report from the National Academy of Sciences, Society of Risk Analysis, Charleston, SC, December 5, 2011, invited.

A Hrisch and L Zeise, California's Green Chemistry Hazard Traits, Annual Statewide Environmental Summit, San Diego, November 9, 2011, invited.

L Zeise, Remarks on "The Next Generation of Human Health Risk Assessment and the Protection of Public Health"American Public Health Association, Washington DC, November 1, 2011, invited.

A Fan and L Zeise, California Public Health Goals for Chemicals in Drinking Water, 2011-2012, Annual Meeting of the Federal-State Toxicology Risk Analysis Committee, Helena, MT, October 5, 2011, invited

L Zeise, California's Green Chemistry Hazard Traits, Annual Meeting of the Federal-State Toxicology Risk Analysis Committee, Helena, MT, October 3, 2011, invited.

L Zeise, Early Childhood Exposure and Health Risks: Incorporating Sustainability, Institute of Medicine Roundtable, Woods Hole, Massachusetts, July 26, 2011, invited

L Zeise, T Woodruff, T Burke, Better Public Health Decisions about Chemicals: The Way Forward, Health Affairs, Washington DC, May 4, 2011, invited.

Workshop planning and panelist, Mixtures and Cumulative Risk Assessment: New Approaches Using the Latest Science and Thinking about Pathways, National Research Council's Emerging Science for Environmental Health Decisions Workshops, Washington DC, July 27-28, 2011.

Workshop planning and session chair, Applying 21st Century Toxicology to Green Chemical and Material Design, National Research Council's Emerging Science for Environmental Health Decisions Workshops, Washington DC, September 20-21, 2011

GV Alexeeff, J Faust, LM August, L Zeise, Preliminary screening evaluation of cumulative impacts, Society of Toxicology Annual Meeting, Washington, DC, March, 2011

L Zeise, G Ginsberg, MS Sandy, Low dose response relationships for non-cancer endpoints: ozone, mercury and xenoestrogens, Society of Toxicology Annual Meeting, Washington, DC, March, 2011

DW Morry, RS Tomar, FC Tsai, MS Sandy, L Zeise, Hazard identification utilizing structure activity relationships for 1,3-dichloropropanol and 3-monochloropropane-1,2-diol, Society of Toxicology Annual Meeting, Washington, DC, March, 2011

F Parham, A Wise, DA Axelrad, KZ Guyton, CJ Portier, L Zeise, RT Zoeller, TJ Woodruff, Integrating human and toxicological evidence to understand PCB effects on the developing brain, Society of Toxicology Annual Meeting, Washington, DC, March, 2011

L Zeise, Addressing Risks of Drinking Water: Insights from the NRC *Science and Decisions Report*
Symposium: Contaminants in Drinking Water, Risk Assessment Challenge Ahead, Society of Risk Assessment Annual Meeting, Salt Lake City, December, 2010, invited

Session Moderator, Workshop, Advancing the Next Generation (NexGen) of Risk Assessment, U.S. Environmental Protection Agency, Research Triangle Park, November 2010

Workshop Organizer and Session Moderator, In Utero and Post-Natal Indicators to Predict Public Health Outcomes Later in Life, Institute of Medicine, Washington DC, October 2010

L Zeise, Improvements proposed in the US National Academy of Sciences report Science and Decisions: Advancing Risk Assessment, European Environment Agency Workshop: Prudent Precaution? Experiences with the Precautionary Principle 2000-2010, Copenhagen, September 2010, invited.

L Zeise, Improvements for risk assessment in NAS' Science and Decisions, French Agency for Food, Environmnental and Occupational Safety and Health, Paris, September 2010, invited

L Zeise, Acrylamide – Update on California Activities, Toxicology Forum, Aspen, July 2010, invited

L Zeise, Some Data Interpretation Challenges and Opportunities, Implementing the NAS Vision for Toxicity Testing in the 21st Century, Creating a Roadmap to Implement the NRC Vision and Strategy, National Press Club, Washington DC, June 21, 2010, invtied

Session Moderator and Workshop organizer, California's Green Chemistry Workshop, Indicators of Ecotoxicity Hazards and Exposure Potential, University of California and California Environmental Protection Agency, Berkeley, May 10-11, 2010

L Zeise, G Ginsberg and MS Sandy, Linearity and Nonlinearity in Individual and Population Dose Response Relationships, Society of Toxicology Annual Meeting, Abstract #38, Salt Lake City, March 2010, invited

L Zeise, AD Kyle, J Faust, GV Alexeeff, Advancing Cumulative Risk Assessment and Impact Evaluation, Abstract #566, Society of Toxicology Annual Meeting, Salt Lake City, March 2010, invited

L Zeise and M Sandy, Potency Distributions for Age Sensitivity Factors Inform Life Stage Adjustments, in session Life Stage Adjustment Five Years Later, Experiences from the Cancer Risk Assessment Field. Abstract #1721, Society of Toxicology Annual Meeting, Salt Lake City, March 2010, invited

G Alexeeff, J Faust, L Meehan, L Zeise, A Method for Calculating Cumulative Impact, Society of Toxicology Annual Meeting, Salt Lake City, March 2010.

E Chan, S Dairkee, S Janssen, J Latimer, RA Rudel, M Schwarzman, A Wlassowsky, L Zeise and DE Johnson, Chemical Exposure and Breast Cancer: Identifying Compounds of Concern, Abstract #1999, Society of Toxicology Annual Meeting, Salt Lake City, March 2010.

Session Moderator and Workshop organizer, California's Green Chemistry, Human Health Indicators Workshop, University of California and California Environmental Protection Agency, Berkeley, March 15-16, 2010

L Zeise, Identifying Potential Breast Carcinogens: Findings of the Breast Cancer and Chemicals Policy Project, American Academy for the Advancement of Science, 2010 Annual Meeting, February 2010.

L Zeise, Musings on Implementing the NRC Unified Framework in Dose Response Assessment. Society of Risk Analysis Annual Meeting, Baltimore, December 2009, invited

Alexeeff G, Dunn AJ, Hoover S, Faust J, Zeise L, California's Move from Public Comment to Stakeholder Involvement, Society of Risk Analysis Annual Meeting, Baltimore, December 2009

L Zeise, Findings from Recent NRC Reports, University of California San Francisco Thyroid Symposium, November, 2009, invited

L Zeise, Overview of the National Academies' Toxicity Testing in the 21st Century: A Vision and Strategy, at the symposium Science, Ethics and Law of Animal Testing in the 21st Century: Are We on the Verge of a Paradigm Shift? Lewis and Clark Law School, Portland, September 2009, invited.

Session moderator, Application to Mode of Action Analysis, at Toxicity Pathway Based Risk Assessment: Preparing for the Paradigm Change, National Research Council, Washington DC, May 2009.

L Zeise, Risk Assessment and Toxicity Testing: Visions and Advances, University of California Los Angeles, EHS 257, Risk Assessment and Standard Setting, April 23, 2009

L Zeise, NAS Science and Decisions Report: Implications for Toxic Reductions Benefits Assessment, EPA Workshop on Estimating the Benefits of Reducing Hazardous Air Pollutants, Washington DC, April 20, 2009, invited

GV Alexeeff, J Faust, A Kyle, R Morello-Frosh, M Jerrett and L Zeise. Assessing the Cumulative Impacts of Chemical Emissions and Discharges, Abstract #1465, Society of Toxicology 2009 Annual Meeting, Baltimore, March 2009.

L Zeise, Panelist, Characterizing the Risks of Low Doses of Pharmaceuticals in Drinking Water, Are New Risk Assessment Methods or Approaches Required? National Research Council, Washington DC, December 2008, invited

L Zeise, Metal-Metal Interactions, U.S. Pharmacopeia's Heavy Metals Testing Methodologies Workshop, Institute of Medicine, Washington DC, August 2008, invited.

L Zeise, Use of Mode of Action Information in Risk Assessment in California. Toxicology Forum, Aspen, July, 2008, invited.

L Zeise, A California Mode of Action Workshop: Characterizing Dose Response and Hazard
May 2008, convener and organizer.

L Zeise, Developing and validating methods for faster, cheaper, better characterization of hazard traits: Perspective of the National Academies Committee on Toxicity Testing and Assessment of Environmental Agents, Strategies to Advance Science and Policy for the Environment and Health. Berkeley, May 2008, invited

L Zeise, Hazard-Based Classification Systems and Product Substitution. Roundtable, Hazard vs. Risk for Chemical Regulation. Society of Toxicology, Seattle, March 2008, Roundtable, Abstract #1326, invited.

L Zeise, Phasing out animal testing as new test strategies develop, Roundtable Reconciling Scientific and Ethical Concerns in the Use of Animals for Toxicological Research, Society of Toxicology, Seattle, March 2008, Abstract #1326, invited.

P Iyer, JM Donald, L Zeise, MS Golub, A review of the role of peroxisome proliferators a mediators of environmental toxicants during development, Society of Toxicology, Seattle, March 2008, Abstract #935.

L Zeise, Possible frameworks for cancer and non-cancer low dose risk prediction, Symposium - New Approaches to Old Problems: Low Dose Response Extrapolation in Environmental Health Risk Assessment Society of Risk Analysis, Annual Meeting, San Antonio, December 2007. invited.

L Zeise, The Future of Toxicity Testing: Findings of the NRC Committee on Toxicity Testing and Assessment of Environmental Agents. Practical Decision-Making Tools for Identifying Safer Alternatives. Sacramento, October 2007, invited.

L Zeise, Uncertainty associated with sources of human variation, National Research Council Workshop: Quantitative Approaches to Characterizing Uncertainty in Human Cancer Risk Assessment
Based on Bioassay Results, Workshop of the Standing Committee on Risk Analysis Issues and Reviews, National Academy of Sciences, June 5, 2007. invited.

L Zeise, Quantitative assessment of cumulative impacts: Challenges and progress, CAPCOA Symposium: Health Impact of Air Pollution on Communities, Carson, CA, September 19-20, 2007. invited.

L Zeise, California's assessment of early in life exposure on carcinogenic potency, SOT Rountable presentation, Society of Toxicology Annual Meeting, San Diego, CA, 2006.

RS Tomar, MS Sandy. CD Sherman, L Zeise. Meta-analysis of cancer potency estimates following prenatal, postnatal versus juvenile exposure to the direct acting ethylnitrosourea. Society of Toxicology Annual Meeting, San Diego, 2006.

L Zeise, GV Alexeeff, J Beaumont, M Campbell, J Donald, A Dunn, J Faust, M Golub, SM Hoover, P Iyer, F Kaufman, G Krowech, L-H Li, J Morgan, MS Sandy, CD Sherman, RS Tomar, Hazard, Exposure and Dose Response Assessment under California's Proposition 65: 2006 Update, Society of Toxicology Annual Meeting, San Diego, 2006.

MS Sandy, CD Sherman, RS Tomar, L Zeise, Chemical-dependent variability in early life sensitivity to carcinogens. Society of Toxicology Annual Meeting, San Diego, CA 2006.

JB Faust, MS Sandy, L Zeise, GV Alexeeff, Considering the potential cumulative impacts of pollutants in diverse geographic areas of California, Society of Toxicology Annual Meeting, San Diego, CA 2006

C Sherman, T McDonald, M Sandy, R Tomar, L Zeise, A Method for assessing susceptibility from early-life exposure to carcinogens. Society of Risk Analysis, Annual Meeting, Orlando, 2005.

M Sandy, R Tomar, L Zeise, Criteria for evaluating carcinogens likey to have a greater impact from exposures that occur early in life. Society of Risk Analysis, Annual Meeting, Orlando, 2005.

M Sandy, L Zeise, GV Alexeeff, Proposition 65 responses to acrylamide in food Society of Risk Analysis, Annual Meeting, Orlando, 2005.

S Hoover, JP Brown, AG Salmon, MS Sandy, L Zeise, M Marty, Cancer risk estimation for exposure to naphthalene. Society of Toxicology Annual Meeting, New Orleans, March 2005.

M Sandy, T McDonald, L Zeise, Cancer potency estimation for acrylamide, Society of Toxicology Annual Meeting, New Orleans, March, 2005. Abstract #396

L Zeise, Considerations for Improving High to Low Dose Extrapolation, Environmental Protection Agency Board of Scientific Counselors Risk Assessment Workshop, Washington DC, February, 2005, invited.

T Woodruff, L Zeise, EPA and other methods for non-cancer dose response. Representations of dose Response Relationships for Chemicals Associated with Non-Cancer Effects and Their Policy Implications, Oakland, 2005.

L Zeise, G Alexeeff, J Beaumont, M Campbell, J Donald, A Dunn, J Faust, M Golub, S Hoover, P Iyer, F Kaufman, G Krowech, L Li, S Luong, T McDonald, J Morgan, C Oshita, M Sandy, C Sherman, R Tomar, Risk Assessment under California's Proposition 65, Annual meeting of the Society of Risk Analysis, Palm Springs, CA, December 5-8, 2004.

RS Tomar, TA McDonald, CD Sherman, MS Sandy, L Zeise, Quantitative Estimates of Early Life Sensitivity to the Direct-Acting Ethylnitrosourea and Indirectly Acting Diethylnitrosamine, Annual meeting of the Society of Risk Analysis, Palm Springs, CA, December 5-8, 2004.

J Faust, L Zeise, A Reassessment of the Carcinogenic Potency of 2,3,7,8-Tetrachlorodibenzo-p-dioxin, Annual meeting of the Society of Risk Analysis, Palm Springs, CA, December 5-8, 2004.

M Sandy, L Zeise, Estimation of the Cancer Risk for Mixtures of PCBs Found in Fish, Annual meeting of the Society of Risk Analysis, Palm Springs, CA, December 5-8, 2004.

"California's Proposition 65 List," at Meeting of Expert Committee, Commission for Environmental Cooperation, November 18, 2004, Montreal, Quebec. (invited)

Ten Statistical/Quantitative Issues for Improved Environmental Regulation of Chemicals, at "Statistics and the Environment: Future Directions and Emerging Issues," at the National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina, April 29, 2004 (invited).

Use of Science in Environmental Regulation, University of California Riverside, February 28, 2003. (invited)

Discussant, EPA's Trichloroethylene Assessment, Toxicology Forum, Summer meeting, Aspen, CO, July 17, 2003 (invited)

MacGregor MK, McDonald TA, Schlag R, Tomar R, Yaghoubie S, Sherman CD, Sandy MS, Zeise L, Development of a database for quantitative modeling of age-related carcinogenicity studies. *The Toxicologist* **62**:83, #401, 2003.

Faust JB, Salmon AG, Sherman CD, Sandy MS, Zeise L, Estimation of the carcinogenic potential of polycyclic aromatic hydrocarbons. *The Toxicologist* **62**:141-142, #686, 2003.

McDonald TA, Hoover SM, Faust JB, Rabovsky J, MacGregor MK, Sherman CD, Sandy MS, Zeise L, Development of cancer potency estimates for California's Proposition 65. *The Toxicologist* **62**:142, #687, 2003.

Arcus-Arth A; Krowech G, and Zeise LA. Breast Milk Lipid Intakes: Distributions and Comparison of Two Methodologies [Abstract]. International Society of Exposure Analysis and Environmental Epidemiology Annual Meeting, 2001.

Faust JB, Sandy MS, Zeise L (2001) Estimation of the carcinogenic potential of lead and lead compounds. *The Toxicologist* **60**:437, #2079.

Panelist, "Colloquium on Approaches to Quantifying Health Risks for Threshold or Nonlinear Effects at Low Dose," US Environmental Protection Agency colloquium, Washington DC, September 28, 2000.

Panelist, "Advanced Methods for Dose Response Assessment: Bayesian Approaches," workshop sponsored by Society for Risk Analysis and Resources for the Future, Washington DC, September 18-20, 2000.

Session chair, "Future Research for Improving Risk Assessment Methods - Of Mice, Men and Models - Dose Response Modeling," Snowmass, Colorado, August 16-18, 2000

Panelist/Discussant, "Workshop on the Benefits of Reductions in the Exposure to Hazardous Air Pollutants: Developing Best Estimates of Dose Response Functions," US EPA and the Science Advisory Board public workshop, Washington, D.C., June 22-23, 2000

"Harmonization of Cancer and Non-Cancer Risk Assessment," Dose-response workgroup participant, Society of Toxicology, Contemporary Concepts in Toxicology series, Arlington, Virginia, November 1-3, 1999. (invited)

"Perspectives from *Understanding Risk*" and workshop facilitator on stakeholder issues at US EPA Science Policy Council Workshop "Planning and Scoping for Cumulative Risk Assessment," Washington, DC, June 16-18, 1999. (invited)

P Botham, J Chambers, E Kenyon, HB Matthews, L Sultatos, C Van Pelt, L Zeise, E Faustman, B Mileson, "Report of the Toxicology Breakout Group." In: B Mileson, E Faustman, S Olin, PB Ryan, S Ferenc, T Burke, *A Framework for Cumulative Risk Assessment, An ILSI Risk Science Institute Workshop Report,* International Life Sciences Institute, ILSI Press, 1999.

"Policy choices expressed in EPA's proposed cancer risk assessment guidelines," at Risk Assessment and Policy Association, Second Biennial Meeting, March 26, 1999, Alexandria, Virginia. (invited)

"Practice and use of risk assessment in public health decision-making" at workshop "Health risks in pluralistic democraties: assessment, perception and management. Which lines of research should be pursued?" Paris, December 1, 1998. (invited)

"Future research to improve benzene risk assessment and risk management, California EPA perspective." Benzene State of the Science Workshop, University of Ottawa, Institute of Population Health, December 17, 1998. (invited)

Sandy MS, Painter PA, Salmon AG, Rabovsky J, Zeise L (1998) Hazard Identification in the face of limited mechanistic data: 5-chloro-*o*-toluidine, 2,4,5-trimethylaniline, and quinoline. *The Toxicologist* **42**:59, #290.

"Proposition 65 Advances," Forum of State and Tribal Toxics Action meeting, US EPA Washington, DC, March, 1998. (invited)

"Prop 65 Science Second Decade" February 20, 1998, at Prop 65 News Conference. "Prop 65: Going National or Going Away?" San Francisco, CA. (invited)

Coauthor “Environment and Human Exposure Assessment” in “State of the Science White Paper in Support of the Chemical Industries Long Range Research Initiative”. Proceedings/white papers published January 1998. Consensus meeting: Research Triangle Park, NC, Chemical Industry Institute of Toxicology, November, 1997. (invited)

“Risk Assessment”, October 24, 1997 course lecture, “Occupational and Environmental Medicine IV,” San Francisco, CA/ (invited)

“Statistical Issues in Hazard Identification and Dose Response Assessment,” August 13, 1997, Joint Statistical Meetings, Anaheim, CA. (invited)

“Health Effects of Environmental Tobacco Smoke”, September 15, 1997, California Coalitions, Oakland, CA. (invited)

“Health Risks of Exposure to Environmental Tobacco Smoke,” October 8, 1997, at Health Risk Assessment: Current issues, 10th Annual Symposium, International Society for Risk Analysis, Monterey, CA. (invited)

TA McDonald, L Zeise, D Ting, LA Wisniewski and RA Becker, “A Comprehensive review of California’s Risk Assessment Practices: Findings and Recommendations of The Risk Assessment Advisory Committee.” *The Toxicologist* **36**:166, 1997.

D Ting, TA McDonald, R Becker and L Zeise, “Consistencies and Inconsistencies Between Cal/EPA and US EPA Toxicity Values.” *The Toxicologist* **36**:166, 1997.

L Zeise, D Ting and TA McDonald, “Potential Impact of Proposed US EPA Default Procedures On Carcinogen Dose-Response Evaluations In California”. *The Toxicologist* **36**:166, 1997.

“Scientific Criteria for Establishing NSRLs and NOELs by The Expedited Methodology” presented at the Round Table Discussion “Proposition 65: What’s Happening to the Science? March 12, 1996, Society of Toxicology Annual Meeting, Anaheim, CA. (invited)

AG Salmon, M Sandy, L Zeise, “Categorial versus narrative carcinogen classification systems”. Society of Toxicology Annual Meeting, Anaheim, CA. *Toxicologist* **30**:3. 1996.

Workshop organizing committee: "Molecular Biology of Leukemia and Implications for Risk Assessment”. February 11-13, 1996, Yountville, CA

L Lee, S Hoover, E Shockett, L Tascheck, M Sandy, J Donald, J Morgan, L Zeise, “Development of a tracking database for candidate agents under Proposition 65”. Society of Toxicology Annual Meeting, Anaheim, CA. *Toxicologist **30**:151,* 1996

JP Brown, AG Salmon, RA Howd, F Bois, L Zeise, “Use of pharmacokinetic modeling in cancer risk assessment for regulatory purposes,” SOT 1996 annual meeting, *Toxicologist* **30**:114.

Session Chair and workshop organizer. “The Netherlands Approach to the Management of Major Hazard Industries” and “A Risk Based Approach to the Protection of River Systems” at International Case Studies in Risk Assessment and Management, Hibernia Society Hall, Charleston, SC. March 5, 1996.

Congressional staff briefing on the NAS report “Carcinogens and Anticarcinogens in the Human Diet, February 15, 1996, The Capitol, Washington, DC. (invited)

“Problems with establishing exposure levels of synthetic chemicals in the food supply.” In workshop “Naturally Occurring Carcinogens and Anticarcinogens in the Diet”. Oegstgeest, Netherlands, December 3-5, 1995. (invited)

Workshop organizer. “Critical Issues in Assessing Ecological Risk”. January 23-25, 1995. Held at Asilomar conference Center. Monterey, CA.

Analyzing Risk: Science, Assessment and Management. Harvard School of Public Health Short Course. September 26-29, 1995. Boston, MA. (invited)

Workshop organizer. “Guidelines for Ecotoxicological Risk Assessment” March 29-31, 1995. University of California, Davis.

Workshop organizer. “Case Studies in Ecotoxicological Risk Assessment” June 6-8, 1995. Irvine, CA.

Discussant in Screening/Priority Setting Workgroup, National Toxicology Program Workshop Mechanism - Bases Toxicology in Cancer Risk Assessment: Implications for Research, Regulation and Legislation, January 11-13, 1995, Chapel Hill, North Carolina. (invited)

Workshop organizer. "Workshop on Issues on Assessing the No Significant Risks Levels of Saccharin and Sodium Saccharin," April 14-16, 1994, San Francisco.

"Cancer Risks from Childhood Environmental Exposures" presented at the Children's Environmental Health Network in Washington, DC, March 1994. (invited)

Commentary "Special Concerns Regarding Exposures to Aflatoxins" presented at the special symposium "Mycotoxin Health Risk, Control Regulation" at the Winter meeting of the Toxicology Forum, Washington, DC, February 1994. (invited)

"Carcinogen Classification and Standard Potency Assessment" at the Harvard School of Public Health, short course "Risk: Science, Assessment and Management," Harvard University, Boston, MA September 1993. (invited)

"The Use of Mechanistic Data in Risk Assessment: Limitations" presented at Annual Meeting of the Society of Toxicology, New Orleans, March 15, 1993, *Toxicologist* **31**(1):3. (invited)

Organizer, "Key Issues in Carcinogen Risk Assessment Guidelines," Society of Risk Analysis. December 4, 1992 San Diego, CA.

Workshop organizer. "Toxicology and Regulatory Law,") University of California Toxic Substances Teaching Program, November 1-3, 1992, Pacific Grove, CA

"Comparing Chemical Risks" at ECO WORLD '92, American Society of Mechanical Engineers, Washington, DC, June 1992. (invited)

Workshop organizer. "The Health Effects of Environmental Tobacco Smoke" October 13-14, 1992, Oakland, CA.

Workshop organizer. "Safety Assessment for Non-Cancer Endpoints: The Benchmark Dose and Other Possible Approaches" May 11-12, 1992, Tiburon, CA.

"Assessment of Occupational Cancer Risks" at "Occupational Health Risk Assessment: Directions for the '90s," Harvard University School of Public Health, Boston, MA, May 1992. (invited)

"Carcinogenic and Reproductive Risk Assessment Under the California Proposition 65 Statute," American Chemical Society Annual Meeting, San Francisco, CA, April 1992. (invited)

Workshop organizer. “Use of epidemiological data in cancer risk assessment” Berkeley, June, 1991

"Expedited Procedures for Establishing Carcinogenic Potency for Regulatory Purposes," Society for Risk Analysis Annual Meeting, Baltimore, MD, December 1991.

"Aflatoxin Exposure and Risk from Peanut Butter Consumption," Society for Risk Analysis Annual Meeting, Baltimore, MD, December 1991.

"Risk Characterization of Gasoline," International Symposium on Health Effects of Gasoline, Miami, FL, November 1991. (invited)

Invited Participant, Hazardous Air Pollutants Prioritization Panel, Clean Air Scientific Advisory Committee, Science Advisory Board, Washington, DC, October 1991.

"Risk Assessment in Cal-EPA," Cal-EPA Conference, Sacramento, CA, September 1991. (invited)

"On Linear Extrapolation," EPA/ILSI Symposium on Linear Extrapolation, Herndon, VA, September 1991. (invited)

"Consideration of Mechanistic Data in Proposition 65 Risk Assessments," Toxicology Forum, *Proceedings of the Annual Summer Meeting*, Aspen, CO, July 1991. (invited)

Book Review of "Harnessing Science for Environmental Regulation," at the 2nd Annual Meeting of the Ad Hoc Planning Committee for Harvard Center for Risk Analysis, Boston, MA, June 1991. (invited)

"Comments on the Relationship between Toxicity and Carcinogenicity," presented at the Workshop on Maximum Tolerated Dose: Implications for Risk Assessment, National Academy of Sciences, Committee on Risk Assessment Methodology, September 1990. (invited)

"Risk Estimates for Pesticide Exposure," presented at Agricultural Chemical Utilization and Human Health, National Institute of Environmental Health Sciences, July 12-13, 1990. (invited)

"Cancer Dose Response Modeling," extension school lecture on Health and Environmental Effects of Hazardous Materials, University of California at Berkeley, May 1990. (invited)

"Regulatory Update: California's Proposition 65," *The Toxicology Forum, Proceedings of the Annual Winter Meeting*, Washington DC, February 19-21, 1990. (invited)

"Cancer Risk Assessment Methodology," presented at the World Health Organization International Program on Chemical Safety, Risk Assessment Seminar, London, February 21, 1990. (invited)

Workshop organizer. "Chemical Risks in the 1990's: Effective Action in California" Pacific Grove, CA, January 7-9, 1990.

"Computer Modeling of Risk Assessment," Annual Meeting of the British Toxicology Society, Newcastle University, September 20-22, 1990. (invited)

"Preparations for Workgroups," at conference "Chemical Risks in the 1990's: Effective Action in California," Pacific Grove, California, January 7-9, 1990.

"Issues in State Risk Assessment: California Department of Health Services." In: JE White (Ed) *Proceedings - Pesticides and Other Toxics: Assessing Their Risk*, (Meeting Proceedings) University of California at Riverside, June 17, 1989, pp 135-144. (invited)

"Quantitative Risk Assessment Methodology," presented at the World Health Organization International Program on Chemical Safety, Risk Assessment Seminar, London, February 21, 1989. (invited)

"Regulatory Risk Assessment in the United States," presented at the United Kingdom Department of Health and Social Security, Hannibal House, Elephant and Castle, London, February 24, 1989. (invited)

"Pharmacokinetics, Placental Permeability and Teratogenic Potential of Selenium in Hamsters," *Pharmacologist*, 31(3):138, American Society of Pharmaceutics and Environmental Toxicology, Annual Meeting in Salt Lake City, August 1989, with CC Willhite, VH Ferm, DP Hanlon.

"Regulatory Risk Assessment Under California's Proposition 65," American Association for the Advancement of Sciences Annual Meeting, San Francisco, January 1989. (invited)

"Pesticide Dose Response Relationships," *Agronomy Abstracts*, p 48, 1990; presented at the Annual Meeting of the American Society of Agronomy, October 1989, with CC Willhite.

"Alar in Fruit: Actions in the Face of Uncertain Risks," Annual Meeting of the Society for Risk Analysis, October 1989, with P Painter, PE Berteau, AM Fan, JB Knaak, RJ Jackson.

"A Detailed Assessment of the Carcinogenic Potency of Aflatoxin B1," Annual Meeting of the Society for Risk Analysis, October 1989, with WN Choy, A Wu, T McDonald, A Dunn.

"Consistent Estimates of Urethane Carcinogenic Potency Using Pharmacokinetic and Time Dependent Models," Annual Meeting of the Society for Risk Analysis, October 1989, with AG Salmon, P Painter, D Landy.

Lecture on risk assessment methodology, University of California, Davis Extension, Hazardous Materials Management Program, April 1988; March 1989.

Workshop organizer. "Mechanisms of Carcinogenic and Reproductive Toxicity: Implications for Public Health," Pacific Grove, California, March 22-25, 1988.

"Regulatory Risk Assessment," Sixth Annual Institute in Risk Management and Environmental Health and Protection, University of Southern California, November 29 - December 2, 1988.

"Dietary Hazard Assessment for Infants and Children," *Toxicologist*, 8:95, 1988, presented at Society of Toxicology, 1988 Annual Meeting, with J Bankowska and RJ Jackson.

"Precision and Accuracy of Physiologically - Based Pharmacokinetic Models in Regulatory Risk Assessments," *Toxicologist*, 8, 1025, 1988, presented at The 27th Annual Meeting of the Society of Toxicology, F Bois and TN Tozer, 1988.

Workshop organizer. “Mechanisms of Carcinogenic and Reproductive Toxicity: Implications for Public Health," March 22-25, 1988, Pacific Grove, CA.

"Evaluation of Methods for Quantitative Risk Assessment of Non-Cancer Effects of Air Contaminants," Society of Risk Analysis, Fall 1988 meeting, with DC Lewis and G Alexeeff.

"Chromium Carcinogenicity: California Strategies," with G Alexeeff, K Satin, P Painter, C Popejoy and G Murchinson, Washington, DC, April 1988.

"California's Proposition 65," presented at the National Toxicology Program, Research Triangle Park, December 1987. (invited)

"Determination of No Significant Risk," Workshop Proceedings, Determination of No Significant Risk under Proposition 65, University of California at Davis December 1987.

"The Use of Pharmacokinetic Models in the Determination of Risk for Regulatory Purposes," presented at the Society for Risk Analysis annual meeting, November 1987, with F Bois and TN Tozer, 1987.

"Health Risks of Drinking Water," presented at the 16th Biennial Conference on Groundwater, Sacramento, September 1987.

"Uncertain Health Risk Estimates," presented at the annual meeting of the American Geophysical Union in San Francisco, December 1984, with R Wilson and MB Fiering.

"On the Relationship between Carcinogenicity and Acute Toxicity," presented at the Society of Risk Analysis Annual Conference, Boston, November 1986, with EAC Crouch, R Wilson, and B Metzger.

"Variability of Cancer Potency and Associated Risk Estimates," presented at the Annual Meeting of the American Geophysical Union in San Francisco, December 1986.

"Reconciling the Results of Carcinogenesis Bioassays with Benzo(a)pyrene for the Purpose of Risk Assessment," presented at the annual meeting of the Society of Environmental Toxicology and Chemistry in Arlington, VA, November 1983.

REPORTS:

Reproductive and Cancer Hazard Assessment Section/Branch, Cal/EPA Office of Environmental Health Hazard Assessment Reports: Co-author of roughly 250 reports, 1989-present.

US Environmental Protection Agency, Science Advisory Board (SAB): Co-author of numerous reports.

Cumulative Impacts, Building a Science Foundation, California Environmental Protection Agency, 2010.

Contributor to: Pathways to Breast Cancer: A Case Study for Innovation in Chemical Safety Evaluation.
A report of the Breast Cancer and Chemicals Policy Project, produced by the University of California, Berkeley and the Natural Resources Defense Council, with funding from the California Breast Cancer Research Program, University of California Office of the President, 2010

A Collaboration Project between International Agency for Research on Cancer (IARC) and National Occupational Research Agenda (NORA). IARC Technical Publication No. 42.
Identification of research needs to resolve the carcinogenicity of high priority IARC carcinogens, Views and Expert opinions of an IARC/NORA expert group meeting, Lyon, France: 30 June – 2 July 2009

White, R., Cote, I., Zeise, L., Fox, M., Dominici, F., Burke, T., White, P., Hattis, D., Samet, J. State-of-the-Science Workshop Report: Issues and Approaches in Low Dose–Response Extrapolation for Environmental Health Risk Assessment. Johns Hopkins, December 2007

Harvard University Energy and Environmental Policy Center Reports:

> M Tancrede, R Wilson L Zeise, and EAC Crouch. The Carcinogenic Risks of Indoor Air: A Survey, Harvard University Energy and Environmental Policy Center, Discussion Paper Series Number E-86-06, June 1986.
>
> L Zeise and EAC Crouch. *Experimental Variation in the Carcinogenic Potency of Benzo(a)pyrene,* Harvard University Energy and Environmental Policy Center, 1984.
>
> EAC Crouch, *et al*. *Health and Environmental Effects Document: Non-Regulatory and Cost Effective Control of Carcinogenic Hazard*, report for the Dept. of Energy, Health and Assessment Div., Office of Energy Research, prepared at the Energy and Environmental Policy Center, Harvard University, September, 1982.

Draft Development Document for the Electrical and Electronics Point Source Category, Publication Number EPA 440/1-80/075a, Effluent Guidelines Division, Office of Water and Waste Management,
U.S. Environmental Protection Agency, Washington, DC, 1980, 673 pp. (coauthor).

REGULATIONS:

Coauthor of approximately 300 safe harbor regulations (maximum allowable daily dose levels for reproductive and developmental toxicants, no significant risk levels for carcinogens), and other administrative regulations for implementation of California's Safe Drinking Water and Toxic Enforcement Act of 1986 (Title 27, California Code of Regulations), 1987-present.

Coauthor of California's Green Chemistry Hazard Traits regulation, (Title 22, California Code of Regulations, sections 69401 through 69407), 2011.

CURRICULUM VITAE

CHEN ZHU
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and Adjunct Professor of Public and Environmental Affairs
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EDUCATION

Ph. D., Johns Hopkins University, Aqueous Geochemistry, 1992
M. Sc., University of Toronto, Economic Geology/Geochemistry, 1987
B. Eng., Chengdu Institute of Geology, Geology (with honors), 1982

Post-doctoral Fellowship, Woods Hole Oceanographic Institution, 1991-92

HONORS AND AWARDS

- Distinguished Scientist Visitor, Ben-Gurion University of the Negev, Israel, 2011
- Fulbright Scholarship, Norway, 2009
- The John Hem Excellence in Science and Engineering Award, National Ground Water Association, 2006
- Lilly Freshman Learning Project Fellow (teaching), Indiana University, 2006 -
- Fellow, Geological Society of America, 2005 -
- Guest Professorship, Swiss Federal Institute of Technology (ETH)-Zurich, Switzerland, 2004, 2008
- Senior Associateship Award, National Research Council of the National Academies, 2002-03
- Post-doctoral Fellowship, Woods Hole Oceanographic Institution, 1991 - 1992
- Gilman Fellowship, The Johns Hopkins University, 1987 - 1990
- J. Brian Eby Fellowship, The Johns Hopkins University, 1987 - 88
- Waters Fellowship, The Johns Hopkins University, 1987 - 89
- Bauernschmidt Fellowship, The Johns Hopkins University, 1987 - 89
- H. V. Ellsworth Prize in Mineralogy, University of Toronto, 1985 - 87

RECENT PROFESSIONAL ACTIVITIES

Associate Editor, *Geochimica et Cosmochimica Acta*, 2005-
Associate Editor, *Journal of Contaminant Hydrology*, 2002-2006; 2008-
Associate Editor, *Ground Water*, 2003-2005

Co-chair Theme 21 "Hydrogeochemistry and global water sustainability", Goldschmidt Conference – the Annual Meeting of the Geochemical Society and European Association of Geochemists, August 14 – 19, 2011, Prague, Czech Republic.

Chair, Pardee Keynote Symposium "Global Water Sustainability", Annual meeting of the Geological Society of America, October 9 -12, 2011 Minneapolis – St. Paul, Minnesota, USA.

Co-editor, June 2011, v.7(3) issue of the *Elements* Magazine "Global Water Sustainability".

PROFESSIONAL POSITIONS

Jan. 1, 2004 –	Associate, full Professor of Geological Sciences, Indiana University – Bloomington
07/08-12/08	Guest Professor, Swiss Federal Institute of Technology (ETH)-Zurich, Switzerland
01/08-06/08	Visiting Associate Professor, Univ. of California – Berkeley
06/05-06/05	Visiting Professor, Institute for Study of the Earth's Interior at Misasa, Japan
02/04-08/04	Guest Professor, Swiss Federal Institute of Technology (ETH)-Zurich, Switzerland
2000-2003	Assistant Professor of Geology and Planetary Science, University of Pittsburgh
1998-2000	Assistant Professor of Ocean, Earth, and Atmospheric Sciences, Old Dominion University
1994-1998	Senior Geochemist, GeoTrans, Inc.
1993-1994	Senior Environmental Geochemist, OLI Systems, Inc.

RESEARCH INTERESTS

Chemistry of water, and water's reactions with rocks and minerals (water-rock interactions). CO_2-water-mineral/rock interaction and geological carbon sequestration; geochemical modeling, thermodynamics, and kinetics of chemical reactions; water quality, fate and transport of chemicals in the environment; global environmental changes and sustainability related to water resources and carbon management

PROFESSIONAL AFFILIATIONS

Member, American Geophysical Union, 1985-
Member, Geochemical Society, 1990-
Member, National Ground Water Association, 2005-
Member, American Association of Petroleum Geologists, 2007-
Member, International Association of GeoChemists, 2007-
Member, Mineralogical Society of America, 2009 -

Member, Center for NanoScience, Indiana University, 2008-
Member, Center for Research in Environmental Sciences, 2008-
Research Affiliate, Indiana Geological Survey, 2006 -

CURRENT EXTERNAL RESEARCH GRANTS

Begin	End	Agencies/Title/PI	Amount
10/01/10	9/31/13	Department of Energy DE-FE0004381 *"Reducing Uncertainties in Model Predictions via History Matching of CO_2 Migration and Reactive Transport Modeling of CO_2 Fate at the Sleipner Project, Norwegian North Sea"* Principal Investigator: Chen Zhu	$399,418
8/1/08	7/31/11	National Science Foundation, EAR-0809903 *"Collaborative Research: Microbial Arsenate Reduction Control on Arsenic in Groundwater"* Principal Investigator: Chen Zhu; co- Principal Investigator: Lisa M. Pratt	$98,590
2010	2011	Institute of Geochemistry, Chinese Academy of Sciences *"Applications of chemical kinetics to the studies of uranium hydrothermal ore deposits"* (for field work, travel, and lab analysis within China only) Principal Investigator: Chen Zhu	¥200,000 (~$30k USD)

EXTERNAL GRANTS COMPLETED

Begin	End	Agencies/Title/PI	Amount
7/1/05	6/30/10	National Science Foundation, EAR-0509755 *"Coupled silicate reaction kinetics in an aquifer"* Principal Investigator (PI): Chen Zhu	$240,000
09/1/06	8/31/09	National Science Foundation, Major Research Instruments, 0619462 *"Acquisition of a Dual High Resolution and Cryo Transmission Electron Microscope by Indiana University"* Suchetana Mukhopadhyay (Principal Investigator) Chen Zhu (Co-Principal Investigator) Yves Brun (Co-Principal Investigator) Lyudmila Bronstein (Co-Principal Investigator) Bogdan Dragnea (Co-Principal Investigator)	$713,090
4/1/09	7/1/09	U.S. Department of Energy, National Energy Tech Laboratory "Geochemical analysis related to carbon sequestration" PI: Chen Zhu	$5,000
9/1/04	8/31/08	U.S. Department of Energy, Office of Fossil Energy, DE-FG26-04NT42125 "*A novel approach to experimental studies of mineral dissolution kinetics*" PI: Chen Zhu	$426,701
4/1/08	7/1/08	U.S. Department of Energy, National Energy Tech Laboratory "*Geochemical analysis related to carbon sequestration*" PI: Chen Zhu	$3,000
2/1/04	1/31/06	Department of Energy, Office of Sciences, DE-FG02-04ER63740 *"High-resolution mineralogical characterization and biogeochemical modeling of uranium reaction pathways at the FRC"* PI: Chen Zhu	$99,325
9/00	8/05	National Science Foundation, EAR 0423971/ EAR-0003816 *"Collaborative Research: Silicate reaction kinetics in a major aquifer in*	$142,682

		Arizona" PI: Chen Zhu; co-PI: David Veblen, Johns Hopkins University	
1/01	9/05	Institute of Geophysics and Planetary Physics (1208) "*Silicate reaction kinetics in a major aquifer in New Mexico*" PI: Chen Zhu	$116,058
9/1/03	8/31/05	U.S. Department of Energy, Office of Fossil Energy, DE-FG26-03NT41806 *"Exploratory research on simulation of CO_2-H_2O-brine- mineral Interactions"* PI: Chen Zhu	$50,000

PATENTS AND INVENTIONS (OTHER CREATIVE ACTIVITIES)

U.S. Patent 7922792 issued on 12 April 2011 "Method for Sequestration of CO2 and SO2 Utilizing a Plurality of Waste Streams".

The patent describes a novel neutralization/sequestration process for concomitantly addressing capture and sequestration of both CO2 and SO2 from industrial gas byproduct streams such as bauxite residue from aluminum production and brine from oil/gas production. The possible users of this invention includes the power industry for disposal of CO2/SO2, the gas/oil industry for disposal of brine, and the aluminum industry for disposal of bauxite residue.

PUBLICATIONS

BOOKS

Zhu C. and Anderson G. M. (2002) *Environmental Applications of Geochemical Modeling*, Cambridge University Press, London, hardback ISBN 0-521-80907-X; paperback 0-521-00577-9, 304 pp.

BOOK CHAPTERS

Zhu, C. (2011) Current Status of Geochemical Modeling in Environmental and Geological Studies, *Encyclopedia of Sustainability Science and Technology*, Robert A. Meyers (Ed.), Springer. Submitted October 3, 2010.

Kelly, S., ‡Lu, P., Newville, M.G., Bolin, T., Chattopadhyay, S., Shibata, T., **Zhu**, C., Molecular structure of Lead (II) coprecipitated with Iron(III) oxyhydroxide. Chapter 3 in *Adsorption of Metals by Geomedia II: Variables, Mechanisms, and Model Applications*. M. Barnett and D. Kent (ed.), pp. 67-94, Developments in Earth & Environmental Sciences 7, Elsevier, February 18, 2008. DOI: 10.1016/S1571-9197(07)07003-6

REFEREED JOURNAL PUBLICATIONS

(‡student or post-doc advisees; †corresponding author when not the first author)

2011

#47, ‡Lu, P., N. T. Nuhfer, S. Kelly, Q. Li, H. Konishi, A. Schimmelmann, C. †**Zhu**. Pb^{2+} coprecipitation with iron oxyhydroxide nano-particles. Submitted to ***Geochimica et Cosmochimica Acta*** in April 2010. Favorably reviewed August 2010. Resubmitted Feb 7, 2011; accepted.

#46, **Zhu**, C. and FW Schwartz, Hydrogeochemical processes and their control water quality and water management, ***Elements*** v. 7 (3), 169-174, June 2011.

#45, Oelkers, OH, Hering, J, **Zhu**, C. Water: Is there a global crisis. ***Elements*** v. 7 (3), 157-162, June 2011.

#44, **Zhu,** C. G. Rehrey, B. ‡Treadwell, C. C. Johnson, Looking Back to Move Ahead: How Students Learn Deep Geological Time by Predicting Future Environmental Impacts. ***Journal of College Science Teaching*** - A peer-reviewed journal published by the National Science Teachers Association. Submitted May 15, 2010. Accepted Feb 2, 2011.

#43, Su, W., Hongtao Zhang, Ruizhong Hu, Xi Ge, Bin Xia, Y. ‡Chen, and C. **Zhu**, Mineralogy and geochemistry of gold-bearing arsenian pyrite from the Shuiyindong Carlin-type gold deposit, Guizhou, China: Implications for gold depositional processes. ***Mineralium Deposita***. DOI 10.1007/s00126-011-0328-9.

#42, Pham, V.T.H. , P. ‡Lu, P. Aagaard, C. **Zhu**, H. Hellevang, On the potential of CO_2-water-rock interactions for CO_2 storage using a modified kinetic model. ***The International Journal of Greenhouse Gas Control*** doi:10.1016/j.ijggc.2010.12.002.

#39, ‡Liu, Faye (Yifei), P. ‡Lu, C. **Zhu**, Y. Xiao (2011) Coupled reactive transport modeling of CO_2 Sequestration in the Mt. Simon Sandstone Formation, Midwest U.S.A. ***The International Journal of Greenhouse Gas Control***, v.52(2), 294-307. DOI: 10.1016/j.ijggc.2010.08.008.

#37, ‡Lu, P, Fu, Q., Seyfried, W.E. Jr, ‡Hereford, A.G., †**Zhu**, C. (2011) Navajo Sandstone-Brine-CO_2 interaction: Implications for Geological Carbon Sequestration. ***Environmental Earth Sciences***, 62 (1): 101-118 DOI: 10.1007/s12665-010-0501-y.

#35, ‡Lu, P., †**Zhu**, C. (2011) Arsenic Eh-pH Diagrams at 25 °C and 1 bar. ***Environmental Earth Sciences***, v. 62(8), 1673 - 1683. DOI: 10.1007/s12665-010-0652-x.

2010

#41, Ji, X. and **Zhu**, C., Modelling of phase equilibria in the H_2S-H_2O system with statistical associating fluid theory. ***Energy & Fuels*** v. 24, 6208-6213. DOI:10.1021/ef100847j.

#40, McKnight-Whitford, A., B. Chen, H. Naranmandura, C. **Zhu**, and X. Chris Le, New Method and Detection of High Concentrations of Monomethylarsonous Acid Detected in Contaminated Groundwater. ***Environmental Sciences & Technology***. v.44, 5875-5880. DOI:

10.1021/es100273b.

#38, **Zhu** C. and Kipfer, R., Noble Gas Evidence for the Passing of the Southern Branch of Jet Streams in Late Pleistocene over Black Mesa, Arizona, USA, ***Geology***, v.38, no.1, 83-86; DOI: 10.1130/G30369.1

#36, ‡Liu, Faye (Yifei) Le, C, McKnight-Whitford, A., Xia, Y., Wu, F., Elswick, E., Johnson, C.C., †**Zhu**, C., Antimony Speciation and Contamination of Waters in Xikuangshan Sb Mining and Smelting Area, China. ***Environmental Geochemistry and Health***, v. 32 (5), 401-414, DOI: 10.1007/s10653-010-9284-z.

#34, **Zhu**, C., ‡Lu, P., ‡Zheng, Z., Ganor, J., Coupled Alkali Feldspar Dissolution and Secondary Mineral Precipitation in Batch Systems: 4. Numerical modeling of reaction path. ***Geochimica et Cosmochimica Acta*** v.74, 3963-3983. DOI: 10.1016/j.gca.2010.04.012.

2009 #33, Zhu, C., Geochemical modeling of reaction paths and networks. Chapter 12 in *Thermodynamics and Kinetics of Water-rock Interactions*. E.H. Oelkers and J. Schott (eds), Review in Mineralogy and Geochemistry vol.70, pp. 533-569, June 2009. DOI: 0.2138/rmg.2009.70.12.

#32, **Zhu**, C., and ‡Lu, P., Alkali Feldspar Dissolution and Secondary Mineral Precipitation in Batch Systems: 3. Saturation States of Product Minerals and Reaction Paths. ***Geochimica et Cosmochimica Acta.*** v.73, p.3171-3120**.** DOI: 10.1016/j.gca.2009.03.015.

#31, Georg, R. B., **Zhu**, C. Reynolds, R.C., and Halliday, A.N. (2009) Stable silicon isotopes of groundwater, feldspars, and clay coatings in the Navajo Sandstone aquifer, Black Mesa, Arizona, USA. ***Geochimica et Cosmochimica Acta,*** v.73, 2229-2241. DOI: 10.1016/j.gca.2009.02.005

#30, Fu, Q., P ‡Lu, H. ‡Konishi, R. Dilmore, H. Xu, W. E. Seyfried, Jr., and C. **Zhu**. Coupled alkali-feldspar Dissolution and Secondary Mineral Precipitation in Batch Systems: 1. New Experimental Data at 200°C and 300 bars. ***Chemical Geology*** 91(3), 955-964. DOI: 10.1016/j.chemgeo.2008.09.014

#29, ‡Yang, C., Samper, J., **Zhu**, C., Jones, S.B., Numerical modeling of the development of a preferentially leached layer on feldspar surfaces. ***Environmental Geology***, v.57, p. 1639-1647. DOI: 10.1007/s00254-008-1445-3.

2008 #28, Dilmore, R., ‡Lu, P., Soong, Y., Allen, Hedges, H., Fu, J. K., Dobbs, C., Degalbo, A., **Zhu**, C. , Sequestration of CO_2 in mixtures of bauxite residue and saline waste water, ***Energy & Fuels***, v 22, No.1, p. 343-353. DOI: 10.1021/ef7003943

2007 #27, Duan, Z., Sun, R., and Liu, R., and **Zhu**, C., Accurate thermodynamic model for H_2S solubility in pure water and brines. ***Energy & Fuels*** v. 21, 2056-2065. DOI: 10.1021/ef070040p

#26, Hu, J, Duan, Z, **Zhu**, C., and Chou, I., PVTx properties of the CO_2-H_2O and CO_2-H_2O-NaCl systems below 647K: Assessment of experimental data and thermodynamic models. ***Chemical Geology*** v. 238, p.249-267. DOI: 10.1016/j.chemgeo.2006.11.011

#25, ‡Hereford, A. G., Keating, E., Guthrie, G., †**Zhu**, C, Reactions and reaction rates in the regional aquifer beneath Pajarito Plateau, north-central New Mexico. ***Environmental Geology***. v. 52, No. 5, p.965-977, DOI: 10.1007/s00254-006-0539-z.

#24, ‡Yang, C., Park, M., and **Zhu**, C., A Method for Estimating In Situ Reaction Rates from Push-Pull Experiments for Arbitrary Solute Background Concentrations. ***Environmental Geosciences and Engineering***, v. 13, No.4, p.345-354. Web link

#23, Ganor, J., ‡Lu, P., ‡Zheng, Z., and **Zhu**, C., Bridging the gap between laboratory measurements and field estimations of weathering using simple calculations. ***Environmental Geology***. *v*.53, No.3, p.599-610, DOI: 10.1007/s00254-007-0675-0.

2006 #22, **Zhu**, C. Veblen, D.R., Blum, A.E, Chipera, S. Naturally weathered feldspar surfaces in the Navajo Sandstone aquifer, Black Mesa, Arizona: Electron microscopic characterization. ***Geochimica et Cosmochimica Acta*** v. 70, no.18, 4600-4616, 2006 DOI: 10.1016/j.gca.2006.07.013.

#21, Stubbs, J. E., Elbert, D. C., Veblen, D. R., **Zhu**, C., Electron microbeam investigation of uranium-contaminated soils from Oak Ridge, TN, USA. ***Environmental Science & Technology*** 40, 2108-2113, 2006. DOI: 10.1021/es0518676

#20, ‡Strazisar, B. R., **Zhu**†, C., and Hedges, S. W., Preliminary modeling of the long-term fate of CO_2 following injection into deep geological formations. ***Environmental Geosciences*** v.13, no.1, 1-15, 2006. DOI: 10.1306/eg.09280404023

#19, Duan, Z., Sun, R., **Zhu**, C. and Chou, I., An improved model for the calculation of CO_2 solubility in aqueous solutions containing Na^+, K^+, Ca^{2+}, Mg^{2+}, Cl^-, and SO_4^{2-}. ***Marine Chemistry*** v.98, 131-139, 2006. DOI: 10.1016/j marchem.2005.09.001

2005 #18, **Zhu**, C., In situ feldspar dissolution rates in an aquifer. ***Geochimica et Cosmochimica Acta*** v. 69, no.6, 1435-1453, 2005. DOI: 10.1016/j.gca.2004.09.005

#17, ‡Martin, S., **Zhu**†, C, Rule, J., Nuhfer, N. T., Ford, R., Hedges, S., Yee, S., A high resolution TEM-AEM, pH titration, and modeling study of Zn^{2+} coprecipitation with ferrihydrite. ***Geochimica et Cosmochimica Acta*** v. 69, no.6, 1543-1553, 2005. DOI: 10.1016/j.gca.2004.08.032

2004 #16, **Zhu**, C., Coprecipitation in the barite isostructural family: 1. Binary mixing properties. ***Geochimica et Cosmochimica Acta*** v. 68, no. 16, 3327-3337, 2004. DOI: 10.1016/j.gca.2003.10.014

#15, **Zhu**, C., Coprecipitation in the barite isostructural family: 2. Numerical simulations of precipitation kinetics and reactive transport. ***Geochimica et Cosmochimica Acta*** v. 68, no. 16, 3339-3349, 2004. DOI: 10.1016/j.gca.2003.10.013

2003 #14, **Zhu**, C., Winterle, J. R., and ‡Love, E. I. Late Pleistocene and Holocene recharge rates from the chloride mass balance method and chloride-36 data. ***Water Resources Research*** v. 39, no. 8, 1182, 2003. DOI: 10.1029/2003WR001987

#13, **Zhu**, C., A case against K_d-based transport model: Natural attenuation at a mill tailings site. ***Computer & Geosciences*** v. 29, 351-359, 2003. DOI: 10.1016/S0098-3004(03)00010-4

2002 #12, **Zhu**, C., Anderson, G. M., and Burden, D. S. Natural attenuation reactions at a uranium mill tailings site, western USA. ***Ground Water*** v. 40, no. 1-2, 5-13, 2002. Web link

#11, **Zhu**, C., Estimation of surface precipitation constants from linear free energy correlation. ***Chemical Geology*** vol. 188, 23-32, 2002. Web link

2001 #10, Penn, R. L., **Zhu**, C., Xu, H., and Veblen, D. R., Iron oxide coatings on sand grains from the Atlantic coastal plain: HRTEM characterization. ***Geology*** v. 29, no. 9, 843-846, 2001. Web link

#9, **Zhu**, C., Hu, F. Q., and Burden, D. S., Multi-component reactive transport modeling of natural attenuation of an acid ground water plume at a uranium mill tailings site. ***Journal of Contaminant Hydrology*** v. 52, no. 1-2, 85-108, 2001. Web link

#8, **Zhu**, C., and Burden, D. S., Mineralogical compositions of aquifer matrix as necessary initial conditions in reactive contaminant transport models. ***Journal of Contaminant Hydrology*** v. 51, no. 3-4, 145-161, 2001. Web link

2000 #7, **Zhu**, C., Estimate of recharge from radiocarbon dating of groundwater and numerical flow and transport modeling. ***Water Resources Research*** v. 36, no. 9, 2607-2620, 2000. Web link

#6, **Zhu**, C., and Murphy, W. M., On radiocarbon dating of ground water. ***Ground Water*** v. 38, no. 6, 802-804, 2000. Web link

1998 #5, **Zhu**, C., Waddell, R. K., Star, I., and Ostrander, M., Responses of groundwater in the Black Mesa basin, northeastern Arizona to paleoclimatic changes during late Pleistocene and Holocene. ***Geology*** v. 26, 127-130, 1998. Web link

1994 #4, **Zhu**, C., Xu, H., Ilton, E., Veblen, D., Henry, D., Tivey, M. K., and Thompson, G., TEM-AEM observations of high-Cl biotite and amphibole and possible petrological implications. ***American Mineralogist*** v. 79, 909-920, 1994. Web link

1993 #3, **Zhu**, C. New pH sensor for hydrothermal fluids. ***Geology*** v. 21, 983-986, 1993. Web link

1992 #2, **Zhu**, C. and D. A. Sverjensky, F-Cl-OH partitioning between apatite and biotite. ***Geochimica et Cosmochimica Acta*** v. 56, 3435-3467, 1992. Web link

1991 #1, **Zhu**, C. and D.A. Sverjensky, Partitioning of F-Cl-OH between minerals and hydrothermal fluids. ***Geochimica et Cosmochimica Acta*** v. 55, 1837-1858, 1991. Web link

Manuscripts Submitted or Accepted

‡Liu, Faye (Yifei), P. ‡Lu, C. Griffith, Y. Soong, S. W. Hedges, C. Zhu, CO_2-caprock-brine interaction: Reactivity experiments on Eau Claire Shale and a review of literature. Submitted to *The International Journal of Greenhouse Gas Control*. Submitted Feb 5, 2011.

‡Lu, P., Zhu, C., Coupled alkali feldspar dissolution and secondary mineral precipitation in batch systems: 2. Effects of CO_2 and implications for carbon sequestration. To be submitted to *Geochimica et Cosmochimica Acta*.

REVIEWED PROCEEDINGS PAPERS

Ji, X. and **Zhu**, C. (2010) Modelling of phase equilibria in the H_2S-H_2O system with statistical associating fluid theory. *Proceedings of the 19th International Congress of Chemical and Process Engineering CHISA 2010 and the 7th European Congress of Chemical Engineering ECCE-7*, Prague, August 28 - September 1, 2010, 9 pages.

Zhu, C., A.E. Blum, D.R. Veblen (2004) Feldspar dissolution rates and clay precipitation in the Navajo aquifer at Black Mesa, Arizona, USA. *Proceedings of the Eleventh International Symposium on Water-Rock Interaction WRI-11*, Vol. 2 (ed. R. B. Wanty and R. R. I. Seal), 27 June-2 July, 2004, Saratoga Springs, New York, A.A. Balkema, pp. 895-899.

Soong, Y., Allen, D.E., McCarthy-Jones, J.R., Harrison, D.K., Hedges, S.H., Baltrus, J.P., and **Zhu**, C. (2004) Preliminary experimental results of CO_2 sequestration with brine. *Proceedings of the Eleventh International Symposium on Water-Rock Interaction WRI-11*, Vol. 2 (ed. R. B. Wanty and R. R. I. Seal), 27 June-2 July, 2004, Saratoga Springs, New York, A.A. Balkema, pp. 597-600.

Zhu, C., G. Yeh, and R. K. Waddell (1996) A new approach to modeling metal contaminant transport associated with mining wastes, *Proceedings of Tailings & Mining Waste '96*, January 16-19, 1996, Colorado State University, Fort Collins, Colorado, pp. 341-250.

INVITED LECTURES, SYMPOSIA, AND SEMINARS (2004-PRESENT)

2011
- University of Illinois at Chicago, Department of Earth and Environmental Sciences, April 14, 2011
- Ben-Gurion University of the Negev, Israel, March 16, 2011
- "Geochemical Modeling" short course, Israel, March 11-15, 2011
- Keynote speaker, Kent State University, Scholarship of Teaching and Learning (SOTL) program, "Decoding he disciplines: Helping students through the bottlenecks", February 17, 2011
- Workshop on "decoding the disciplines", Kent State University, Scholarship of Teaching and Learning (SOTL) program, "Decoding he disciplines: Helping students through the bottlenecks", February 18, 2011

2010
- 3rd U.S.-China CO_2 Emissions Control Science & Technology Symposium, December 10 - 12, 2010, Hangzhou, China
- National Energy Technology Laboratory, Earth Science Seminar Series, Pittsburgh, PA, November 19, 2010
- Washington University - St. Louis, weekly departmental colloquium, Department of Energy, Environmental and Chemical Engineering, "Kinetics of water-rock interactions in geological carbon sequestration", November 5, 2010
- Indiana University – Bloomington, Scholarship of Teaching and Learning (SOTL) program, "The Case Study Method for the Assessment of Student Learning: Using Scientific Reasoning and Deep Geological Time to Predict Future Environmental Impacts", September 24, 2010
- Beijing Normal University, Department of Physics, July 15, 2010
- Chinese Academy of Science, Institute of Geochemistry, Guiyang, China, May 25, 2010
- Institute for Study of the Earth's Interior Okayama University at Misasa, May 18, 2010
- Ohio State University, School of Earth Sciences, April 23, 2010
- Ohio State University, Department of Chemistry, April 22, 2010
- The Rast-Holbrook lecture, Department of Earth and Environmental Sciences, University of Kentucky, March 25, 2010.
- Joint seminar, Department of Geological Sciences, Department of Geography, and School of Public and Environmental Affairs, Indiana University – Bloomington, February 4, 2010.
- Stanford University's The Global Climate and Energy Project and USGS sponsored workshop on Caprocks and Seals in Geologic Carbon Sequestration, January 14, 2010.
- Schlumberger-Doll Research, Cambridge, MA, January 5, 2010.

2009
- Invited speaker, Annual meeting of American Geophysical Union, Session H24 "Water in the Critical Zone: Major Elements, Trace Elements, and Isotopes as Biogeochemical Tracers", San Francisco, December 14 – 18, 2009.
- Columbia University, Dept. of Earth and Environmental Engineering, New York, Oct. 2, 2009.
- Invited lecture for the short course "Thermodynamics and kinetics of water-rock interaction", sponsored by the Mineralogical Society of America and The Geochemical Society at the Goldschmidt conference in Davos, Switzerland, June 19 – 20, 2009.
- University of Warsaw, Faculty of Geology, Poland, May 12- 13, 2009, lectures and seminars.
- University of Oxford, Department of Earth Sciences, England, May 1, 2009.
- Norwegian Center of Excellence on "Physics of Geological Processes", University of Oslo, April 30, 2009.
- University of Wyoming, School of Energy Resources & Department of Geology and Geophysics, April 16, 2009.
- KTH, Royal Swedish Institute of Technology, Department of Land and Water Resources Engineering, Stockholm, April 3, 2009.
- Invited Talk, 237th annual national meeting of the American Chemical Society, special session on "Coprecipitation of metals during chemically and biologically induced mineral precipitation", Salt Lake City, UT, March 22-26, 2009.
- Invited speaker, "Advances in the Science of carbon Sequestration", meeting organized by Ohio State University, Schlumberger, Battelle, AEP, Columbus, Ohio, March 9 – 10, 2009.

- Hoosier Environmental Council, Feb. 27, 2009, inaugural lecture for "Hoosier Environmental Council Policy Forum Series".
- University of Notre Dame, Department of Civil Engineering and Geological Sciences, January 22, 2009.

2008
- University of Albert-Ludwig University, Institute of Mineralogy and Geochemistry, Germany, December 16, 2008.
- Swiss Federal Institute of Aquatic Science and Technology, Department of Water Resources and Drinking Water, November 4, 2008.
- Academia Sinica, Center for Environmental Changes, Taipei, Taiwan, October 29, 2008.
- National Taiwan University, Department of Geological Sciences, Taiwan, October 28, 2008.
- China University of Geosciences, Wuhan, China, October 25, 2008.
- Plenary address, 2008 Annual National Meeting of Petrology and Geodynamics, Guiyang, China, October 19, 2008.
- China University of Oceanography, October 16, 2008.
- University of California – Berkeley, Dept. of Earth and Planetary Sciences, April 24, 2008.
- Lawrence Livermore National Laboratory, Geochemistry Div., January 17, 2008.
- Lawrence Berkeley National Laboratory, Div. of Earth Sciences, January 9, 2008.

2007
- ExxonMobil Upstream Research Company, "Modeling Water-rock Interactions with Applications to Geological Carbon Sequestration, EOR, and Digenesis", July 18, 2007.
- Chengdu University of Technology, June 6, 2007.
- Chinese Academy of Sciences, Institute of Geochemistry, May 31, 2007.
- Zhejiang University, Department of Earth Sciences, May 24, 2007.
- Zhejiang University of Technology, College of Biological and Environmental Engineering, May 22, 2007.
- Department of Geological Sciences, University of Oregon, Eugene, March 7, 2007.

2006
- School of Public and Environmental Affairs, Seminar Series on Environmental Science and Policy, Indiana University – Bloomington, October 5, 2006, "Recharge at Yucca Mountain, Nevada: The Science, Policy, and the Court".

2005
- Geological Society of America Annual Meeting, Topical Session "Paleohydrogeology and paleoclimate – looking into the past," Salt Lake City, Utah, October 16-19, 2005.
- Ohio State University, Department of Geological Sciences, April 21, 2005.
- U.S. Nuclear Regulatory Commission, Invited presentation before Advisory Committee on Nuclear Waste, Rockville, Maryland, December 13, 2005.
- Anglo Research, Quarterly seminar in chemistry, Johannesburg, South Africa, November 24, 2005.
- Okayama University at Misasa, Japan, Institute for Study of the Earth's Interior, June 20, 2005.
- Nanjing University, China, July 4, 2005.
- Beijing University, China, July 7, 2005.
- Zhejiang University, China, July 1, 2005.
- International Conference on Safe Water (SAFEWATER 2005), San Diego, CA, October 21, 2005.

2004
- Swiss Federal Institute of Technology, Institute of Mineralogy and Isotopes, April 13, 2004, Zurich, Switzerland
- Paul Scherrer Institut, Villigen, Switzerland, June 24, 2004
- Institute of Earth Sciences Jaume Almera, Spanish Research Council (CSIC), April 22, 2004, Barcelona, Spain
- Indiana University-Purdue University Indianapolis (IUPUI), Department of Geological and Environmental Sciences, October 12, 2004
- Western Michigan University, Kalamazoo, Michigan, September 27, 2004

INVITED LECTURES, SYMPOSIA, AND SEMINARS (1991-2003)

2003
- PITTCON, invited speaker on chemical modeling, Orlando, Florida, March 14, 2003
- PPG Industries, corporation remediation group
  U.S. Steel Corporation, Corporate environmental affair manager meeting

2001
- Carnegie Mellon University, Department of Civil and Environmental Engineering
- Southwest Research Institute, Center for Nuclear Waste Regulatory Analyses
- University of Pittsburgh, Department of Mathematics, Numerical Analysis Group
- Pittsburgh Geological Society
- University of Minnesota

2000
- George Washington University, Department of Environmental Earth Sciences
- University of Pittsburgh, Department of Geology and Planetary Science
- Invited talk in a special session at American Geophysical Union Annual Meeting

1999
- Southwest Research Institute, Center for Nuclear Waste Regulatory Analyses

1998
- U.S. Geological Survey, Lakewood, Colorado
- U.S. Geological Survey, Arizona District Office, Tucson
- U.S. EPA, Robert S. Kerr Environmental Research Laboratory
- Old Dominion University
- Rensselaer Polytechnic Institute

1997
- University of Missouri-Rolla
- Mobil Oil Company
- BHP Copper USA, Tucson, AZ

1996
- Colorado Groundwater Association

1994
- Unocal Geothermal
- U.S. Geological Survey, Menlo Park

1993
- Invited talk at Geological Society of America Annual Meeting
- Pacific Northwest National Laboratory
- University of Illinois-Chicago
- Queens College

1991
- Woods Hole Oceanographic Institution
- University of Mississippi

PRESENTATIONS AT NATIONAL AND INTERNATIONAL CONFERENCES
(‡presented by student advisee)

2011 Ji, X, Zhu C. (2011) Thermodynamic study for CO2 storage in deep saline aquifers. Goldschmidt Conference, August 14 – 19, 2011, Prague, Czech Republic.

Chen Zhu, ‡Peng Lu, Faye Liu (2011) Experiments of CO_2-brine-feldspars/sandstone/shale interactions: Implications for geological carbon sequestration, Goldschmidt Conference, August 14 – 19, 2011, Prague, Czech Republic.

2010 Chen **Zhu**, Peng Lu, and Jiwchar Ganor (2010) Implications of the new hypothesis on the apparent discrepancy between field – lab feldspar dissolution rates on modeling reactive transport in the critical zone, Goldschmidt Conference, June 14 – 18, 2010, Knoxville, Tennessee, USA.

‡Peng Lu, Faye Liu, Sheila Hedges, Craig Griffith, Yee Soong, and Chen **Zhu** (2010) Experiments of CO_2-brine-feldspars/sandstone/shale interactions: Implications for geological carbon sequestration, Goldschmidt Conference, June 14 – 18, 2010, Knoxville, Tennessee, USA.

Xiaoyan Ji and Chen **Zhu** (2010) Modeling of phase equilibria for the CO_2-H_2S-H_2O-salts systems, Goldschmidt Conference, June 14 – 18, 2010, Knoxville, Tennessee, USA.

‡Faye Liu, Peng, Lu, Yitian Xiao, and Chen **Zhu** (2010) Multi-phase reactive flow and transport modeling of CO_2 sequestration in the Mt. Simon sandstone formation, Midwest USA, Goldschmidt Conference, June 14 – 18, 2010, Knoxville, Tennessee, USA.

Zhu, C. (2010) How well can we predict long-term water-rock-CO_2 reactions for CCS? 239th American Chemical Society National Meeting, San Francisco, CA, March 22-26, 2010.

‡Liu, F., Lu, P., Griffith, C., Hedges, S. W., and **Zhu**, C. (2010). Eau Clair shale-brine-CO_2 interactions: Implications for geological carbon sequestration. Stanford/USGS Workshop on Caprocks and Seals in Geologic Carbon Sequestration, Pacific Grove, CA, January 12-15, 2010.

2009 **Zhu**, C., (2009) How Well Can We Model Water-rock-CO_2 Interaction for CCS? American Geophysical Union Annual meeting, San Francisco, December 14 -18, 2009, H12b-03.

‡Lu, P., Fu, Q., Seyfried, W.E., Griffith, C., Hedges, S., Soong, Y. and **Zhu**, C. (2009) Sandstone/Shale-Brine-CO_2 Interactions: Implications for Geological Carbon Sequestration. American Geophysical Union Fall Meeting, December 14-18, San Francisco, California, H12a-0910.

‡Liu, F., Lu, P., **Zhu**, C., and Xiao, Y., (2009). Coupled reactive transport modeling of CO_2 sequestration in the Mt. Simon sandstone formation, Midwest U.S.A. American Geophysical Union Fall Meeting, San Francisco, California, December 14-18th, 2009, H12a-0918.

‡Lu, P., Fu, Q., Seyfried, W.E., Griffith, C., Hedges, S., Soong, Y. and **Zhu**, C. (2009) Sandstone/Shale-Brine-CO2 Interactions: Implications for Geological Carbon Sequestration. Eastern Section AAPG Annual Meeting, September 20-22, 2009, Evansville, Indiana

‡Liu, F., Lu, P., **Zhu**, C., and Xiao, Y. (2009) Reactive transport modeling of the injection and CO2 fate in the Mt. Simon sandstone formation. Eastern Section AAPG Annual Meeting, September 20-22, 2009, Evansville, Indiana

‡Lu, P., **Zhu**. C., Kelly. S., and Nuhfer, T. (2009) Pb and Zn Coprecipitation with Iron Oxyhydroxide Nano-Particles, 237th American Chemical Society National Meeting, Salt Lake City, UT, March 22-26.

Zhu, C., Fu, Q., Lu P., Seyfried W.E., (2009) New experimental data and modeling results of coupled alkali feldspar dissolution and secondary mineral precipitation, Annual Meeting of the Geochemical Society and European Association of Geochemistry, Davos, Switzerland, June 2009. *Geochimica et Cosmochimica Acta*, v. 73, no. 13, A1530.

2008 **Zhu** C., Fu, Q., Lu P., Seyfried W.E., New Experiments of Feldspar Hydrolysis and Implications for interpretations of weathering rates. Sixth Swiss Geosciences Meeting, Lugano, Switzerland, November 21-23, 2008.

Zhu, C. (2008) Chemical modeling and electron microscopic characterization for accelerated carbonation of industrial materials. Oct 01-03, 2008. Proceedings of ACEME08 - Second International Conference on Accelerated Carbonation for Environmental and Materials Engineering, the University of Rome "La Sapienza", Rome, Italy, pp.99-104.

‡Lu, P., **Zhu** C., Fu, Q., Seyfried, W.E. (2008) Navajo Sandstone-Brine-CO_2 Interactions: Implications for Geological Carbon Sequestration. Geological Society of America annual meeting, October 5-9, Houston, TX.

Zhu C., Fu, Q., Lu P., Seyfried W.E. (2008) New Experiments of Feldspar Hydrolysis and Secondary Mineral Precipitation and Implications for Understanding the Coupled Feldspar Dissolution and Clay Mineral Precipitation Kinetics and Field-Lab Discrepancy. 12th International Conference on Experimental Mineralogy Petrology Geochemistry EMPG XII), Innsbruck, Austria, September 7 – 10,

2008, p122, Konzett J, Tessadri R., and Tropper P. (eds), Innsbruck University Press, ISBN 978-3-902571-66-3.

Yee Soong, R. M. Dilmore, S. W. Hedges, C Griffith, V Romanov, D. E. Allen, C. **Zhu**, and J. K. Fu., 2008, CO_2/SO_2 sequestration via brine/bauxite residue mixture. Abstracts of the American Chemical Society 236, American Chemical Society National Meeting, Philadelphia, PA, August 17-21, 2008.

Georg, R.B. Zhu, C., Basu, A., Halliday, A. N. (2008) Isotope fractionation of dissolved silicon in groundwater – weathering of secondary minerals. *Geochimica et Cosmochimica Acta*, v. 72, no. 12, A303. Proceedings of 18th Annual Goldschmidt Conference, Vancouver, British Columbia, Canada.

Zhu, C., Lu, P. , Hedges, S. (2008) Geochemical modeling as an effective tool for monitoring, measuring, verification of CO_2 sequestration in deep geological formations. Seventh Annual Conference Carbon Capture & Sequestration Conference. Pittsburgh, PA, May 5 - 8, 2008.

‡Lu, P., R. M. Dilmore, Soong, Y., and C. **Zhu**, (2008) Novel Beneficial Use of Oil Field Brine and Bauxite Residue for Carbon Sequestration. American Association of Petroleum Geologists Annual Convention and Exhibition, April 20-23, San Antonio, TX.

Zhu, C. (2008) Coatings on sediment grains in the Navajo Sandstone, Black Mesa, Arizona, and potential implications on water-rock interaction kinetics. American Association of Petroleum Geologists Annual Convention and Exhibition, April 20-23, San Antonio, TX.

Zhu, C., Jin, Q, Zheng, Z, Reeder, M., (2008) Bioremediation of groundwater uranium contamination: field experiments and biogeochemical modeling. American Association of Petroleum Geologists Annual Convention and Exhibition, April 20-23, San Antonio, TX.

2007 Jin, Q., **Zhu**, C., Roden, E. (2007) A metabolism-based modeling approach to redox transformations in a nitrate- and uranium- contaminated aquifer at Oak Ridge, Tennessee, USA, AGU fall meeting December 14 – 18, 2007 San Francisco.

Zhu, C., (2007) In situ weathering rates in aquifers and the surfaces of naturally weathered feldspars. Geological Society of America Annual Meeting, October 24 – 28, Denver, Colorado.

‡Lu, P., Fu, Q., Seyfried, W.E., Strazisar, B.R., Hedges, S.W., Zheng, Z., **Zhu**, C. (2007) Experimental Determination of Reaction Rates and Modeling of the Long-term Fate of CO_2 in Deep Geological Formations. AAPG Eastern Section Meeting, September 16-18, Lexington, Kentucky.

Zhu, C. (2007) Redefining Feldspar-water Interfaces, *Geochimica et Cosmochimica Acta*, v. 71, no. 15S, A1172. Proceedings of 17th Annual Goldschmidt Conference, the Annual Meeting of the Geochemical Society and European Association of Geochemistry, August 8 – 12, Cologne, Germany.

Soong, Y., R. M. Dilmore, D. E Allen, S. W. Hedges, C. Griffith, and C. **Zhu** (2007) CO_2 sequestration via brine/bauxite residue mixture. American Chemical Institute of Chemical Engineering, Annual meeting, Salt Lake City, UT.

‡Lu, P., Fu, Q., Seyfried, W.E., Strazisar, B.R., Hedges, S.W., Zheng, Z., **Zhu**, C. (2007) Experimental determination of reaction rates and modeling of the long-term fate of CO_2 in deep geological formations. AAPG Annual Convention and Exhibition, April 1-4, Long Beach, CA, Abstract Volume, p.85.

2006 **Zhu**, C. (2006) In situ silicate reaction rates in sandy aquifers. *Geochimica et Cosmochimica Acta*, v. 70, no. 18S, A753. Proceedings of 16th Annual Goldschmidt Conference, the Annual Meeting of the Geochemical Society, Melbourne, Australia, August 27-September 1, 2006.

Jin, Q. Z. Zheng, and **Zhu**, C. (2006) A bioenergetics-kinetics coupled modeling study on subsurface microbial metabolism in a field biostimulation experiment. B53B-0343 *EOS Trans.* AGU fall meeting Suppl., 2006.

Zhu, C., Z. Zheng, M.D. Reeder (2006) Biogeochemical modeling of a field biostimulation experiment. *Geological Society of America Abstr. with Programs,* v. 38, no. 7, p. 507.

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Zhu, C., J. R. Winterle, and E. I. Love (2002) Groundwater Recharge in Late Pleistocene and Holocene at Yucca Mountain, Nevada USA, 12th Goldschmidt Conference, Davos, Switzerland, August 118-23, 2002, *Geochimica et Cosmochimica Acta,* v. 66(15A), no. S1, p. 879.

2001 **Zhu**, C., A. E. Blum, S. Hedges, and C. White (2001) A tale of two rates: implications of the discrepancy between laboratory and field feldspar dissolution rates on geological carbon sequestration. *Geological Society of America Abstr. with Programs,* v. 33, no. 6, A234.

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1999 **Zhu**, C., F. Q. Hu, G. M. Anderson, and D. S. Burden (1999) Reactive mass transport modeling of natural attenuation of an acid plume at a uranium mill tailings site. *Geological Society of America Abstr. with Programs,* v. 31, no. 7, A69.

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1997 **Zhu**, C., R. K. Waddell, I. Star, and M. Ostrander (1997) Paleoclimatic impacts on the recharge rates to the N-aquifer at Black Mesa, Arizona, USA. *EOS Trans. AGU,* v. 78, no. 17 Spring Meeting Suppl., S134.

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1996 **Zhu**, C., G. Yeh, and R. K. Waddell (1996) A new approach to modeling metal contaminant transport associated with mining wastes. *Proceedings of Tailings & Mining Waste '96,* January 16-19, 1996, Colorado State University, Fort Collins, Colorado.

1995 **Zhu**, C., R. K. Waddell, J. R. Erickson, and G. Chase (1995) Geochemical analysis of acid plume migration and contaminant transport at a uranium mill tailings impoundment, central Wyoming. *Amer. Geophysical Union Transactions,* v. 76, no. 46, p. 226.

1994 **Zhu**, C., M. Rafal, and S. Sanders (1994) Modeling oil field mixed scales (coprecipitation) and formation damage. *Proceedings of International Symposium of Formation Damage Control, Society of Petroleum Engineers,* Paper#27372, p. 321, February 14-16, Lafayette, Louisiana.

1993 **Zhu**, C., S. Sanders, and M. Rafal (1993) Modeling coprecipitation reactions as the control of trace elements mobility in groundwater. *Geological Society of America Abstr . with Programs,* v. 25, no. 6, A-376.

Zhu, C., H. Xu, E. Ilton, D. Veblen and D. Henry (1993) A TEM study of high-Cl amphiboles and biotites: Possible petrologic interpretations. *Geological Society of America Abstr. with Programs,* v. 25, no.6, A371, invited.

1992 **Zhu**, C. (1992) Predicting fluoride and chloride concentrations of hydrothermal fluids. *Geological Society of America Abstr. with Programs,* v. 24, no. 7, A206.

1991 **Zhu**, C. (1991) Biotite $(Mg,Fe,Al^{VI})(F,Cl,OH)$ reciprocal mixing properties: Evidence from F-Cl-OH partitioning between apatite and biotite (abstr.). *Geological Society of America Abstr. with Programs,* v. 23, no. 5, A95.

Zhu, C. and D. A. Sverjensky (1991) A set of consistent thermodynamic properties for fluorapatite, hydroxyapatite, and chlorapatite (abstr.). *Amer. Geophysical Union Transactions,* v. 72, no. 17, p. 145.

1990 **Zhu**, C. and D. A. Sverjensky (1990) Partitioning of F, Cl, and OH between minerals and hydrothermal fluids (abstr.). *Geological Society of America Abstr. with Programs,* v. 22, no. 7, A157.

Sverjensky, D. A., P. A. Molling, and C. **Zhu** (1990) Chemical mass transfer calculations for magmatic hydrothermal systems (abstr.). *Program and Abstracts.* V.M. Goldschmidt Conference, Baltimore, 1990.

1986 Henry, A., C. **Zhu**, and G. M. Anderson (1986) Organic matter and kaolinite: Evidence for alteration in the wall rocks of Viburnum Trend ore bodies, southwest Missouri. In: J. Gregg and R. Hagni (eds).

Proceedings of Symposium on the Bonneterre Formation (Cambrian) Southeast Missouri, Rolla, Missouri.

COURSES

Undergraduate Courses

Environmental Geology (G171)
This is an introductory level, service course for non-science majors with a large enrollment. The course includes both lectures and laboratories. Many students take this course to fulfill their requirements for a B.A. degree in education, business, social sciences, and humanities. Students are introduced to the concept of the scientific method; dynamic earth systems; geological processes as related to global climate changes, water resources, environmental contamination, and earthquake, landslide, flood, and volcano hazards. My duties also included supervision of Associate Instructors.

I have taught (enrollments in parenthesis): Fall09(43), Fall06(37), Fall05(98*). *as 8 week course.

Principles of Hydrogeology (G451)
This is an advanced undergraduate and introductory graduate level course. The course introduces the principles and practices of physical and chemical hydrogeology. It includes both lectures and laboratories. I teach the laboratories myself.

Spring10(11), Spring07(6), Spring06(8), Fall04(10) at Indiana University. Spring02(11) and Spring01(25) at University of Pittsburgh; Spring99(6) at Old Dominion University. The offering in 04 and 07 was co-taught.

Graduate Courses

Geochemical Modeling (G586)
I have developed this course based on the textbook "*Environmental Applications of Geochemical Modeling*," which I co-authored with Greg Anderson and was published by Cambridge University Press. This is an advanced graduate course to be taken after students have already had G406 (Introduction to Geochemistry) or E539 (Aquatic Chemistry). The course provides a solid foundation for geochemical modeling (principles of thermodynamics, kinetics, and computational methods), teaches the use of geochemical modeling software, and trains students to use geochemical models as quantitative tools to synthesize and interpret geochemical data and processes in environmental and geological systems. The course includes an intensive laboratory, which I teach myself.

Fall09(7), Spring07(5), Spring05(14). Also Spring08(14) at ETH and Fall02(7) at Pitt.

Other Courses

Honors Research in Geology (G499)
I supervised an undergraduate student, Kyle Brown, in Fall 2004 in the honors program. I supported the performance of his research in my laboratory from extramural grants for research costs and a stipend. I helped him to obtain an "Honors College Undergraduate Research Grant."

G490 (32281) Undergraduate Seminar
This was a special situation. We had a highly motivated student who wished to learn chemical hydrogeology from me while I was on a Fulbright Scholarship in Norway. We "met" weekly through video conference via Skype. 3 credits, 1 student (Dalton Hardisty), Spring 2009.

Mineralogy
I taught this course at Old Dominion University. This is a core course for the geology curriculum. Understanding mineralogy is essential for studying the formation and properties of rocks and for understanding what controls the properties of fluids that interact with the minerals. I taught this course twice. The enrollments were 20 to 30 students. The course includes an intensive laboratory. My duties also included developing laboratory teaching materials and supervision of a Teaching Assistant.

PROFESSIONAL SHORT COURSES TAUGHT

Invited Short Course on *Geochemical Modeling*

March 11, 14 – 15, 2011, Ben-Gurion University of the Negev, Israel. Twenty-four professors, scientists, and graduate students from the Hebrew University of Jerusalem, Ben-Gurion University of the Negev, and the Israeli Geological Survey participated.

November 21 – 23, 2005, University of the Witwatersrand, Johannesburg, South Africa . The sixteen participants came from the University of the Witwatersrand, University of Free State, University of Swaziland of Swaziland, Masaryk University of Czech Republic, Anglo Platinum, Angola Gold Ashanti, South Africa Nuclear Energy Corporation, Eskom (the largest electric utility company in Africa), SRK Consultants, and Golder Consultants.

GUEST LECTURES

Guest Lecture, Okayama University, Japan, 6 graduate students, "Editorial processes at some journals and how to write a scientific paper", June 29, 2010

Guest lectures, University of Oslo, **Norway**, GEO9900 - Chemical processes in soil and ground water, ~10 students, "Groundwater flow and solute transport modeling" and "Laboratory on modeling", March 27, 2009

Guest lecture, University of Warsaw, **Poland**, guest lectures in which students earn one credit hour toward to their degrees, "Responses of groundwater systems to paleoclimate changes from late Pleistocene to Holocene", "Recharge rates at Yucca Mountain, Nevada: The science, the politics, and the court", and "A new hypothesis for the apparent field-lab discrepancy on feldspar weathering rates", May 12 – 13, 2009

Guest lecture, Okayama University, **Japan**, Freshman course Evolution of the Earth, ~80 students, "the subduction zone factory", June 24, 2005

Invited Lecture, Okayama University, Japan, 25 graduate students, "An Introduction to Thermodynamic and Kinetic Calculations and Modeling", June 2005

Invited Lectures, Beijing Normal University, **China** "An Introduction to Geochemical Modeling," ~20 graduate students, July 4 - 6, 2005

Guest lecture, "Modeling activity coefficient models for saline brine" for E539 Aquatic Chemistry, School of Public and Environmental Affairs, Indiana University – Bloomington, March 31, 2005

Guest lecture, "Modeling surface adsorption" for E539 Aquatic Chemistry, School of Public and Environmental Affairs, Indiana University – Bloomington, April 28, 2005

Guest lectures "Aqueous geochemistry" for G406 An Introduction to Geochemistry, Department of Geological Sciences, Indiana University – Bloomington, September 13, 15, 17, 2004

PEDAGOGICAL STUDIES AND SCHOLARSHIP OF TEACHING AND LEARNING

- Fellow of the ***Freshmen Learning Project***, 2005. Two weeks to work with colleagues to develop strategies on how to teach students in large freshmen classes and important threshold concepts.

- ***Learning Deep Geological Time in Environmental Geology***. On-going research to design and conduct laboratories and teaching methods on the concept of deep geological time to freshmen in the Course G171 Environmental Geology. Collected pre- and post- knowledge survey data, and analyzed

laboratory reports and examinations to evaluate the effectiveness of a lab which encouraged students to visualize the immensity of deep geological time. This is in collaboration with George Rehrey, Brooke Treadwell, and Claudia Johnson and part of my efforts related to the Freshmen Learning Project and the Scholarship of Teaching and Learning

- Simon Brassell, Jeremy Dunning, Bruce Douglas, Claudia Johnson, Jim Brophy, Michael Hamburger, Chen Zhu (Geology) were provided an exploratory research grant to collaborate on the project Teaching Geological Fundamentals: An Assessment of the Effectiveness of Varied Pedagogical Approaches Coupled to Student Learning**.** This research will take a comprehensive look at student learning in 100-level geology courses and develop specific pedagogical strategies for teaching the geological principles that are critical to students' success in those courses. It will also determine which strategies can best accommodate a range of student learning styles when teaching key geological principles. Results from this work will be incorporated into new or redesigned courses that meet general education requirement**s.** Anticipated project outcomes include an assessment of the impact of student learning styles upon the comprehension of geological concepts, the creation of classroom interventions that will assist student learning of those concepts, course revisions based upon a learning outcomes analysis and the creation of an exhibit about geological time.

- Participant in the successful proposal of College 2010 Fall Themester: Sustainability: Global Challenges and local solutions. Bundled G171 Fall with the Themester program. The "Themester" (theme of the semester) is new initiative in the college.

STUDENT AND POST-DOCTORAL TRAINING

Ph.D. Graduate Student Committee, Chaired, (*supported from external grants awarded to Zhu)

*Peng Lu (Ph.D. 2010)
Dissertation Title: "Coupled feldspar dissolution and clay mineral precipitation kinetics and coprecipitation of lead with nano-particles of iron oxyhydroxides"
Currently: Geochemist, Calera Corporation, California
Faye Liu (9/2007-present, Ph.D.),
Dissertation topic: "Numerical simulation of geological carbon sequestration for the Sleipner Project, Norway and in the Mt. Simon sandstone, Indiana"

M.S. Graduate Student Committee, Chaired, (*supported from external grants awarded to Zhu)

*Mathew Reeder (M.S. 2006)
Thesis Title: "Geochemical evolution and in situ reaction rates during a field biostimulation experiment"
Currently: Ph. D. student with Professor Greg Olyphant.
*Anne Hereford (M.S. 2007)
Thesis Title: "Reactions and reaction rates in the regional aquifer beneath the Pajarito Plateau, north-central New Mexico"
Currently: Environmental Scientist at Downstream Strategies, LLC.
Lynn Means (M.S. 2009, co-chaired with Professor Lisa Pratt.)
Thesis Title: "Mineral rings enclosing an evaporitic lake in Warner Valley, Oregon, USA"
Currently: Manager at Indiana Department of Environmental Management
Faye Liu (M.S. May 2010)
Thesis Title: "Antimony speciation and contamination of waters in Xikuangshan Sb mining and smelting area, China"
Currently: Ph. D. student with Chen Zhu.
Poonam Giri (M.S. May 2011)
Thesis topic: "Numerical modeling of palgiocalse feldspar dissolution and secondary mineral precipitation as a function of Al(aq) inCO2 saturated systems"

Post-doctoral Fellow Advisees (under my Direct Supervision)

Zuoping Zheng (2006-07), *Currently*: Senior Environmental Scientist, an environmental consulting firm, San Francisco, California.
Changbing Yang (2006-07), *Currently*: Engineer, Texas Bureau of Economic Geology.
Hiromi Konishi (2004-05), *Currently*: Research Associate, University of Wisconsin - Madison
Victor Bense (2004-05, 50% time), *Currently*: Lecturer, University of East Anglia, Britain

Minor Advisor, Graduate Student Committee

Xin Din (Ph.D., 2010, advisor: Ed Ripley)
Van Pham, University of Oslo, Norway, in progress.

External Dissertation Examiner

Hlanganani Tutu, 2006, Ph.D. dissertation "Determination and modeling of biogeochemical speciation of uranium in gold mine polluted land in South Africa," University of the Witwatersrand, Johannesburg, South Africa

Graduate Student Committee, Member

Dalton Hardisty (M.S., 9/2009- July 2011)

Cristian R. Medina (M.S., Geology, Indiana, 2005-2007, M.S., degree, 9/2007)
Allicia M. Davis (M.S., Geology, Indiana, 2005-2008, M.S., degree, 12/2008)
Ann Kim (Ph.D., Geology, University of Pittsburgh, graduated 2002)
Scott Mest (Ph.D., Geology, University of Pittsburgh, graduated 2003)
Husain Alattass (Ph.D., Department of Mathematics, University of Pittsburgh, graduated 2003)
Hattan Tawfig (Ph.D., Department of Mathematics, University of Pittsburgh, graduated 2003)
Fouzan Al-Fouzan (M.S., Geology, University of Pittsburgh, graduated 2002)
Scott Lewis (M.S., Geology, Old Dominion, graduated 2000)
Stacin Martin (M.S., Geology, Old Dominion, graduated 2001, conducted research with me in 2000 and published the results in *Geochimica*)

Undergraduate Research Experience in my Lab (*supported from external grants)

*Kyle Brown, (B.S. Geology, Indiana, Honor Program, 1/04-5/05), "An ion-exchange experiment on the diffusivity in the clay coating layers on sediment grains"
Kimberly Briggs, (B.S., Chemistry, Indiana, 2/05-5/05), "Coprecipitation of toxic metals with iron oxyhydroxides"
Neal Patel, (B.S., Chemistry, Indiana, 2/05-5/05), "Coprecipitation of toxic metals with iron oxyhydroxides"
*Tracee Imai (Mathematics, non-degree, Pittsburgh, 1/01-12/03), "Feldspar dissolution kinetics in the Santa Fe group, New Mexico"
*Erica Love (B.S., Geology, Pittsburgh, 1/01-5/01), "Groundwater flow under Yucca Mountain, Nevada", co-authored a journal article in *Water Resources Research*
*Adam Nagle (B.S., Geology, Pittsburgh, 1/01-5/02), "Groundwater flow under Yucca Mountain, Nevada"
*Dana McClinsh (B.S., Geology, Old Dominion, 9/98-8/00), "Acid mine drainage in Wyoming"

Outreach, pre-College Student Advisees

Dizhen Ye (high school student, 1999-2003), Research Project: Environmental impacts of bauxite residues, University of Pittsburgh, Now an undergraduate student at MIT

Visiting Scientist

Shaohui Xu, 3/2001-6/2001, from Chinese Academy of Sciences, University of Pittsburgh
Guangyu He, 2/2008 – 4/2008, from Zhejiang University, Indiana University

Graduate, Undergraduate, and High School Student Awards

- Dizhen Ye (high school student), Research Project: "Environmental impacts of bauxite residues," **Second Place**, Pennsylvania Junior Science Academy regional competition, February 7, 2004; **Honorable Mention** from American Chemical Society and **second prize award** in AVASC (Ashtavadhani Vidwan Ambati Subbaraya Chetty) Foundation in the *International Science and Engineering Fair* Portland, Oregon, May 2004; accepted by Cal Tech and MIT in 2006.

- Kyle Brown, (undergraduate student, Honors program), **Honors College Undergraduate Research Grant** at Indiana University – Bloomington, "An ion-exchange experiment on the diffusivity in the clay coating layers on sediment grains." 2004-2005.

- Mathew Reeder, student travel fellowship from the Department of Energy to attend a Principal Investigator meeting, April 18-20, 2005.

- Mathew Reeder, elected to president of Graduate Student Organization, and recipient of the Best Departmental Citizen Award in 2006.

- Anne Hereford, Travel and internship grant, Okayama University, Japan, August 2006.
- Sponsored Megan Hills for an internship at the National Energy Technology Laboratory, Department of Energy, summer 2004.
- Peng Lu, Geological Society of America, Student Research Grant, 2008.
- Faye Liu, Internship at ExxonMobil Upstream Research, 2010.
- Eastern Section of American Association of Petroleum Geologists, travel grants for Liu Yifei and Lu Peng
- Peng Lu, Publication Award, April, 2010,2009, 2008, Department of Geological Sciences, Indiana University
- Faye Liu, Publication Award, April, 2010, Department of Geological Sciences, Indiana University

SERVICE

U.S. GOVERNMENT

- Invited expert public presentation before Advisory Committee on Nuclear Waste, U.S. Nuclear Regulatory Commission, Rockville, Maryland, December 13, 2005

NATIONAL/INTERNATIONAL/PROFESSIONAL/DISCIPLINARY

Associate Editorship

- See page 2

International/national Advisory Committee

- AquaTRAIN, the FP6 Marie Curie Research Training Network on "Geogenic Chemicals in Groundwater and Soils", European Union.
- Member, National Ground Water Association's Carbon Sequestration Task Force, 2007 - 2008

Panel Membership

- Member, proposal review panel, Hydrologic Sciences, National Science Foundation, 2006
- Member, proposal review panel for Groundwater Reactive Transport and Simulation Component of the Scientific Discovery through Advanced Computing (SciDAC) Program, the Office of Advanced Scientific Computing Research, Department of Energy, April 14, 2006.
- Member, proposal review panel for Small Business Innovation Research, U.S. Environmental Protection Agency, 2003.
- Member, proposal review panel for establishing a hazardous mining waste research center, U.S. Environmental Protection Agency, 2001.

Chaired Sessions at National and International Meetings

2011 Co-chair Theme 21 "Hydrogeochemistry and global sustainable water resources", Annual Goldschmidt Conference – the Annual Meeting of the Geochemical Society and European Association of Geochemists, August 14 – 18, 2001, Prague, Czech Republic.

2010 Co-chair, Session 14c "Hydrogeochemical Modeling of Reaction Networks in the Critical Zone", Annual Goldschmidt Conference – the Annual Meeting of the Geochemical Society and European Association of Geochemists, June 13 – 18, Knoxville, Tennessee.

Co-chair, Session 09f "Geochemistry of CO_2 sequestration", Annual Goldschmidt Conference – the Annual Meeting of the Geochemical Society and European Association of Geochemists, June 13 – 18, Knoxville, Tennessee.

2009 co-Convener, American Geophysical Union annual fall meeting, session, "H36, CO_2-Water-Rock Interactions in Geologic Storage Formations and Secondary Migration Sites" San Francisco, December 14 -18, co-sponsored by the Hydrology, Biogeosciences, and Global Environmental Change Divisions.

2008 Chair, ACEME08 - Second International Conference on Accelerated Carbonation for Environmental and Materials Engineering, "CO_2 capture", the University of Rome "La Sapienza", Rome, Italy, Oct 01-03, 2008.

2006 Co-chair, 16th Annual Goldschmidt Conference – the Annual Meeting of the Geochemical Society, "Water-rock interactions in aquifers: reactions, rates, controls" in Melbourne, Australia, August 27-September 1, 2006.

Co-convener, West Pacific Geophysics meeting, American Geophysical union, VGP11 "Fluid Geochemistry associated with CH4 hydrate, CO_2 sequestration and hydrothermal mineralization", Beijing, China, July 24 – 27, 2006.

2005 Convener, Geological Society of America session, "T11. Precipitation, dissolution and redox reaction kinetics in aquifers," Annual Meeting in Salt Lake City, Utah, October 16-19, 2005. Sponsored by the Geochemical Society, the Hydrogeology Division of the Geological Society of America, and the Geobiology and Geomicrobiology Division of the Geological Society of America.

2003 Convener, AGU-EGS-EUG joint assembly, HS38, "Nuclear waste disposal: integrating chemical, hydraulic, and thermal data to determine flow and transport in variably-saturated subsurface media," Nice, France, April 7-11, 2003.

Co-organizer, Geological Society of America session T54, "Geochemical modeling of arsenic speciation, transformation, and reactive transport in groundwater," Annual Meeting in Seattle, October 27-30.

2002 Convener, Geological Society of America session, "Experimental, field, and modeling studies of geological carbon sequestration," Annual Meeting in Denver, Colorado, October 27-30, 2002.

Convener, Pittsburgh Coal Conference, Poster Session, Pittsburgh, PA, September 23-27, 2002.

1999 Convener, Geological Society of America session, "Applications of advanced geochemical modeling to mining-related environmental issues," Denver, Colorado, October 25-28, 1999.

Co-convener, American Geophysical Union annual spring meeting, special session H51E, "Innovative applications of geochemical modeling to groundwater contamination problems," Boston, Massachusetts, May 31-June 4, 1999.

Manuscript and Proposal Review

Journals:

- *Water Resources Research*
- *Journal of Volcanology and Geothermal Research*
- *Journal of Advancement in Environmental Researches*
- *American Mineralogist*
- *Computer & Geosciences*
- *Chemical Geology*
- *Water, Mine, and Environment*
- *Geofluids*
- *Environmental Science & Technology*
- *Environmental & Engineering Geoscience*
- *American Journal of Science*
- *Applied Geochemistry*
- *Hydrogeology*
- *Journal of Society of Petroleum Engineering*

Funding Agencies (approximately 10 proposals from 2004 to 2006 excluding panel work)

- *U.S. National Science Foundation*

- *U.S. Environmental Protection Agency*
- *Sea Grant*
- *Department of Energy*
- *American Chemical Society/Petroleum Research Fund*
- *Israel Science Foundation (ISF)*
- *Swiss National Science Foundation*
- *the Netherlands Organization for Scientific Research*
- *Czech National Science Foundation*
- *The Global Climate and Energy Project (GCEP), Stanford University*

STATE OF INDIANA

- As a collaborator, contributed to the pre-proposal "Eliminating aberrations to enable real-time imaging of working catalysts at 1 Å resolution" to the Department of Energy, May 17, 2006. The effort is to establish a state-of-the art electron microscopic facility in Indiana.

UNIVERSITY

- Member, Faculty Advisory Board for The Alliance for Graduate Education and the Professoriate (AGEP), funded by National Science Foundation (NSF), Indiana University – Bloomington.
- Member, Internal Advisory Group, Center for Environment Health, Medical School
- Member, advisory board, Ph. D minor in sustainable energy science

DEPARTMENT

- Chair, departmental colloquia (2011-)
- Chair, Curriculum Committee (2009-2011)
- Member, Owen Award Committee (2005-2006).
- Member, Associate Instructor Assignment Committee (2005-2007).
- Member, undergraduate curriculum sub-committee (2004-2005).
- Faculty meeting recorder (2004-2005).
- Liaison to university libraries, responsible for revamping earth science subscriptions (2001-2003).
- Host to the Geological Society of America Birdsall-Dreiss Distinguished Lecture at Pitt (April 7, 2003).
- Member, Search committee, environmental scientist (2002-2003).
- Member, Search committee, planetary scientist (2001-2002).
- Member, Search committee, astrobiology (2001-2002).
- Member, Geographic Information System committee (2001-2003).
- Member, Planning and budget committee (2000-2003).
- Member, Computer committee (2000-2003).
- Member, Search committee, planetary scientist (2000-2001).
- Member, Search committee, sedimentologist (2000-2001).
- Member, Search committee, biological oceanographer (1999-2000).
- Member, Graduate program curriculum committee (1999-2000).
- Recruitment of freshmen (1999-2000).
- Member, chair search committee (1998-99).

COMMUNITY OUTREACH

2000 Outreach, guest lecture of "minerals and rocks" at the Cyert Center for Early Childhood Development, Carnegie Mellon University, Pittsburgh, April, 2001.

2001 Outreach, tour guide for the mineral exhibit at the Carnegie Museum of Natural History for children from the Cyert Center for Early Childhood Development, Carnegie Mellon University, Pittsburgh, October 9-10, 2001.

2003 Lecture/seminar “Geological carbon sequestration as a strategy to abate the global warming trend” for the “Minority Access to Research Seminars” at Hampton University, Hampton, Virginia, November 14, 2003.

2006 Guest lecture on water, Summit Elementary School, Bloomington, Indiana, January 2006.

2007 Guest lecture on Water Resources on the Earth, Angelu Elementary School, Hangzhou, China, May 25.

Matthew J. Zwiernik, Ph.D.

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Current Position: (Since 1999)

Professor Animal Science/Zoology/Veterinary Medicine, Michigan State University, Wildlife Toxicology Laboratory, Focusing on multi-year, site-specific, field and laboratory studies in support of ecological risk and natural resource damage assessments. Presently working on Velsicol superfund site (St Louis MI)

Education:

May 1998	**Ph.D. Environmental Toxicology,** Michigan State University, Department of Crop and Soil Science, Institute of Environmental Toxicology, College of Veterinary Medicine, National Science Foundation's Center for Microbial Ecology
December 1989	**Bachelor of Science**, Michigan State University Major: Biochemistry

Activities & Awards

Member of the American Society for Microbiology (1992-2000)

Member of Society of Environmental Toxicology and Chemistry (since 2000)

Expert Consultant to International Joint Commission on Issues of Emerging Contaminants in Great Lakes

Technical Advisor to the Pine River Superfund Community Advisory Committee (Since 2013)
American Society of Microbiology Young Scientist Award 1996

Michigan State University, Center for Environmental Toxicology: 1992-2004

Michigan State University, Institute for Integrative Toxicology 2011-present

Invited speaker at the 12th annual meeting of the Society of Environmental Toxicology and Chemistry, Europe. May 12-16, 2002, Vienna, Austria.

Session Chairman at the 23rd annual meeting of the Society of Environmental Toxicology and Chemistry. November 8-14, 2002, Las Vegas, Nevada.

Keynote speaker at: The International Conference on Ecotoxicology, Trends and Perspectives, Sept. 17-20, 2006, Wisla, Poland.

Keynote speaker at: 3rd International Conference on Environmental Enhancement and Sustainable Development (UN Scientific Committee on Problems in the Environment /SCOPE/ICSU). Aug. 4-8, 2006, Hohhot, Inner Mongolia, China.

Session Chairman at the 30rd annual meeting of the Society of Environmental Toxicology and Chemistry. November 19-23, 2009, New Orleans, Louisiana.

Invited speaker at: 2010 IAGLR Conference, University of Toronto, May 17-21, 2010.

Publications:

Dr. Zwiernik has published over 80 peer reviewed articles, 3 book chapters and greater than 150 reports and abstracts.

Folland, W.R., Newsted, J.L., Fitzgerald, S.D., Fuchsman, P.C., Kern,J., Kurunthachalam K., and Zwiernik,M.J., 2016. Growth and reproductive effects from dietary exposure to Aroclor 1268 in mink (Neovison vison), A serrogate model for marine mammals Environ. Toxicol. Chem. (Vol.35, No.3,pp 604-618)

Folland, W.R., Newsted, J.L., Fitzgerald, S.D., Fuchsman, P.C., Kurunthachalam K., and Zwiernik,M.J., 2016. Enzyme induction and histopathology elucidate AhR vs Non-AhR mediated effects of Aroclor 1268 in American mink (Neovison vison)). Environ. Toxicol. Chem. (Vol.35, No.3,pp 619-634)

Seston, R.M., Powell, D.E., Woodburn, K.B. and Zwiernik, M.J., 2014. Importance of lipid analysis and implications for bioaccumulation metrics. Integ. Environ. Assesment and Management (Vol. 10, No.1, pp 142-144

Fredricks T.B., Zwiernik M.J., Seston R.M., Coefield S.J., Glaspie C.N., Tazelaar D.L., Kay D.P., Newsted J.L., Giesy J.P. 2012. Reproductive success of three passerine exposed to dioxin-like compounds near Midland, Michigan, USA. *Ecotoxicology* 21:1145-1154.

Seston, RM, Giesy, JP, Fredricks, TB, Tzaelaar, DL, Coefield, SJ, Bradley, PW, Roark, SA, Newsted, JL, Kay, DP, Zwiernik, MJ. 2012. Dietary- and tissue-based exposure of belted kingfisher to PCDFs and PCDDs in the Tittabawassee River floodplain, Midland, MI, USA. *Environmental Toxicology and Chemistry* (Vol. 31, No. 5, pp. 1158-1168).

Fredricks T.B., Giesy J.P., Coefield S.J., Seston R.M., Tazelaar D.L., Roark S.A., Kay D.P., Newsted J.L., Zwiernik M.J. 2011. Multiple lines of evidence risk assessment of terrestrial passerines exposed to PCDFs and PCDDs in the Tittabawassee River floodplain, Midland, Michigan, USA. *Human and Ecological Risk Assessment* (17:1, 159-186).

Cohen-Barnhouse, AM, Zwiernik, MJ, Link, JE, Fitzgerald, SD, Kennedy, SW, Giesy, JP, Wiseman, S, Jones, PD, Newsted, JL, Kay, DP, Bursian, SJ. 2011. Developmental and posthatch effects of in ovo exposure to 2,3,7,8-TCDD, 2,3,4,7,8-PeCDF, and 2,3,7,8-TCDF in Japanese quail (*Coturnix japonica*), common pheasant (*Phasianus colchicus*), and white leghorn chicken (*Gallus gallus domesticus*) embryos. *Environmental Toxicology and Chemistry* (Vol. 30, No. 7, pp. 1659-1668).

Seston, RM, Fredricks, TB, Tazelaar, DT, Coefield, SJ, Bradley, PW, Newsted, JL, Kat, DP, Fitzgerald, SD, Giesy, JP, Zwiernik. 2010. Tissue-based risk assessment of great blue heron (*Ardea herodias*) exposed to PCDD/DF in the Tittabawassee River floodplain,

Michigan, USA. *Environmental Toxicology and Chemistry* (Vol. 29, No. 11, pp. 2544-2558)

Coefield S.J., Giesy, J.P., Seston R.M., Fredricks, T.B., Seston, R.M., Nadeau, M.W., Tazelaar, D. L., Moore, J. N., Kay, D. P., Roark, S. A., Zwiernik, M.J. 2010. Ecological risk assessment of great horned owls (*Bubo virginianus*) exposed to PCDDs/PCDFs in the Tittabawassee River floodplain in Midland, Michigan, USA. *Environmental Toxicology and Chemistry* (Vol. 29, No. 10, pp. 2349-2349)

Coefield S.J., Giesy, J.P., Seston R.M., Fredricks, T.B., Seston, R.M., Nadeau, M.W., Tazelaar, D. L., Moore, J. N., Kay, D. P., Roark, S. A., Zwiernik, M.J. 2010. Great horned owl (*Bubo virginianus*) dietary exposure to PCDD/DFs in the Tittabawassee River floodplain in Midland, Michigan, USA. *Environmental Toxicology and Chemistry* (Vol. 29, No. 10, pp. 2350-2362)

Cohen-Barnhouse, A.M., Zwiernik, M.J., Link, J.E., Fitzgerald, S.D., Kennedy, S.W., Giesy, J.P., Wiseman, S., Yang, Y., Jones, P.D., Wan, Y., Collins, B., Newsted, J.L., D. Kay, D., Bursian, S.J. 2010. Sensitivity of Japanese Quail (*Coturnix japonica*), Common Pheasant (*Phasianus colchicus*) and White Leghorn Chicken (*Gallus gallus domesticus*) Embryos to *In Ovo* Exposure to 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin (TCDD), 2,3,4,7,8-Pentachlorodibenzofuran (2,3,4,7,8-PeCDF) and 2,3,7,8-Tetrachlorodibenzofuran (2,3,7,8-TCDF) *Toxicological Sciences* (TOXSCI-10-0391.R1)

Fredricks TB, Zwiernik MJ, Seston RM, Coefield SJ, Plautz SC, Tazelaar DL, Shotwell MS, Bradley PW, Kay DP, Giesy JP. 2010. Passerine exposure to primarily PCDFs and PCDDs in the river floodplains near Midland, Michigan, USA. Archives of Environmental Contamination and Toxicology (58:1048-1064).

Fredricks T.B., Giesy JP, Coefield SJ, Seston RM, Haswell M.M., Tazelaar D.L., Bradley P.W., Moore J.N., Roark S.A., Zwiernik M.J., 2010. Dietary exposure of three passerine species to PCDD/DFs from the Chippewa, Tittabawassee, and Saginaw River floodplains, Midland, Michigan, USA. *Environmental Monitoring and Assessment* (DOI 10.1007/s10661-010-1319-5).

Fredricks T.B., Zwiernik M.J., Seston R.M., Coefield S.J., Stieler C.N., Tazelaar D.L., Kay, D.P., Newsted J.L., Giesy J.P. 2010. Reproductive success of house wrens, tree swallows, and eastern bluebirds exposed to elevated concentrations of PCDFs in a river system downstream of Midland, Michigan, USA. *Environ Toxicol Chem* (DOI 10.1007/s10646-012-0869-4).

Fredricks T.B., Zwiernik M.J., Seston R.M., Coefield S.J., Tazelaar D.L., Roark S.A., Kay, D.P., Newsted J.L., Giesy J.P. 2010. Comparing multiple lines of evidence in a risk assessment of tree swallows exposed to dioxin-like compounds associated with the Tittabawassee River near Midland, Michigan, USA. *Environ Toxicol Chem* (5/22/2010).

Hervé, J.C., Crump, D., Giesy, J.P., Zwiernik, M.J., Bursian, S.J., Kennedy, S.W. 2010. Ethoxyresorufin O-deethylase induction by TCDD, PeCDF and TCDF in ring-necked pheasant and Japanese quail hepatocytes: time-dependent effects on concentration-response curves. *Toxicology in Vitro* 24:13011305.

Hervé, J.C., Crump, D., MacLaren, K.K., Giesy, J.P., Zwiernik, M.J., Bursian, S.J., Kennedy, S.W. 2,3,4,7,8-PeCDF is a more potent cytochrome P4501A inducer than 2,3,7,8-tetrachlorodibenzo-p-dioxin in herring gull hepatocyte cultures. *Environ. Toxicol. Chem.* 29: 2088-2095. DOI:10.1002/ect.255

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Seston, R.M., Fredricks, T.B., Tazelaar, D.L., Coefield, S.J., Bradley, P.W., Newsted, J.L., Kay, D.P., Fitzgerald, S.D., Giesy, J.P., Zwiernik, M.J. 2010. Tissue-based risk assessment of great blue heron (Ardea heroidias) exposed to PCDD/DFS in the Tittabawassee River Floodplain, MI, USA. *Environ. Toxicol. Chem.* (accepted 6/9/10).

Seston, R.M., Giesy, J.P., Fredricks, T.B., Tazelaar, D.L., Coefield, S.J., Bradley, P.W., Roark, S.A., Newsted, J.L., Kay, D.P., Zwiernik, M.J. 2010. Multiple lines of evidence risk assessment of belted kingfisher exposed to PCDFs and PCDDs in the Tittabawassee River Floodplain, Midland, MI, USA. *Environ. Toxicol. Chem* (under review).

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Yang, Y., Wiseman, S., Cohen-Barnhouse, A.M., Wan, Y., Jones, P.D., Newsted, J.L., Kay, D.P., Kennedy, S.W., Zwiernick, M.J., Bursian, S.J., Giesy, J.P. 2010. Effects of in ovo exposure of white-leghorn chicken common pheasant and Japanese quail to 2,3,7,8-tetrachlorodibenzo-p-dioxin and two chlorinated dibenzofurans on CYP1A induction. *Environ. Toxicol. Chem.* 29: 1490-1502.

Moore, J.N., Newsted, J.L., Hecker, M., Zwiernik, M.J., Fitzgerald, S.D., Kay, D.P., Zhang, X., Higley, E.B., Aylward, L.L., Beckett, K.J., Budinsky, R.A., Bursian, S.J., Giesy, J.P. 2009. Hepatic P450 enzyme activity, tissue morphology and histology of mink (Mustela vison) exposed to polychlorinated dibenzofurans. *Arch. Environ. Contam. Toxicol.* 57: 416-425.

Seston, R.M., Zwiernik, M.J., Fredricks, T.R., Coefield, S.J., Tazelaar, D.L., Hamman, D.W., Paulson, J.D., Giesy, J.P. 2009. Utilizing the great blue heron (*ardea herodias*) in ecological risk assessments of bioaccumulative contaminants. *Environ. Monitoring and Assessment* DOI 10.1007/s10661-008-0528-7.

Yang, Y., S. B., Wiseman, J. C., Hervé, R., Farmahin, T. B., Fredricks, P. W., Bradley, A., Cohen-Barnhouse, Y., Wan, P. D., Jones, J. L., Newsted, S. W. Kennedy, M. J., Zwernick, S. J., Bursian, J. P., Giesy, 2009. Impact of chlorinated dioxins and furans on Japanese quail, ring-necked pheasant, and domestic chicken: insights from in ovo studies. Organohalogen Compounds, 71: 703.

Zhang, X., Moore, J.N., Zwiernik, M.J., Hecker, M., Jones, P.D., Newsted, J.L., Bursian, S., Giesy, J.P. 2009. Sequencing and characterization of mixed function monooxygenase genes CYP1A1 and CYP1A2 of mink (*Mustela vison*) to facilitate study on dioxin like compounds. *Journal of Toxicology and Applied Pharmacology* 234: 306-313.

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Zwiernik, M.J., Bursain, S,. Alward, L., Kay, D.P., Moore, J.N., Rolands, C.J., Woodburn, K., Kim, J.S., Giesy, J.P., Budinsky, R.A. 2009. Toxicokinetics of 2.3.7.8-TCDF and 2,3,4,7,8-PeCDF in mink (*Mustela vison)* at ecologically relvant concentrations. *Journal of Tox. Sci.* 105(1): 33-43.

Blankenship, A., Kay, D.P., Zwiernik, M.J., Holem, R.R., Newsted, J.L., Hecker, M., Giesy, J.P. 2008. Toxicity reference values for mink exposed to 2,3,7,8-tetrachlodibenzo-*p*-dioxin (TCDD) equivalents (TEQ). *Ecotox. and Environ. Safety* 69: 325-349.

Strause, K., Zwiernik, M.J., Newsted, J.L., Neigh, A.M., Millsap, S.D., Park, C.S., Moseley, P., Kay, D.P., Bradley, P.W., Jones, P.D., Blankenship, A.L., Sikarskie, J.G. and Giesy, J.P. 2008. Risk assessment methodologies for exposure of great horned owls (*Bubo virginianus*) to PCBs on the Kalamazoo River Michigan, USA. *IEAM* 4(1*)*: 24-40.

Zwiernik, M.J., Kay, D.P., Moore, J.N., Beckett, K.J., Newsted, J.L., Roark, S., Giesy, J.P. 2008. Exposure and effects assessment of resident mink exposed to polychlorinated dibenzofurans and other dioxin-like compounds in the Tittabawassee River basin, Midland, MI, USA on wild mink (*Mustela vison*). *Environ. Toxicol. Chem* 27(10): 2076-2087.

Zwiernik, M.J., Kay, D.P., Moore, J.N., Beckett, K.J., Newsted, J.L., Roark, S., Giesy, J.P. 2008. Non-destructive scat sampling in exposure assessment of mink (*Mustela vison*) exposed to polychlorinated dibenzofurans (PCDFs). *Arch of Environ. Contam. and Toxic*, 55: 529-537.

Neigh, A.M., Zwiernik, M.J., Blankenship, A.B., Joldersma, C.A., Millsap, S.D., Strause, K, Newsted, J., and Giesy, J.P. 2007. Reproductive success of passerines exposed to PCBs through the terrestrial food web of the Kalamazoo River, MI. *Ecotox. Environ.l Safety* 66:107-118.

Strause, K., Zwiernik, M.J., Im, SooK Hyeon, Newsted, J.L., Bradley, P., Blankenship, A., Kay, D.P., Williams L., Giesy, J.P. 2007. Plasma to egg conversion factor for evaluating polychlorinated biphenyl and DDT exposures in great horned owls and bald eagles. *Environ. Toxicol. Chem.* 26:1399-1409.

Strause, K., Zwiernik, M.J., Im, SooK Hyeon, Bradley, P., Moseley, P. Blankenship, A., Kay, D.P., Park, C., Newsted, J., and Giesy, J.P. 2007. Risk assessment of great horned owls (*Bubo virginianus*) exposed to polychlorinated biphenyls and DDT along the Kalamazoo River Superfund Site, Michigan, USA. *Environ. Toxicol. Chem.* 26:1386-1398.

Zwiernik, M.J., Strause, K., Blankenship, A., Kay, D.P., Park, C.S., Giesy, J.P. 2007. Site-specific assessments of environmental risk and natural resource damage based on great horned owls. *Human Ecol. Risk Assess.* 13: 966-985.

Neigh, A.M., Zwiernik, M.J., Blankenship, A.B., Bradley , P.W., Kay, D.P., MacCarroll, M.A., Park, C.S., Jones, P.D., Millsap, S.D., Newsted, J.W., Giesy, J.P. 2006. Exposure and multiple lines of evidence assessment of risk for PCBs found in the diets of Passerine birds at the Kalamazoo River Superfund Site, Michigan. *Human Ecol. Risk Assess.* 12(3): 924-946.

Neigh, A.M., Zwiernik, M.J., Bradley, P.W., Kay, D.P., Park, C.S., Jones, P.D., Newsted, J., Blankenship, A.L., and Giesy, J.P. 2006. Tree swallow (*Tachycineta bicolor*) exposure to polychlorinated biphenyls at the Kalamazoo River Superfund Site, MI. *Environ. Toxicol. Chem.* 25: 428-437.

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Zwiernik, M.J., J.F.Quensen III, and S.A.Boyd. 1998. $FeSO_4$ amendments stimulate extensive anaerobic PCB dechlorination. *Environ. Sci. Technol*. 32:3360-3365.

Book Chapters:

Bursian, S, Newsted, J, and Zwiernik, M. 2012. Polychlorinated biphenyls, polybrominated biphenyls, polychlorinated dibenzo-p-dioxins, and polychlorinated dibenzofurans. Veterinary Toxicology: Basic and Clinical Principles.

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Presentations:

Zwiernik MJ, Folland WR, Moore J, Bursian SJ. Mink jaw lesions, a sensitive indicator

criteria for BUI delisting. *33rd Annual Society of Environmental Toxicology and Chemistry Meeting – North America*, November 11-15, 2012. Long Beach, California, USA.

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Nadeau MW, Folland WR, Grohman CA, Tazelaar DL, Matousek JM, Holem RR, Kubitz JA, Zwiernik MJ. 2011. Using remote video monitoring for cavity-nesting waterfowl to minimize impacts and maximize exposure and productivity associated measurement endpoints. 32nd Annual Society of Environmental Toxicology and Chemistry Meeting. November 13-17, 2011. Boston, Massachusetts, USA.

Kaulfersch, LA, Nadeau, MW, Folland, WR, Grohman, CA, Zwiernik, MJ. Studying the exposure and health of avian species residing within selected areas of Marquette County, MI. 6th Annual Animal Science Graduate Research Forum. September 23, 2011. Michigan State University, East Lansing, Michigan, USA.

Nadeau MW, Folland WR, Grohman CA, Tazelaar DL, Matousek JM, Holem RR, Kubitz JA, Zwiernik MJ. Using remote video monitoring for cavity-nesting waterfowl to

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