Columbia Center for Children's Environmental Health (CCCEH) Studies with 1998-2006 Inner City Cohort

Study Title	Cohort	Environmental Hazard Measured	Endpoint	Link
The Challenge of Preventing Environmentally Related Disease in Young Children: Community-Based Research in New York City (Perera et al. 2002)	First 250 pregnant women enrolled in the cohort	1) polycyclic aromatic hydrocarbons (PAHs); 2) environmental tobacco smoke(ETS);3) pesticides; 4) nonpersistent pesticides; 5) pest allergens; 6) allergic sensitization;7) respiratory symptoms;8) lead and mercury; 9) Organochlorines	Detectable levels; Summary of initial samples analyzed	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/perera2002.pdf"]
Phthalate Diester Levels in Personal Air Samples During Pregnancy in Two Urban Populations (Adibi et al. 2002)	CCCEH study cohort (no other details given). + Krakow cohort	Phthalates	Presence of 6 phthalate isomers (100% detection): DEHP, BBzP, DBP, DEP, DIBP and DCHP.	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/AdibiIndoorAir2002.pdf"]
Deteriorated Housing Contributes to High Cockroach Allergen Levels in Inner-City Households (Rauh, et al. 2002)	76 Dominican and 56 African American women during their third trimester	Cockroach Allergens-- Bla g 2 levels >2 U/g--proposed threshold for allergic sensitization.	Impact of housing dilapidation on allergen levels	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/rauh2002.pdf"]
Residential Pesticide Use during Pregnancy among a Cohort of Urban Minority Women (Whyatt et al. 2002)	All 72 women fully enrolled between September 1998 and and November 1999. The proportion who reported that pest control measures were used in the home during pregnancy is similar to the proportion of women reporting use of pest control measures in the full cohort ($\chi 2 = 0.05$, $p = 0.8$).	Air concentrations of 21 pesticides, including chlorpyrifos, diazinon cis- and trans- permethrin, propoxur and bendiocarb (2–4	Air concentration in (ng/m3)per day; EPA reference dose (RfD) of 0.00009 mg/kg/day for inhalation exposures to diazinon (of any duration) provided in example	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/whyatt2002.pdf"]
Risk for Asthma in 1-Year-Old Infants Residing in New York City High-Risk Neighborhoods (Meyer et.al, 2003)	92 infants who were older than age 12 months and had complete information on four quarterly interviews	Asthma risk index measured based on recurrent wheezing along with eczema or parental history of asthma high rates of poverty and environmental exposures to allergens and pollution		[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/meyer2003.pdf"]

Effects of Transplacental Exposure to Environmental Pollutants on Birth Outcomes in a Multiethnic Population (Perera, 2003)	Subjects included were those with valid prenatal personal monitoring data on PAHs, cord or maternal blood samples, complete questionnaire data, and birth outcome data. Seven subjects with plasma cotinine concentrations > 25 were excluded to rule out active smoking.	ETS exposure measured as plasma cotinine levels > 0.05 and ≤ 25 ng/mL—exposure 48 hours prior to delivery); PAH air concentration measures(ng/m3); & Chlorpyrifos(CPF) as covariate measured in maternal and blood cord samples (CPF selected as the most commonly detected pesticide and highly correlated with other pesticides in plasma samples)	Birth outcomes: decreased birth weight and length, head circumference	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/perera2003.pdf"]
Contemporary-Use Pesticides in Personal Air Samples during Pregnancy and Blood Samples at Delivery among Urban Minority Mothers and Newborns (Whyatt, et al., 2003)	230 women-newborn pairs, with the women monitored from September 1998 and May 2001, with all but two women monitored after 1998. The monitoring took place 6.4 ± 3.5 weeks before delivery; 27% of the subjects were monitored within 1 month of delivery.	Detection of 29 pesticides in plasma and personal air samples	Summary of results	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/whyatt2003.pdf"]
Distribution and Determinants of Mouse Allergen Exposure in Low-Income New York City Apartments, Chew et al. (2003)	221 women	Presence of mouse urinary protein (MUP) in prenatal and postnatal dust samples; The lower limit of detection (LOD) for mouse urinary protein (MUP) was 0.004 µg/mL.	Mouse allergen exposure	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/chew2003.pdf"]
Prenatal Exposures to Phthalates among Women in New York City and Krakow, Poland (Adibi et al. 2003)	60 women from CCCEH study and separate Krakow cohort	Phthalates in air monitoring samples and spot urine samples	Human exposure to phthalates during pregnancy in a range of personal environments	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/adibi2003.pdf"]
Dose-Response Relationship between Maternal Involuntary Tobacco Smoking and Various Birth	285 women from CCCEH cohort	Weighted number of cigarettes smoked daily by others at home during last 2 months of pregnancy	Birth outcomes: decreased weight/length and head circumference	N/A --need to search PubMed

Outcomes (Whyatt, et al., 2004)				
Developmental Effects of Exposure to Environmental Tobacco Smoke and Material Hardship among Inner-City Children (Rauh et al., 2004)	226 infants from cohort delivered between April 1998 and October 2002	ETS exposure measured as plasma cotinine levels > 0.05 and ≤ 25 ng/mL—exposure 48 hours prior to delivery); PAH—measured in detectable levels from air samples; And material hardship—using measures of poverty, satisfaction/dissatisfaction with living conditions (five-point scale, ranging from very satisfied to very dissatisfied), and the Psychiatric Epidemiologic Research Instrument Demoralization Scale, a standardized measure of nonspecific psychological distress	2-year cognitive development using Bayley Scales of Infant Intelligence to generate a mental development index (MDI)	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/rauh2004.pdf"]
Biomarkers in Maternal and Newborn Blood Indicate Heightened Fetal Susceptibility to Procarcinogenic DNA Damage (Perera, et.al, 2004)	265 mother–newborn pairs from cohort	PAHs & ETS in air concentrations and maternal/umbilical cord blood samples	susceptibility of the fetus to DNA damage and reduced ability to clear ETS constituents	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/perera2004b.pdf"]
Prenatal Insecticide Exposures and Birth Weight and Length among an Urban Minority Cohort (Whyatt, et.al)	314 mother–newborn pairs in the cohort	Diazinon (OP) and propoxur (NMC) in air concentrations and maternal/umbilical cord blood samples	Expanded analysis of pesticide impacts on birth weight and length to include diazinon and propoxur and larger sample size	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/whyatt2004.pdf"]
Molecular Evidence of an Interaction Between Prenatal Environmental Exposures and Birth Outcomes in a Multiethnic Population (Perera, et al., 2004)	214 mother–newborn pairs in the cohort	ETS (plasma/blood samples) and environmental PAHs using BaP-DNA adducts as a molecular dosimeter	Birth outcomes: decreased weight/length and head circumference	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/perera2004.pdf"]

Predictors of Personal Polycyclic Aromatic Hydrocarbon Exposures among Pregnant Minority Women in New York City (Tonne, et.al, 2004)	344 women in cohort	Measured PAH exposures and questionnaire variables including time spent outdoors, residential heating, and indoor burning of incense	personal exposures to PAH	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/tonne2004.pdf"]
A Summary of Recent Findings on Birth Outcomes and Developmental Effects of Prenatal ETS, PAH, and Pesticide Exposures (Perera, et.al, 2004)	214 subjects with adduct measurements in umbilical cord blood samples and complete questionnaire and medical record data used as covariates in the multi-regression models. Rauh et al. utilized data from 226 subjects from the cohort, with developmental outcomes measured at 24 months postnatally. Whyatt et al. analyzed data on birth outcomes and insecticide levels in blood samples collected at delivery from 314 newborns.	PAH exposure- estimated by DNA adducts in white blood cells formed by B[a]P, a representative PAH. (prenatal measurements are air concentrations) ETS-estimated by questionnaire data and plasma concentrations Pesticides-measured in maternal and umbilical cord bloods	Birth outcomes: decreased weight/length and head circumference	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/perera2005.pdf"]
Polycyclic aromatic hydrocarbons, environmental tobacco smoke, and respiratory symptoms in an inner city birth cohort (Miller et al., 2004)	303 mother-newborn pairs from cohort	Prenatal PAH exposure (air concentrations) + Postnatal ETS-estimated by questionnaire data and plasma concentrations	Respiratory symptoms (cough and wheeze) in 1-2 year old children	[HYPERLINK "http://ccceh.org/scientific-papers/polycyclic-aromatic-hydrocarbons-environmental-tobacco-smoke-and-respiratory-symptoms-in-an-inner-city-birth-cohort"]
Chromosomal Abberrations in Cord Blood Are Associated with Prenatal Exposure to Carcinogenic Polycyclic Aromatic Hydrocarbons (Bocskay, et al. 2005)	60 newborns randomly chosen from the total 600 mother-newborn pairs	Prenatal PAH exposure(air samples and questionnaire) + postnatal PAH-DNA adducts in umbilical cord blood	chromosomal aberrations	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/bocskay2005.pdf"]
Biomarkers in assessing residential insecticide	Total 571 mother-infant pairs enrolled between	Pesticides exposure-measured in air concentrations (prenatal) and	Measures of fetal growth=date of delivery, gestational age at birth,	[HYPERLINK "http://ccceh.org/wp-

exposures during pregnancy and effects on fetal growth (Whyatt, et al., 2005)	January 1998 and January 2004	maternal and umbilical cord bloods (postnatal)	infant sex, birth weight, length, head circumference, infant malformations, Apgar scores, maternal height, pre-pregnancy weight, total weight gain, complications of pregnancy and delivery, and medications used during pregnancy	content/uploads/2012/02/whyatt2005.pdf"]
Prevalence of Allergy Symptoms and Total IgE in a New York City Cohort and Their Association with Birth Order (Goldstein, et al., 2005)	Measurements of total serum IgE were available from 321 of (616 at time) the mothers, 291 cord blood samples from the infants, 244 of the children at 24 months and 155 of the children at 36 months.	Allergy symptoms-=Total serum IgE from maternal and cord blood + postnatal wheeze, itchy eyes or eczema	Association between birth order and allergy symptoms in first 3 years of life	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/goldstein2005.pdf"]
Endotoxin in inner-city homes: Associations with wheeze and eczema in early childhood (Perzanowski, et al.l, 2005)	301 children from cohort	Endotoxin exposure-measure in bedroom floor dust at 12 months (or 36 months for partial cohort)	Atopy in childhood (wheeze, allergic rhinitis symptoms, and eczema)	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/perzanowski2006.pdf"]
Effect of Prenatal Exposure to Airborne Polycyclic Aromatic Hydrocarbons on Neurodevelopment in the First 3 Years of Life among Inner-City Children (Perera, et.al, 2006)	183 children 3 years of age who had valid prenatal PAH monitoring data, all three annual developmental assessments, prenatal questionnaire data on ETS, measurements of cotinine in maternal and cord blood samples ≤ 25 ng/mL (to exclude the possibility that the mother was an active smoker), and CPF level in cord blood	Prenatal PAH	Behavioral development (Bayley Scales of Infant Development–Revised (BSID-II) to assess cognitive and psychomotor development at 12, 24, and 36 months of age (Bayley 1993) + Child Behavior Check List for behavior problems	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/perera2006.pdf"]

The Economic Impact of Early Life Environmental Tobacco Smoke Exposure: Early Intervention for Developmental Delay	226 infants from the CCCEH cohort who had reached 24 months of age at the time of the analysis and had complete data on all measures	Prenatal ETS exposure	Estimated annual cost of ETS-related developmental delay	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/miller2006.pdf"]
Impact of Prenatal Chlorpyrifos Exposure on Neurodevelopment in the first three years of life among inner-city children (Rauh, et.al, 2006)	254 children from cohort through the first 3 years of life	Chlorpyrifos detected in umbilical cord blood samples	Behavioral development (Bayley Scales of Infant Development–Revised (BSID-II) to assess cognitive and psychomotor development at 12, 24, and 36 months of age (Bayley 1993) + Child Behavior Check List for behavior problems Each scale provides a developmental quotient (raw score/chronological age), which generates a continuous Mental Development Index (MDI) and a corresponding Psychomotor Development Index (PDI).	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/rauh2006.pdf"]
Within- and Between-Home Variability in Indoor-Air Insecticide Levels during Pregnancy among an Inner-City Cohort from New York City (Whyatt, et al., 2007)	102 women from the CCCEH cohort who were not employed outside the home at the time of enrollment so as not to confound pesticide exposures in the home with pesticide exposures in the workplace	indoor air monitoring was conducted continuously beginning during the 32nd week of pregnancy until delivery. Two-week integrated indoor air samples were collected every 2 weeks throughout the monitoring period.	within- and between-home variability in indoor-air insecticides over the final 2 months of pregnancy	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/whyatt2007.pdf"]

Effects of winter birth season and prenatal cockroach and mouse allergen exposure on indoor allergen–specific cord blood mononuclear cell proliferation and cytokine production (Lendor, et al., 2008)	350 women-newborn pais in cohort with cord blood samples	prenatal cockroach, dust mite, and mouse allergens in settled dust on indoor allergen–specific cord blood mononuclear cell (CBMC) proliferation, TH2 production, and cord blood IgE concentration	the effects of winter birth (January 1 to March 31) and prenatal cockroach and mouse allergens in settled dust on indoor allergen–specific cord blood mononuclear cell (CBMC) proliferation, TH2 production, and cord blood IgE concentration	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/lendor2008.pdf"]
Characterization of Phthalate Exposure among Pregnant Women Assessed by Repeat Air and Urine Samples (Adibi, et al., 2008)	246 women from cohort	phthalate metabolite concentrations in spot urine samples (28 women had repeat samples over 6-wk period)+ 48-hr personal air samples (n = 96 women) and repeated indoor air samples (n = 32 homes) for five phthalate diesters	variability in phthalate concentrations in pregnant women; and variabilty in measures of phthalates in their external environment (i.e., indoor air).	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/adibi2008.pdf"]
Prenatal Exposure to Airborne Polycyclic Aromatic Hydrocarbons and Risk of Intrauterine Growth Restriction (Choi, et al., 2008)	Participants with personal air monitoring data and a singleton birth, and newborns whose cord serum cotinine concentration was ≤ 25 ng/mL, resulting in a sample size of 624 women	PAH personal air concentrations	intrauterine growth restriction, including small size for gestational age (SGA), and preterm delivery	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/choi2008.pdf"]
Cat ownership is a risk factor for the development of anti-cat IgE but not current wheeze at age 5 years in an inner-city cohort (Perzanowski,et al.., 2008)	Children in cohort-Sera collected from children at ages 2 (n 5 323), 3 (n 5 336), and 5 (n 5 242) y	IgE and IgG antibodies were measured in sera collected from the mother immediately postpartum and from the child at ages 2, 3, and 5 years	anti-cat IgE development	[HYPERLINK "http://ccceh.org/scientific-papers/cat-ownership-is-a-risk-factor-for-the-development-of-anti-cat-ige-but-not-current-wheeze-at-age-5-years-in-an-inner-city-cohort"]

Changes in Pest Infestation Levels, Self-Reported Pesticide Use, and Permethrin Exposure during Pregnancy after the 2000–2001 U.S. Environmental Protection Agency Restriction of Organophosphates	subjects enrolled into the cohort between 2000 and 2006 based on availability of questionnaire and air monitoring data.	Personal and indoor air samples; questionnaire on pest sightings and usage	Measures of permethrin and PBO post-restrictions to residential uses of chlorpyrifos and diazinon	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/williams2008.pdf"]
Spatial and Temporal Trends of Polycyclic Aromatic Hydrocarbons and Other Traffic-Related Airborne Pollutants in New York City (Narvaex et al., 2008)		PAHs in air sampling		[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/narvaez2008.pdf"]
Anti-cockroach and anti-mouse IgE are associated with early wheeze and atopy in an inner-city birth cohort (Donahue, et al., 2008)		Anti-cockroach, anti-mouse, and anti–dust mite IgE levels in serum samples of 2 and 3 year olds		[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/donohue2008.pdf"]
A Biomarker Validation Study of Prenatal Chlorpyrifos Exposure within an Inner-City Cohort during Pregnancy (Whyatt, et al., 2008)	102 African-American and Dominican women selected from the CCCEH cohort (enrolled later in cohort 2001-2004)	Indoor and personal air sampling, maternal spot urine samples (measure is presence of TCPy, most commong chlorpyrifos-methyl metabolite), maternal and cord blood samples, newborn meconium samples	chlorpyrifos biomarkers before and after end of chlorpyrifos residential use; also variability in TCPy levels in repeat spot urine samples collected from women during pregnancy.	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/whyatt2009.pdf"]

Relation of DNA Methylation of 59-CpG Island of ACSL3 to Transplacental Exposure to Airborne Polycyclic Aromatic Hydrocarbons and Childhood Asthma (Perera, et al.)	20 cohort children	umbilical cord white blood cell (UCWBC) DNA	Childhood asthma	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/perera2009b.pdf"]
Prenatal Di(2-ethylhexyl)Phthalate Exposure and Length of Gestation Among an Inner-City Cohort (Whyatt, et al., 2009)	311 women-newborn pairs from cohort	Prenatal DEHP exposure measured in personal air/and or sport urine samples during third trimester	Gestation length	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/whyatt2010.pdf"]
Prenatal Airborne Polycyclic Aromatic Hydrocarbon Exposure and Child IQ at Age 5 Years (Perera, et al., 2009)	249 of children in cohort (of 392) who spoke English	Children from cohort-in utero through age 5	IQ-- using the Wechsler Preschool and Primary Scale of Intelligence-Revised.	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/perera2009.pdf"]
Ambient Metals, Elemental Carbon, and Wheeze and Cough in New York City Children through 24 Months of Age (Patel, et al., 2009)	653 (90% of the fully enrolled) provided follow-up data and were included in this study.	ambient fine particulate matter (PM2.5)--individual metal constituents of ambient PM2.5, including nickel (Ni), vanadium (V), and zinc (Zn) measured by the New York State Department of Environmental Conservation between 1999 and 2007for two sites in the Bronx that were located in the study area: New York Botanical Gardens (NYBG) and Intermediate School 52 (IS52).	Wheeze and cough symptoms through 24 months	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/patel2009.pdf"]

Transcriptional Biomarkers of Steroidogenesis and Trophoblast Differentiation in the Placenta in Relation to Prenatal Phthalate Exposure (Adibi, et al., 2010)	54 of 148 participants from cohort with placentas collected at delivery between May 2002 and June 2005 and with both maternal urine samples and medical record data were included this study.	Placenta (RNA analysis on samples), maternal urine samples,	altered human placental steroidogenesis and trophoblast differentiation as measured by markers of mRNA transcription	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/adibi-2010.pdf"]
Prenatal acetaminophen exposure and risk of wheeze at age 5 years in an urban low-income cohort (Perzanowsi, et al., 2010)	714 children from cohort-fully enrolled with information on wheeze at ages 1, 2, 3, and 5 years	Use of acetaminophen, ibuprofen and aspirin during pregnancy was ascertained in the third trimester. Mothers were specifically queried on "Tylenol", "Advil/Motrin", "cough medicine", "cold medicine", "aspirin" and "other". For each medication the number of days of use in each trimester was recorded.	Current wheeze at age 5 years was defined a priori as the primary end point	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/PerzanowskiThorax2010.pdf"]
Gene-environment interactions on mental development in African American, Dominican, and Caucasian Mothers and Newborns (Wang, et al., 2010)	CCEH cohort + Krakow cohort (547 newborns and 806 mothers from three different ethnic groups across both cohorts)	PAH exposure during pregnancy (prenatal air samples and maternal/cord blood samples)	21 polymorphisms or haplotypes in genes on child mental development index, as measured by Bayley Scales	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/nihms150189.pdf"]
Higher Fish Consumption in Pregnancy May Confer Protection against the Harmful Effect of Prenatal Exposure to Fine Particulate Matter (Jedrychowski, et al., 2010)	481 from cohort.	Measurements of particulate matter less than 2.5 m in size (PM 2.5) were carried out by personal air monitoring over 48 h during the second trimester of pregnancy.; fish consumption measured based on questionnaire answers on diet	Birth weight	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/anm0056-0119.pdf"]

Chlorpyrifos Exposure and Urban Residential Environment Characteristics as Determinants of Early Childhood Neurodevelopment (Lovasi, et al., 2011)	266 children--Follow up to previous study, same cohort used. The retention rate at the 3-year follow-up was 83%; of 327 with completed developmental assessment from cohort, only 266 also had Chlorpyrifos exposure data available	Maternal and umbilical cord plasma samples were used to measure chlorpyrifos exposure	Bayley Scales used to generated quotients for PDI and MDI	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/lovasi2011.pdf"]
Urinary and air phthalate concentrations and self-reported use of personal care products among minority pregnant women in New York City (Just, et al., 2010)	186 women from cohort (2003-2006)	48-hour personal air sample was collected and analyzed for DEP and DnBP; a maternal spot urine sample was collected and analyzed for their monoester metabolites, monoethyl phthalate (MEP) and mono-n-butyl phthalate (MnBP); And questionnaire data on 7 product categories (deodorant, perfume, hair spray, hair gel, nail polish/polish remover, liquid soap/body wash, lotion/mist)	Source of DEP exposure	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/just2010.pdf"]
Assessment of Benzo(a)pyrene-equivalent Carcinogenicity and Mutagenicity of Residential Indoor versus Outdoor Polycyclic Aromatic Hydrocarbons Exposing Young Children in New York City (Jung, et al., 2010)	260 children from cohort	two-week integrated indoor and outdoor PAH samples at each of 260 homes	Levels of (BaP-TEQ) and (BaP-MEQ) across heating and non-heating seasons	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/Jung2010b.pdf"]

Polycyclic aromatic hydrocarbon metabolite levels and pediatric allergy and asthma in an inner-city cohort (Miller, et al. 2010)	222 children from cohort who had reached age 5	PAH in urinary samples	Allergy/asthma at 5 years	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/MillerPedAllergyImmunol2010.pdf"]
Characterization of residential pest control products used in inner city communities in New York City (Horton, et al. , 2010)	Non-cohort	Questionnaire of licensed pesticide applicators	Pyrethroid use following cancellation of residential uses of Chlorpyrifos and diazinon	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/horton2011.pdf"]
Cord blood versus age 5 mononuclear cell proliferation on IgE and asthma (Chang, et al., 2010)	a sample based on the number of children from whom a blood sample was obtained (i.e. any time point from cord blood through age 5 years) was selected for inclusion (n = 609). For longitudinal analysis, a subset (n = 359) inclusive of all children for whom cord blood was collected and data were available for prospective analysis at age 2, 3 and 5 year was studied. For cross-sectional analysis, another overlapping subset (n = 352) inclusive of all children for whom age 5 blood was collected was assessed for concurrent (age 5) outcomes symptoms.	Dust samples were vacuumed separately from kitchens and mothers' beds prenatally and were analyzed for mouse urinary protein (MUP), dust mite (Der f 1), and cockroach (Bla g 2) allergens by enzyme-linked immunosorbent assay (ELISA); cord blood and blodd samples 2,3, and 5 years of age	Asthma symptoms	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/chang2010.pdf"]

Sources of greater fetal vulnerability to airborne polycyclic aromatic hydrocarbons among African Americans (Perera, et al., 2010)		Prenatal PAH exposure; Material hardship	Birthweight and fetal growth ratio	[HYPERLINK "http://ccceh.org/scientific-papers/sources-of-greater-fetal-vulnerability-to-airborne-polycyclic-aromatic-hydrocarbons-among-african-americans"]
Fractional Exhaled Nitric Oxide Exchange Parameters Among 9-Year-Old Inner-City Children (Rosa, et al., 2011)	106 children from cohort who had reached 9 years of age	Feasibility of using multiple flow offline fractional exhaled nitric oxide (FeNO) collection method		[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/rosa2010.pdf"]
Bulky DNA Adducts in White Blood Cells: A Pooled Analysis of 3,600 Subjects				[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/riccerri2010.pdf"]
Effects of Heating Season on Residential Indoor and Outdoor Polycyclic Aromatic Hydrocarbons, Black Carbon, and Particulate Matter in an Urban Birth Cohort (Jung, et al., 2010)	334 5-6 year old children from cohort	Residential indoor and outdoor air levels of polycyclic aromatic hydrocarbons (PAH), black carbon (measured as absorption coefficient [Abs]), and fine particulate matter measured	Indoor/outdoor PAH ratios	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/jung2010.pdf"]
Prenatal exposure to polycyclic aromatic hydrocarbons, environmental tobacco smoke and asthma (Rosa, et al., 2010)	5-6 year olds in cohort. Follow-up to previous study	Prental PAH and postnatal ETS exposures	asthma and seroatopy at ages 5-6 years	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/rosa2011.pdf"]

Prenatal PAH exposure is associated with chromosome-specific aberrations in cord blood (Orjuela, et al., 2010)	48 cord bloods (1500 metaphases per sample) from newborns monitored prenatally for airborne PAH exposure in the Columbia Center for Children's Environmental Health cohort	Prental PAH exposure	Aberrations in chromosomes 1–6, 11, 12, 14 and 19	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/OrjuelaMutRes2010.pdf"]
Cost of Developmental Delay from Prenatal Exposure to Airborne Polycyclic Aromatic Hydrocarbons (Weiland, et al. 2011)		PAH exposure		[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/01/WeilandJHCPU2011.pdf"]
Effects of Prenatal and Perinatal Exposure to Fine Air Pollutants and Maternal Fish Consumption on the Occurrence of Infantile Eczema (Jedrychowski, et al., 2011)	469 women in cohort	prenatal exposure to fine particulate matter and (PM 2.5 1 53.0 g/m 3) and postnatal ETS, and maternal fish intake of more than 205 g/week	Infantile eczema	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/JedrychowskiAlleryImmun2011.pdf"]
Impact of Prenatal Exposure to Piperonyl Butoxide and Permethrin on 36-Month Neurodevelopment (Horton, et al., 2011)	Developmental outcome measures and 1 or more of the pesticide dosimeters were available for 348 subjects. The numbers of subjects included in multivariate analyses were: (1) 342 subjects for permethrin in personal air; (2) 272 subjects for permethrin in plasma; and (3) 230 subjects for PBO.	Prenatal exposure to permethrin and PBO in personal air samples and maternal/umbilical cord plasma	Neurodevelopment-- Bayley Mental Developmental Index and the Psychomotor Developmental Index.	[HYPERLINK "http://ccceh.org/wp-content/uploads/2011/11/HortonPediatrics2011.pdf"]
PAH-DNA adducts in Cord Blood and Child Behavior	215 children from cohort	PAH-DNA and other bulky aromatic adducts in umbilical cord white blood cells; urine samples	Child behavior using the Child Behavior Checklist (CBCL)	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/Perera2011NYCPAHbehavior.pdf"]

Relationship between maternal demoralization, wheeze, and immunoglobulin E among inner-city children (Reyes, et al., 2011)	279 children from cohort fully enrolled	Maternal demoralization (ie, psychological distress) measured in questionaires; IgE measured in cord blood then serum blood samples at ages 2,3,and 5	Childhood wheeze and indoor allergen specific IgE	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/ReyesAAAI2011.pdf"]
7-Year Neurodevelopmental Scores and Prenatal Exposure to Chlorpyrifos, a Common Agricultural Pesticide (Rauh, et al., 2011)	265 children in cohort, age 7	umbilical cord blood	7 year neurodevelopment using the Wechsler Intelligence Scales for Children (WISC-IV).	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/01/RauhEHPApril2011_2.pdf"]
Neonatology and the Environment: Impact of Early Exposure to Airborne Environmental Toxicants on Infant and Child Neurodevelopment (Rauh, et al., 2010)			Summary of PAH, ETS, and pesticide exposure and childhood neurological development cohort findings	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/rauh2010.pdf"]
Effects of Floor Level and Building Type on Residential Levels of Outdoor and Indoor Polycyclic Aromatic Hydrocarbons, Black Carbon, and Particulate Matter in New York City (Jung, et al., 2011)	339 children were enrolled from the parent CCCEH cohort study and who were 5–6 years old during the periods between October 2005 and July 2010,	AH, BC and PM2.5 concentrations in air samples		[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/Jung2011.pdf"]
Traffic density and stationary sources of air pollution associated with wheeze, asthma, and immunoglobulin E from birth to age 5 years among New York City children (Patel, et al., 2011)	593 children from cohort. Prenatally, through age 5 years.	Spatial data on the proximity and density of roadways and built environment for a 250 m buffer around subjects' homes	wheeze, asthma, total IgE, and allergen-specific IgE	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/02/PatelEnvRes2011.pdf"]

Maternal Prenatal Urinary Phthalate Metabolite Concentrations and Child Mental, Psychomotor and Behavioral Development at Age Three Years (Whyatt, et al., 2011)	319 fully enrolled women from cohort	Mono-n-butyl phthalate (MnBP), mono-benzyl phthalate (MBzP), mono-isobutyl phthalate (MiBP) and 4 di-2-ethylhexyl phthalate metabolites were measured in a prenatal spot urine sample	mental, motor and behavioral development in children at age 3 years (Bayley Scales + CBCL)	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/01/ehp.1103705.pdf"]
Prenatal Exposure to Polycyclic Aromatic Hydrocarbons, Benzo[a]Pyrene-DNA Adducts and Genomic DNA Methylation in Cord Blood (Herbstman, et al., 2012)	164 randomly selected participants from the CCCEH cohort of 725 women with stored cord blood DNA, half with prenatal PAH exposure levels above and half with exposures below the population median	Prenatal PAH exposures	global methylation levels in umbilical cord white blood cells	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/03/Prenatal-Exposure-to-Polycyclic-Aromatic-Hydrocarbons-BenzoaPyrene-DNA-Adducts-and-Genomic-DNA-Methylation-in-Cord-Blood.pdf"]
Reproducibility and intraindividual variation over days in buccal cell DNA methylation of two asthma genes, interferon g (IFNg) and inducible nitric oxide synthase (iNOS) (Torrone, et al., 2012)	34 children from cohort ages 9-10	Repeat buccal samples were collected 4 to 7 days apart	Variability of DNA methylation in promoter regions of two asthma genes, inducible nitric oxide synthase (iNOS) and interferon g (IFNg),	[HYPERLINK "http://ccceh.org/scientific-papers/reproducibility-and-intraindividual-variation-over-days-in-buccal-cell-dna-methylation-of-two-asthma-genes-interferon-g-ifng-and-inducible-nitric-oxide-synthase-inos"]
Using latent class growth analysis to identify childhood wheeze phenotypes in an urban birth cohort (Chen, et al., 2012)	689 children ages 3 through 108 months	repeat questionnaire data on wheeze to model the effects of time invariant (maternal asthma, ethnicity, prenatal environmental tobacco smoke, and child sex) and time varying (cold/influenza [flu] season) risk factors on prevalence of wheeze in each phenotype.	Identification of four wheezing phenotypes: never/infrequent (47.1%), early-transient (37.5%), earlypersistent (7.6%), and late-onset (7.8%)	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/05/chen2012.pdf"]

Aromatic Hydrocarbon (PAH) Exposure and Child Behavior at age 6-7 (Perera, et al., 2012)	253 of children from cohort who read aged 7, had taken CBCL, and also had available data on explanatory or potential confounding variables of interest	prenatal PAH exposure, whether characterized by personal air monitoring (greater than the median of 2.27 ng/m3) or maternal and cord adducts	child behavior at ages 6-7 assessed using the Child Behavior Checklist (CBCL)	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/03/Prenatal-Polycyclic-Aromatic-Hydrocarbon-PAH-Exposure-and-Child-Behavior-at-age-6-7.pdf"]
Association of Childhood Obesity With Maternal Exposure to Ambient Air Polycyclic Aromatic Hydrocarbons During Pregnancy (Rundle, et al., 2012)	453 of the children from cohort at age 5 years and from 371 of the children at age 7 years, with body weight and composition data	Prenatal PAH exposure	childhood body size.	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/05/rundle2012.pdf"]
Prenatal Bisphenol A Exposure and Child Behavior in an Inner City Cohort (Perera, et al., 2012)	198 children from cohort ages 3-5 years old with prenatal BPA measurements and CBCL data	Prenatal spot urine samples	child behavior between 3-5 years 10 using the Child Behavior Checklist (CBCL)	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/05/perera2012EHPBPA.pdf"]
Brain anomalies in children exposed prenatally to a common organophosphate pesticide (Rauh, et al., 2012)	40 children from cohor with 7-year of cognititve testing. Twenty high-exposure children (upper tertile of CPF concentrations in umbilical cord blood) were compared with 20 low-exposure children on cortical surface features; all participants had minimal prenatal exposure to ETS and PAHs	Chlorpyrifos measured in cord blood	brain morphology using magnetic resonance imaging and IQ	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/05/rauh2012.pdf"]

Childhood exposure to fine particulate matter and black carbon and the development of new wheeze between ages 5 and 7 in an urban prospective cohort (Jung et al., 2012)	408 children from cohort at ages 5–6 years old	urban fine particulate matter (PM2.5) and soot-black carbon (soot-BC)-residential monitoring	new development of asthma or allergy	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/05/jung2012EI.pdf"]
Urinary napthol metabolites and chromosomal aberrations in 5 yr old children (Orjuela, et al., 2012)	222 children who reached their 5th birthday between February 2005 and December 2007	Blood samples, spot urine samples and PAH exposure questionaires	the occurrence and frequency of Chromosomal aberrations (CAs) including translocations	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/05/Orjuela2012AACR.pdf"]
Prenatal Exposure to Butylbenzyl Phthalate and Early Eczema in an Urban Cohort (Just, et al., 2012)	376 children from cohort (mothers enrolled 1999-2006)	monobenzyl phthalate (MBzP) in prenatal spot urine samples and questionaires, sera collected from children at ages 24, 36, and 60 months	Presence of eczema in young children	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/09/just20122.pdf"]
Does the home environment and the sex of the child modify the adverse effects of 2 prenatal exposure to chlorpyrifos on child working memory? (Horton, et al., 2012)	All children from cohort who had reached age 7, had prental and 7 yr interview, biomarkers of prenatal exposure, and WISC-IV at age 7	Home environment (either parental nurturance or environmental stimulation) measured using HOME Inventory, sex of child, and prenatal toxicant exposures including ETS, PAHs, lead, and chlorpyrifos Note: *Blood lead was measured in only 91 blood samples collected when subjects were 7 years of age CPF levels were below the limit of detection in all 91 blood samples thus they were unable to test the potential confounding effect of lead on the relationship between prenatal CPF and working memory.*	working memory and full scalre IQ scores using Wechsler Scales of Infant Intelligence at child age 7 years	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/10/Horton2012.pdf"]

Repeated exposure to polycyclic aromatic hydrocarbons and asthma: effect of seroatopy (Jung, et al., 2012)	349 children from cohort who completed airborne PAH measures at 2 time points (prenatal, 5-6 years of age) and the questionnaire given at 5 to 6 years of age	nrepeated PAH exposure, measured from prenatal personal and residential indoor monitors in children's homes	Asthma symptoms	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/10/Jung2012AAAI.pdf"]
Children's urinary phthalate metabolites and fractional exhaled nitric oxide in an urban cohort (Just, et al., 2012)	244 children who had phthalate metabolites determined in urine collected on the same day as FeNO measurement. Repeated sampling gathered n=313 observations between ages 4.9-9.1 years.	current phthalate exposure measured in urinary concentrations	fractional exhaled nitric oxide (FeNO), a marker of airway inflammation	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/10/Just2012AJRCCM.pdf"]
Prenatal exposure to pesticide ingredient piperonyl butoxide and childhood cough in an urban cohort (Liu, et al., 2012)	224 children from cohort who had health outcome measures at age 5–6 years and possessed measures of PBO, cis- and trans-permethrin during the 3rd trimester of pregnancy and at age 5–6 years.	prenatal (personal air sampling) and age 5–6 year measures of PBO and permethrins (sera samples); and questionaires	cough at age 5–6 years; wheeze, asthma, seroatopy, and fractional exhaled nitric oxide (FeNO)	[HYPERLINK "http://ccceh.org/wp-content/uploads/2012/10/Liu2012.pdf"]
Urinary concentrations of bisphenol A in an urban minority birth cohort in New York City, prenatal through age 7 years (Hoepner, et al., 2012)	568 participants (mothers & newborns combined) with at least one urine sample (children ages 3, 5, or 7)	Measured bisphenol A (BPA) concentrations in prenatal spot urine samples and subsequent urine samples from children		[HYPERLINK "http://ccceh.org/wp-content/uploads/2013/01/2013-Hoepner.pdf"]
Urban Tree Canopy and Asthma, Wheeze, Rhinitis, and Allergic Sensitization to Tree Pollen in a New York City Birth Cohort (Lovasi, et al., 2013)	549 children from cohort with outcome information available based on questionnaires or IgE testing at age 7	tree canopy cover—measured by geographic information systems data characterizing 2001 tree canopy coverage based on LiDAR (light detection and ranging) and multispectral imagery within 0.25 km of the prenatal address, and serum IgE antibody testing at age 7	development of childhood asthma, wheeze, rhinitis, and allergic sensitization	[HYPERLINK "http://ccceh.org/wp-content/uploads/2013/06/A.-Rundle_4.2013.pdf"]

Early-life cockroach allergen and polycyclic aromatic hydrocarbon exposures predict cockroach sensitization among inner-city children (Perzanowski, et al., 2013)	349 children with prenatal Bla g 2, prenatal PAH, and IgE levels measured at least once between the ages of 5 and 7 yrs old	domestic cockroach allergen and PAH exposure measured prenatally	cockroach allergen sensitization in early childhood	[HYPERLINK "http://ccceh.org/wp-content/uploads/2013/02/Perzanowski_2.6.2013.pdf"]
Neighborhood Social Context and Individual Polycyclic Aromatic Hydrocarbon Exposures Associated with Child Cognitive Test Scores (Lovasi, et al., 2013)	249 children who had completed the age 5 assessments at the time of analysis	Parental PAH exposure from personal air samples and neighborhood context variables including poverty, low educational attainment, low English language proficiency, and inadequate plumbing	scores on the Wechsler Preschool and Primary Scale of Intelligence-Revised (WPPSI-R, administered in English) at age 5	[HYPERLINK "http://ccceh.org/wp-content/uploads/2014/07/G.-Lovasi_2.20.2013.pdf"]
Prenatal and postnatal bisphenol A exposure and asthma development among inner-city children (Donahue, et al., 2013)		Prental and postnatal urinary BPA concentrations	Childhood asthma	N/A
Predictors and Consequences of Global DNA Methylation in Cord Blood and at Three Years (Herbstman, et al., 2013)	165 children from cohort who had cord blod samples and DNA from blood collected at age 3	global DNA methylation in the same children at birth (cord blood) and again at three years of age	Global DNA methylation changes from birth to age 3	[HYPERLINK "http://ccceh.org/wp-content/uploads/2013/09/J.-Herbstman_09042013.pdf"]
Significant interactions between maternal PAH exposure and haplotypes in candidate genes on B[a]P-DNA adducts in a NYC cohort of non-smoking African-American and Dominican mothers and newborns (Iyer, et al., 2013)	367 mother-infant pairs from cohort	PAH exposure and haplotype	B[a]P-DNA adduct formation	N/A

Polycyclic aromatic hydrocarbon exposure, obesity and childhood asthma in an urban cohort (Jung, et al., 2013)	363 children from cohort who had residential air monitoring at age 5-6 and available questionnaire data	PAH concentrations measured, and Obesity at age 5--defined as a body mass index (BMI) greater than or equal to the 95th percentile of the year 2000 age- and sex-specific growth charts	Current asthma and recent wheeze at ages 5 and 7	[HYPERLINK "http://ccceh.org/wp-content/uploads/2014/01/K.-Jung_12.27.2013.pdf"]
Time trends of polycyclic aromatic hydrocarbon exposure in New York city from 2001 to 2012: Assessed by repeat air and urine samples (Jung, et al., 2014)	~431 children from cohort with at least one residential air monitoring sample collected prenatally, at age 5/6 or 9/10 years or a urine sample analyzed at age 3, 5, 7 or 9 years (	Indoor PAH sampling measured prenatally, and at ages 5-6 and 9-10 and spot urine samples collected at ages 3,5,7, and 9	indoor BC and PM2.5 levels over time (between 2005 and 2012)	[HYPERLINK "http://ccceh.org/wp-content/uploads/2014/07/K.-Jung_4.5.2014.pdf"]
Prenatal exposure to airborne polycyclic aromatic hydrocarbons and IQ: Estimated benefit of pollution reduction (Perera, et al., 2014)	N/A	PAH exposure	gain in lifetime earnings due to IQ increase for a single year cohort	N/A
Association of recent exposure to ambient metals on fractional exhaled nitric oxide in 9–11 year old inner-city children (Rosa, et al., 2014)	193 children from cohort with at least one valid set of multiple flow measures from which distal and proximal fractions could be calculated, at ages 9 or 11, and had corresponding ambient metal concentrations collected within nine days of the FENO collection	ambient metals exposure of Ni, V, Zn and Fe obtained from a local central monitoring site and averaged over 9 days based on three 24 h measures every third day; Fractional exhaled nitric oxide (FENO) samples were obtained at constant flows of 50 (FENO50), 83 and 100 mL/s, Seroatopy was determined by specific IgE at age 7.	airway inflammation in children	[HYPERLINK "http://ccceh.org/wp-content/uploads/2014/07/M.-Jose-Rosa_5.27.2014.pdf"]
Asthma in Inner-City Children at 5-11 Years of Age and Prenatal Exposure to Phthalates: The Columbia Center for Children's Environmental Health	300 children in cohort with phthalate metabolite concentrations measured in mother prenatally with data on asthma status	phthalate exposures measured in prenatal spot urine samples and though ages 5-9	Childhood asthma	[HYPERLINK "http://ccceh.org/wp-content/uploads/2014/09/R.-Whyatt_9.17.2014.pdf"]

Cohort (Whyatt, et al., 2014)				
Prenatal exposure to antibiotics, cesarean section, and risk of childhood obesity (Mueller, et al., 2014)	436 mother-child pairs through age 7	Prenatal antibiotic exposure and cesarean births	Obesity measured by age- and sex-specific BMI z scores using the CDC SAS Macro, and defined obesity as BMI z ≥ 95th percentile	[HYPERLINK "http://ccceh.org/wp-content/uploads/2014/10/N.-Mueller_10.9.2014.pdf"]
Early-Life Exposure to Polycyclic Aromatic Hydrocarbons and ADHD Behavior Problems (Perera, et al., 2014)	250 children from cohort who had available data on at least one adduct measure (maternal or newborn), the CPRS and the CBCL assessments, and all covariates of interest	Prenatal PAH exposure estimated by levels of PAH- DNA adducts in maternal and cord blood collected at delivery. Postnatal exposure was estimated by the concentration of urinary polycyclic aromatic hydrocarbon metabolites at ages 3 or 5	Attention Deficit Hyperactivity Disorder behavior problems in children	[HYPERLINK "http://ccceh.org/wp-content/uploads/2015/01/F.Perera_11.05.2014.pdf"]
Persistent Associations between Maternal Prenatal Exposure to Phthalates on Child IQ at Age 7 Years (Factor-Litvak, et al., 2014)	328 children from cohort with data available through age 7	Prenatal urinary concentrations of phthalates	Wechsler Intelligence Scale for Children, administered at child age 7 years and evaluates four areas of cognitive function associated with overall intelligence quotient (IQ)	[HYPERLINK "http://ccceh.org/wp-content/uploads/2015/01/P.-Factor-Litvak_12.10.2014.pdf"]
Bisphenol A exposure and behavioral problems among inner city children at 7–9 years of age (Roen, et al., 2015)	271 of their children ages 7–9 with CBCL	prenatal and early childhood BPA exposure (prenatal, and spot urinr samples collected at ages 3 and 5)	Follow-up study--behavioral outcomes in 7–9 year old minority children as measured by CBCL	[HYPERLINK "http://ccceh.org/wp-content/uploads/2015/03/Roen02212015.pdf"]

Gestational weight gain and obesity, adiposity and body size in African–American and Dominican children in the Bronx and Northern Manhattan (Widen, et al., 2015)	323 children from cohort with available data	Gestational weight gain (GWG) determined by subtracting the last prenatal visit weight from the pre-pregnancy weight	body composition at 7 years [waist circumference (WC), body mass index z-score (BMIZ), obesity (BMIZ ≥95%ile) and bioelectrical impedance analysis estimates of percentage body fat (%fat)]	[HYPERLINK "http://ccceh.org/wp-content/uploads/2015/03/Widen03052015.pdf"]
Effects of Prenatal Exposure to Air Pollutants on Development of Brain White Matter, Cognition, and Behavior in Later Childhood (Peterson, et al., 2015)	40 children from cohort with available imaging	prenatal PAH exposure	Morphological measures that index local volumes of the surface of the brain and of the white matter surface after cortical gray matter was removed.	N/A
Vinyl flooring in the home is associated with children's airborne butylbenzyl phthalate and urinary metabolite concentrations (Miller, et al., 2015)	239 children from cohort	visual observation of potential phthalate containing flooring,	Urinary and airbrone BBzP metabolite concentrations	N/A
Combined Effects of Prenatal Polycyclic Aromatic Hydrocarbons and Material Hardship on Child IQ (Vishnevetsky, et al., 2015)	276 children from cohort with data on cord adducts, material hardship, and WISC outcomes.	Polycyclic aromatic hydrocarbon-DNA adducts in cord blood as an individual biomarker of prenatal polycyclic aromatic hydrocarbon exposure. Maternal material hardship self-reported prenatally and at multiple timepoints through early childhood.	Child IQ at 7 years assessed using the Wechsler Intelligence Scale for Children	[HYPERLINK "http://ccceh.org/wp-content/uploads/2015/04/J_Vishnevetsky_-PAH-material-hardship1.pdf"]
Repeatedly high polycyclic aromatic hydrocarbon exposure and cockroach sensitization among inner-city children (Jung, et al., 2015)	248 children from cohort with dta available at ages 5, 9-10 yrs old	Individual PAH metabolite levels in spot urine samples	sensitization to cockroach allergen in urban inner-city children at age 9 years	[HYPERLINK "http://ccceh.org/wp-content/uploads/2015/07/Jung_2015-3.pdf"]

Prenatal Exposure to Phthalates and Childhood Body Size in an Urban Cohort (Maresca, et al., 2015)		phthalate metabolites in urine samples collected prenatally and at ages 3 and 5 years old	Weight and body mass index (BMI) at child ages 5 and 7 years.	[HYPERLINK "http://ccceh.org/scientific-papers/prenatal-exposure-to-phthalates-and-childhood-body-size-in-an-urban-cohort"]
Prenatal Organophosphorus Pesticide Exposure and Child Neurodevelopment at 24 Months: An Analysis of Four Birth Cohorts (Engel, et al., 2015)	4 cohorts (including CCCEH cohort) n = 936	Prenatal organophosphate exposures	child development at 24 months	[HYPERLINK "http://ccceh.org/wp-content/uploads/2015/11/ehp.1409474.acco_.pdf"]
Persistent Associations between Maternal Prenatal Exposure to Phthalates on Child IQ at Age 7 Years (Factor-Litvak, et al., 2014)	328 children from cohort at age 7	Prenatal phthalate exposure measured by spot urine samples	Wechsler Intelligence Scale for Children administered at child age 7 years	[HYPERLINK "http://ccceh.org/wp-content/uploads/2015/11/Litvak_phthalates-and-child-IQ-age-7.pdf"]
Tremor in a Population-Based Cohort of Children in New York City (Louis, et al., 2015)	317 children from cohort who underwent an evaluation at one time point	tremor in children (measured by the drawing of Archimedes spirals, which were rated by a senior neurologist specializing in movement disorders)	Prevalence of tremor in children	[HYPERLINK "http://ccceh.org/wp-content/uploads/2016/01/1-s2.0-S0887899414006481-main.pdf"]
Longitudinal effects of prenatal exposure to air pollutants on self-regulatory capacities and social competence (Margolis, et al., 2016)		PAH exposure (as measured by the presence of PAH-DNA adducts in maternal blood at delivery)	development of self-regulation and social competence, measured by deficient emotional self regulation (DESR) profile score of CBCL and social responsiveness scale (SRS)	[HYPERLINK "http://ccceh.org/wp-content/uploads/2016/06/Margolis_et_al-2016-Journal_of_Child_Psychology_and_Psychiatry-11.pdf"]
Bisphenol A and Adiposity in an Inner-City Birth Cohort (Hoepner, et al., 2016)	375-518 children from cohort	BPA concentrations were measured in prenatal (n=375) and child ages 3	Childhood obesity (measured in BMIZ, FMI, %BF, and waist circumference)	[HYPERLINK "http://ccceh.org/wp-content/uploads/2016/06/EHP205.acco_.pdf"]

		(n=408) and 5 years (n=518) spot urine samples.		
Significant interactions between maternal PAH exposure and haplotypes in candidate genes on B[a]P-DNA adducts in a NYC cohort of non-smoking African-American and Dominican mothers and newborns (Iyer, et al., 2014)	367 children from cohort with available data on maternal PAH exposure, paired cord adducts and genetic data	maternal exposure to airborne PAH during pregnancy and maternal and newborn haplotypes	genes on B[a]P-DNA adducts in cord blood samples	[HYPERLINK "http://ccceh.org/scientific-papers/significant-interactions-between-maternal-pah-exposure-and-haplotypes-in-candidate-genes-on-bap-dna-adducts-in-a-nyc-cohort-of-non-smoking-african-american-and-dominican-mothers-and-newborns-2"]
Multiple Threats to Child Health from Fossil Fuel Combustion: Impacts of Air Pollution and Climate Change (Perera et al., 2017)	Draws from/summarizes cohort research and findings to date			[HYPERLINK "http://ccceh.org/wp-content/uploads/2017/02/climate-commentary.pdf"]
Combined effects of prenatal exposure to polycyclic aromatic hydrocarbons and material hardship on child ADHD behavior problems (Perera, et al., 2017)	351 children from cohort at age 9	PAH-DNA adducts measured in materal blood at delivery, maternal material hardship,	ADHD behavior problems assessed using the Conners Parent Rating Scale	[HYPERLINK "http://ccceh.org/scientific-papers/combined-effects-of-prenatal-exposure-to-polycyclic-aromatic-hydrocarbons-and-material-hardship-on-child-adhd-behavior-problems"]