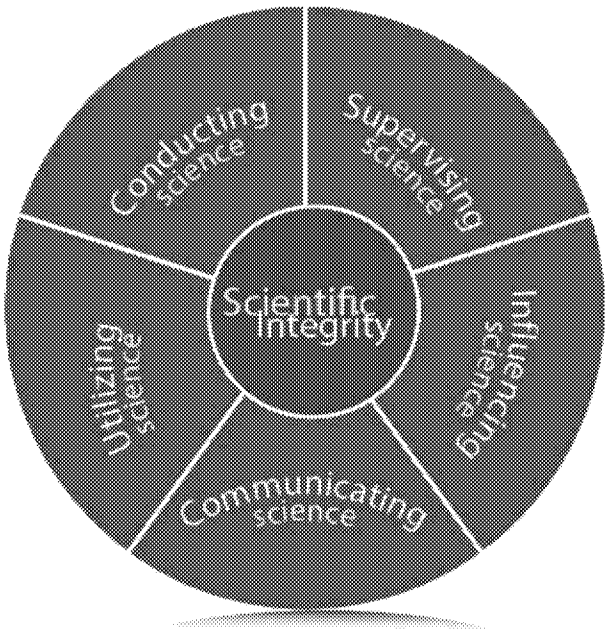
U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF INSPECTOR GENERAL

Improving EPA research programs

Further Efforts Needed to Uphold Scientific Integrity Policy at EPA

Report No. 20-P-0173 **May 20, 2020**



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Abbreviations

DSIO	Deputy Scientific Integrity Official
EPA	U.S. Environmental Protection Agency
FMFIA	Federal Managers Financial Integrity Act
FY	Fiscal Year
GAO	U.S. Government Accountability Office
OIG	Office of Inspector General
ORD	Office of Research and Development
SI	Scientific Integrity
SIO	Scientific Integrity Official

Cover Image: Per the EPA's *Scientific Integrity* brochure, scientific integrity applies to a variety of different activities conducted throughout the Agency. (EPA image)

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U.S. Environmental Protection Agency
Office of Inspector General

20-P-0173
May 20, 2020

At a Glance

Why We Did This Project

We conducted this audit to determine whether the U.S. Environmental Protection Agency's Scientific Integrity Policy is being implemented as intended to ensure SI throughout the EPA. Specifically, we examined (1) the extent and type of employee SI concerns, (2) employee awareness of the SI Policy, (3) reasons potential violations might not be reported, and (4) the process by which the Agency responds to and resolves allegations of SI violations.

The EPA's SI Policy was released in February 2012 and covers an array of areas, from quality standards for scientific products to communication with the public. The SI Policy describes the expectation that all EPA employees will adhere to the terms of the Policy, including affirmatively reporting Policy breaches. The SI Policy also assigns specific responsibility for its implementation to the SI Committee, which is composed of members from all EPA regions and program offices.

This report addresses the following:

- *Improving EPA research programs.*

Address inquiries to our public affairs office at (202) 566-2391 or OIG_WEBCOMMENTS@epa.gov.

List of OIG reports.

Further Efforts Needed to Uphold Scientific Integrity Policy at EPA

What We Found

Improving implementation of the SI Policy will enable the EPA to more effectively carry out its mission to protect human health and the environment.

The results of our 2018 agencywide survey on SI—which received 4,320 responses (a 23.5 percent response rate)—showed that 3,987 respondents were aware of or had some familiarity with the SI Policy. Among those respondents with a basis to judge, the majority (56 percent; 1,025 of 1,842) were satisfied with the overall implementation of the EPA's SI Policy. The survey also revealed some concerns with specific aspects of SI at the EPA, including dissatisfaction with the EPA's culture of SI (59 percent; 1,425 of 2,402) and the release of scientific information to the public (57 percent; 1,049 of 1,842).

While our 2018 survey results provide only a snapshot in time, comparing them with the EPA's 2016 SI survey suggests areas that have improved and areas in need of improvement. Our 2018 survey results demonstrate higher levels of awareness of the SI Policy and how to report a potential SI violation. However, our survey revealed lower measures of perceived leadership support of SI and of satisfaction with the review and clearance of scientific documents.

Also, while the SI Committee, including the scientific integrity official, have implemented many Policy requirements and identified actions to improve SI at the EPA, we found that procedures to address potential violations were not finalized, mandatory training was not tracked, annual reporting was not timely, and the release of scientific products was not supported by a centralized clearance system. With improvements in these areas, the SI Committee could more consistently implement the SI Policy across the EPA.

Recommendations and Planned Agency Corrective Actions

We recommend that the EPA's deputy administrator lead an effort to examine the causes associated with the SI concerns identified in our survey and communicate the results to Agency employees, including planned actions to address the causes. We also made 11 recommendations to the EPA science advisor, including developing procedures for addressing and resolving allegations of SI violations, communicating the outcomes of reports of SI violations, and improving the release of scientific information to the public.

The Agency agreed with our recommendations and provided acceptable corrective actions. Two recommendations have been completed, and the others are resolved with corrective actions pending.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

THE INSPECTOR GENERAL

May 20, 2020

MEMORANDUM

SUBJECT: Further Efforts Needed to Uphold Scientific Integrity Policy at EPA
Report No. 20-P-0173

FROM: Sean W. O'Donnell

TO: Doug Benevento, Associate Deputy Administrator

Jennifer Orme-Zavaleta, Principal Deputy Assistant Administrator for Science and EPA Science Advisor
Office of Research and Development

This is our report on the subject audit conducted by the Office of Inspector General of the U.S. Environmental Protection Agency. The project number for this audit is OA&E-FY18-0272. This report contains findings that describe the problems the OIG has identified and corrective actions the OIG recommends. Final determinations on matters in this report will be made by EPA managers in accordance with established audit resolution procedures.

The Office of the Administrator and the Office of Research and Development are responsible for the findings outlined in this report.

In accordance with EPA Manual 2750, your Offices provided acceptable corrective actions and estimated milestone dates in response to OIG recommendations. All recommendations are resolved, and no final response to this report is required. However, if you submit a response, it will be posted on the OIG's website, along with our memorandum commenting on your response. Your response should be provided as an Adobe PDF file that complies with the accessibility requirements of Section 508 of the Rehabilitation Act of 1973, as amended. The final response should not contain data that you do not want to be released to the public. If your response contains such data, you should identify the data for redaction or removal along with corresponding justification.

We will post this report to our website at www.epa.gov/oig.

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Chapter 1
Introduction

Purpose

The intent of the U.S. Environmental Protection Agency's 2012 Scientific Integrity Policy is to "ensure scientific integrity throughout the EPA and promote scientific and ethical standards, including quality standards; communications with the public; the use of peer review and advisory committees; and professional development."[1] The objective of this Office of Inspector General audit was to determine whether the EPA's SI Policy is being implemented as intended to assure SI throughout the EPA. Specifically, we examined:

1. Extent and type of employee concerns, if any, with SI at the EPA.
2. Employee awareness of the EPA's SI Policy, including the process for reporting potential violations. A potential violation is also referred to as a potential "loss of SI."
3. Reasons potential violations may not be reported.
4. The adjudication process for allegations of SI Policy violations in general and any concerns, such as with complaint resolution, timeliness of resolution, or other process-related issues.[2]

Background

On March 9, 2009, the president issued a memorandum to the heads of all executive departments and agencies directing them to establish "appropriate rules and procedures to ensure the integrity of scientific process within the agency."[3] On December 17, 2010, the director of the White House Office of Science and Technology Policy issued a memorandum providing further guidance to agencies on how to implement their SI

> "Science is the backbone of the EPA's decision-making. The Agency's ability to pursue its mission to protect human health and the environment depends upon the integrity of the science on which it relies. The environmental policies, decisions, guidance, and regulations that impact the lives of all Americans every day must be grounded, at a most fundamental level, in sound, high quality science."
>
> *—EPA SI Policy, Section II*

[1] EPA SI Policy, Section I.
[2] For the purposes of this report, the term "adjudication process," unless expressly stated otherwise, means the process by which the EPA screens allegations of a loss of SI; conducts an inquiry; adjudicates the allegation (that is, makes a determination as to whether a violation has occurred); and determines whether corrective action to uphold the SI Policy is appropriate.
[3] Memorandum for the Heads of Executive Departments and Agencies, 74 Fed. Reg. 10671, March 9, 2009.

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policies. This memorandum instructed agencies to develop policies that, among other things:

- Ensure a culture of SI.
- Strengthen the actual and perceived credibility of government research.
- Facilitate the free flow of scientific and technological information, consistent with privacy and classification standards for national security information.
- Establish principles for conveying scientific and technological information to the public.

Key Definitions

- ***Science*** and ***Scientific***: "expansive terms that refer to the full spectrum of scientific endeavors."
- ***Scientist***: "anyone who collects, generates, uses, or evaluates scientific data, analyses, or products."
- ***Scientific Misconduct***: includes "fabrication, falsification, or plagiarism in proposing, performing, or reviewing scientific and research activities, or in the publication or reporting of these activities; scientific misconduct does not include honest error or differences of opinion."
- ***Scientific Integrity***: "the adherence to professional values and practices when conducting, supervising, communicating and utilizing the results of science and scholarship."

—EPA SI Policy and outreach materials

In response, the EPA released its SI Policy in February 2012. The Policy applies to all Agency employees, including scientists, managers, and political appointees. In addition, all contractors, grantees, collaborators, and student volunteers of the Agency who engage in scientific activities are expected to—and may be required to, as part of their respective agreements with the EPA—uphold the standards established by the Policy.[4]

At a September 2019 congressional hearing, the EPA administrator said, "EPA has one of the strongest Scientific Integrity Policies in the federal government. … That is a testament to the tremendous work of EPA career staff. I will continue to support them and their work."

The SI Policy and outreach materials define several important terms, as detailed in the blue sidebar, and outline four specific focus areas for SI throughout the EPA, as detailed in Table 1. In addition, the Policy calls for the EPA to establish an SI Committee to implement the Policy.

Table 1: Four focus areas of EPA's SI Policy

Area	Select elements
Promoting a culture of SI at the EPA	• Promotes a culture of commitment to evidence, fostering honest investigation and open discussion. • Reaffirms policies and procedures for using and characterizing scientific information in policy development. • Requires employees to act honestly and refrain from acts of scientific misconduct. • Prohibits managers and other Agency leadership, from intimidating or coercing scientists to alter their scientific findings or professional opinions. • Prohibits all EPA employees, including scientists, managers, and other Agency leadership, from suppressing, altering, or otherwise impeding the timely release of scientific findings or conclusions.

[4] EPA SI Policy, Section III.

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Area	Select elements
Release of scientific information to the public	• Aims to expand and promote access to the EPA's scientific information. • Requires scientists and managers to use disclaimer language when expressing personal views. • Allows scientists and managers to review, correct, and approve scientific content for public release that significantly relies on their research, writing, or opinion.
Peer review and the use of federal advisory committees [a]	• Describes safeguards for peer review and advisory committees, including adherence to the EPA's *Peer Review Handbook*, which provides guidance on conducting peer review at the Agency.
Professional development of government scientists	• Encourages professional development for Agency scientists, including presenting and publishing research findings; participating in professional societies; and accruing awards, honors, and patents for their research and discoveries.

Source: OIG analysis of the EPA's SI Policy.

[a] The Federal Advisory Committee Act provides, in part, that a federal advisory committee is any committee, board, commission, council, conference, panel, task force, or other similar group that is established or used by the agencies or the president to obtain advice or recommendations and that is not composed solely of full-time or permanent part-time federal officers or employees. On June 14, 2019, the president issued Executive Order 13875, *Evaluating and Improving the Utility of Federal Advisory Committees*, that directs each executive department and agency to evaluate the need for each of its current advisory committees established under the Federal Advisory Committee Act, as well as those authorized by law but not required by statute. At the EPA, federal advisory committees are overseen by the Federal Advisory Committee Management Division in the Office of Mission Support, with legal support from the Office of General Counsel.

EPA's SI Committee

The EPA's SI Policy requires the establishment of an SI Committee that is chaired by the Agency's scientific integrity official and consists of deputy SIOs from each of the Agency's program and regional offices. As of December 2019, the EPA's SI Committee had 23 members. The role of the committee is to review the EPA's SI Policy every two years, recommend revisions with the approval of the EPA science advisor, and implement it in a consistent manner across the Agency. The committee is also responsible for promoting compliance with the SI Policy, including safeguarding against the manipulation of scientific data and addressing any concerns or questions regarding the Policy. Specifically, the Policy requires the committee to:

SIO Position Description

The person serving as SIO is "delegated authority for the direction, management, and implementation of the assigned program. He/she is expected to exercise independent initiative in accomplishing missions and objectives and in representing EPA in his/her area of responsibility. … Interpretations, recommendations, and conclusions made by the SIO should be above reproach and have major impacts on matters of great urgency and significance."

—EPA Form 3150-1

- Oversee the development and implementation of training related to SI for all EPA employees.
- Develop an agencywide framework for the approval of scientific communications.
- Hold an annual agencywide meeting and report on SI implementation and scientific misconduct issues within the Agency.

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- Complete annual certification of compliance with the Policy and report on implementation and misconduct issues.[5]
- Review the Policy every two years, at a minimum, to ensure its effectiveness and adherence with applicable rules and regulations.

In addition to chairing the SI Committee, the SIO is responsible for being a "champion" for SI throughout the Agency.[6] This role includes preparing, with input from the DSIOs, an annual report on the status of SI within the Agency for the EPA science advisor.[7] Per the SI Policy, the report should highlight SI successes and areas of improvement, as well as include findings of SI violations, lessons learned from the previous year, input from the annual agencywide meeting on SI, and recommendations for action and deliberation by the SI Committee in the upcoming fiscal year. The Policy also requires the SIO to coordinate with the OIG on issues of scientific misconduct.

Scientific misconduct—as defined by the SI Policy—includes fabrication, falsification, or plagiarism. EPA Order 3120.5 contains the EPA's policy and procedures for addressing research misconduct. With certain exceptions, the 2015 coordination procedures between the SIO and the OIG delegate the initial investigation of scientific misconduct allegations involving plagiarism to the SIO. The SIO and the OIG meet quarterly to discuss the status of any cases referred to one by the other.

For the purposes of this report, we use the term "SI Program" to collectively refer to the SIO, the program staff that support the SIO, and the DSIOs. Based on the Agency's SI data over an eight-year period—from February 2012, which was when the SI Policy was implemented, through March 2020—the SI Program received:

- 202 requests for advice/assistance (that is, questions and concerns related to SI and potential allegations).
- 85 allegations of a potential loss of SI.

Of these 85 allegations, the SI Program substantiated 20 and was actively conducting inquiries of 12. The remaining 53 allegations were not substantiated (25), withdrawn (12), not related to SI (10), or transferred to the OIG (6).

[5] The Federal Managers Financial Integrity Act of 1982 requires each executive agency to evaluate and report on the adequacy of internal controls. The EPA includes an SI component as part of this process by requiring each program office and region to submit a FMFIA Certification for Scientific Integrity.
[6] EPA SI Policy, Section II.
[7] Among other duties, the EPA science advisor advises the EPA administrator and deputy administrator on issues and concerns related to research programs and activities. The assistant administrator for Research and Development serves as the EPA science advisor. In the absence of an assistant administrator, the deputy assistant administrator for Science within the Office of Research and Development serves as the EPA science advisor.

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Interference, suppression or delay in the clearance of scientific information for dissemination, and authorship were the most common topics of both allegations and requests for advice received by the SI Program.

Responsible Offices

The EPA science advisor and the SIO are located in the Office of Research and Development and take the lead in implementing the SI Policy, with the support of DSIOs located in each EPA program office and region. The SIO is located within the ORD's Office of Science Advisor, Policy, and Engagement.

The Office of the Administrator establishes Agency priorities and is responsible for setting the "tone at the top"—per governmentwide U.S. Government Accountability Office standards—with respect to SI and adherence to Agency policies.[8]

Scope and Methodology

We conducted this performance audit from September 2018 to February 2019 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective.

To determine whether the EPA is implementing the SI Policy as intended, we analyzed key background and criteria documents, including:

- The EPA's SI Policy.
- Policies, a presidential executive order and memorandum, procedures, and best practices relating to SI as well as those addressing scientific misconduct in federal research.
- GAO, *Standards for Internal Control in the Federal Government*, GAO-14-704G, September 2014.
- Evaluation materials and work plans prepared by the SI Program.

[8] GAO-14-704G states, "The oversight body and management lead by an example that demonstrates the organization's values, philosophy, and operating style. The oversight body and management set the tone at the top and throughout the organization by their example, which is fundamental to an effective internal control system." The GAO standards also provide, "In larger entities, the various layers of management in the organizational structure also may set 'tone in the middle.'" As used in this report, "tone at the top" refers to senior EPA management, including the Office of the Administrator.

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- Internal and external reports on the implementation of the EPA's SI Policy, including:
    - Annual SI reports and agencywide meeting presentations.
    - EPA, *Scientific Integrity at EPA: Results of the 2016 EPA Employee Survey*, July 2018. The SI Program distributed this online survey from November 2015 to January 2016 to all current EPA employees. The survey assessed employees' awareness of the SI Policy and their experiences related to the culture of SI at the EPA. The SI Program used the results of this survey to identify action items to enhance the implementation of the SI Policy, which we discuss in Chapter 3. Appendix A lists these action items.
    - Oak Ridge Institute for Science and Education, *Evaluation of the Environmental Protection Agency's Process for Addressing Allegations of a Loss of Scientific Integrity: Review and Recommendations*, January 2018.
- Prior reports from the EPA OIG; the GAO; the National Academies of Sciences, Engineering, and Medicine; and other scientific organizations that identify best practices and challenges to implementing federal SI policies and procedures.

We interviewed the EPA's SIO and SI Program staff, eight SI Committee members, and ORD staff involved with the early development and implementation of the SI Policy. We interviewed OIG staff, including current and former OIG Hotline managers and the whistleblower protection coordinator, to gather information about the reporting and adjudication process and discuss their roles in facilitating the implementation of the SI Policy. During our audit, we met with a GAO audit team that was examining SI in nine selected federal agencies, including the EPA. The GAO's report, *Scientific Integrity Policies: Additional Actions Could Strengthen Integrity of Federal Research*, GAO-19-265, was published in April 2019 and contained ten recommendations to various agencies, including the Department of Energy and the National Aeronautics and Space Administration. The GAO's report made no recommendations to the EPA.

From November to December 2018, we conducted an agencywide survey of EPA employees and contractors to examine the implementation of the SI Policy and obtain their perspectives on SI at the EPA. The survey was structured to examine (1) awareness of and familiarity with the SI Policy, (2) experience with the four focus areas of the SI Policy shown previously in Table 1, and (3) awareness and experience with the process for reporting potential SI violations, as well as reasons for not reporting. Appendix B provides a high-level summary of our survey results, while Appendix C provides the raw data from our survey.

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Our 2018 survey received an overall response rate of 23.5 percent (4,320 responses out of 18,377).[9] Of the 4,320 respondents, 71 percent (3,083) reported being involved in science or scientific activities at the EPA.[10] Open-ended survey questions were analyzed, and comments were tabulated into common categories and themes. Skip-logic was used throughout the survey to direct respondents to certain questions based on their prior responses. Not all questions garnered the same number of responses because not all respondents may have answered the question or respondents may not have had a basis to answer a particular question. As a result, each question has its own number of respondents, and the number of respondents mentioned throughout our analysis below varies based on the question being discussed.

Eighty respondents provided us with their contact information to allow for follow-up regarding their SI concerns. We followed up with these individuals directly, and those communications resulted in 14 submissions to the SIO regarding potential SI issues, 12 submissions to the OIG Hotline, and five referrals to the OIG's Office of Audit and Evaluation to consider for ongoing or future work. During the course of the audit, we also identified areas where the OIG could improve its own internal processes, which we conveyed to OIG leadership.

While there are many criteria documents that support implementation of the SI Policy and are cited by the Policy itself, the scope of our audit focused on the role of the SIO and SI Committee in implementing the SI Policy, employee awareness of the SI Policy and of the process for reporting potential violations, and the adjudication process for addressing potential SI Policy violations in general. Beyond the information gathered via the survey, we did not examine the use of peer review and federal advisory committees or the professional development of government scientists. While we used the GAO's *Standards for Internal Control in the Federal Government* as a criterion, we did not conduct a full internal control audit of the SI Program, as our objective examined implementation of the SI Policy more broadly.

Prior Reports

Two prior EPA OIG reports were identified as relevant to this audit:

- On May 9, 2014, we issued Report No. 14-P-0247, *EPA Employees Did Not Act Consistently With Agency Policy in Assisting an EPA Grantee*. This report recommended that the SIO develop standard operating procedures that detail how staff are to comply with SI Policy requirements

[9] The response rate may be higher, as the master EPA email list of 18,377 recipients provided to us by the Agency does not reflect the exact number of current EPA employees and contractors; there is a lag between when staff separate from the Agency and when email addresses are removed from the master email list. Ninety-five survey responses were from the OIG; the OIG audit team did not take the survey.

[10] "Scientific activities"—as defined by the survey—includes the creation, use, or communication of scientific products, as well as the management of Agency science or scientists.

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to provide timely responses to requests for information by the media, public, and scientific community. According to the EPA's audit tracking system, this recommendation was completed as of October 29, 2015.

- On August 28, 2013, we issued Report No. 13-P-0364, *Quick Reaction Report: EPA Must Take Steps to Implement Requirements of Its Scientific Integrity Policy*. This report recommended that the EPA's deputy administrator direct the SI Committee to (1) develop and implement agencywide training on the SI Policy, (2) complete and issue an annual report on the status of SI in the Agency, and (3) provide a written plan describing the actions and milestones for implementing and completing the training and issuing the SI annual report. According to the EPA's audit tracking system, all recommendations were completed as of January 14, 2014.

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Chapter 2
OIG Survey Results Show Increase in Awareness of SI Policy but Decline in Perceived Leadership Support of SI

The results of our agencywide survey examining the implementation of the EPA's SI Policy found that:

- The majority of respondents were *aware of* the EPA's SI Policy (93 percent; 3,987 of 4,265), although a smaller portion—including those involved in science at the EPA—were *somewhat or very familiar with* the Policy and its procedures (68 percent; 2,892 of 4,265).

- Among those respondents with a basis to judge,[11] over half were *satisfied* with the overall implementation of the SI Policy (56 percent; 1,025 of 1,842). Specifically:

    - Respondents were *generally satisfied* with the Agency's use of peer review (70 percent; 821 of 1,169), advice from federal advisory committees (71 percent; 179 of 253), and professional development (64 percent; 1,344 of 2,111).

    - However, a majority expressed *dissatisfaction* with other aspects of the Policy's implementation, including the EPA's culture of SI (59 percent; 1,425 of 2,402), the release of scientific information to the public (57 percent; 1,049 of 1,842), and the EPA's management of federal advisory committees (55 percent; 155 of 284).

    - Additional areas of concern for these respondents included the ability to express scientific opinions (26 percent; 705 of 2,720), management support for scientifically defensible positions (24 percent; 624 of 2,590), reporting of research findings without alteration or suppression (21 percent; 368 of 1,786), and the transparency of the scientific (or nonscientific) basis for senior leader policy decisions (51 percent; 1,310 of 2,547).

- Approximately half of respondents involved in science (51 percent; 1,413 of 2,798) knew the process for reporting a potential SI violation, and over half (58 percent; 1,632 of 2,798) were comfortable with reporting a potential violation. While the SI Policy says that there is an expectation

[11] Respondents were given the option to select "No basis to judge/Do not know" for some questions if they did not have the relevant experience or knowledge to respond; data on these respondents are provided in relevant figures and Appendix C. Our analysis focused on respondents who indicated that they had a basis to judge, as applicable.

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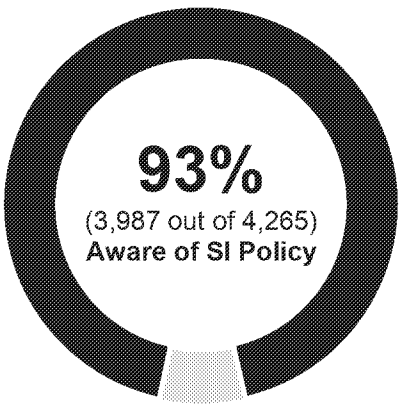
that employees accept the affirmative responsibility to report breaches, nearly 400 respondents *experienced, but did not report,* potential violations of the SI Policy. Reasons respondents provided for not reporting potential SI violations were a fear of retaliation and belief that reporting these potential violations would not make a difference.

Our survey results indicate that the EPA may face implementation challenges associated with aspects of the SI Policy, such as those areas involving culture, release of scientific information, use of federal advisory committees, and reporting of potential SI violations. Some of these areas may be outside the control of the SI Program and more appropriately addressed by Agency leadership.

Awareness of the SI Policy

Of 4,265 respondents, 93 percent (3,987) were at least aware or had some familiarity with the EPA's SI Policy. Of these 4,265, 48 percent (2,033) were somewhat familiar with the Policy, and 20 percent (859) were very familiar with the Policy. The four most common ways that survey respondents reported learning about the Policy were through an EPA leadership memorandum or email, a presentation by the SIO, the EPA website, or an online training module.



Source: OIG analysis of survey results.

Those who indicated that they were involved in science at the EPA were more aware and familiar with the SI Policy than those not involved in science. Nevertheless, a high percentage of those not involved with science were still aware of the Policy, though less were familiar with the Policy content (Appendix B, Table B-1).

Of 3,954 respondents who were aware of the Policy before taking our survey, 53 percent (2,086) reported receiving some form of training on the SI Policy, 24 percent (957) indicated that they had not received training, and 23 percent (911) could not remember whether they had received training.

Satisfaction with the SI Policy

For those respondents involved in scientific activities at the EPA and with a basis to judge, we measured their satisfaction with the SI Policy based on their experiences in the six months prior to the survey (approximately July–December 2018). A higher percentage of these respondents were *dissatisfied* than were *satisfied* in three areas: the culture of SI, the EPA's release of scientific information to the public, and how the EPA manages and uses federal advisory committees. More of these respondents were *satisfied* than were *dissatisfied* in three areas: peer review, the advice received from federal advisory committees, and professional development. Figure 1 details these results.

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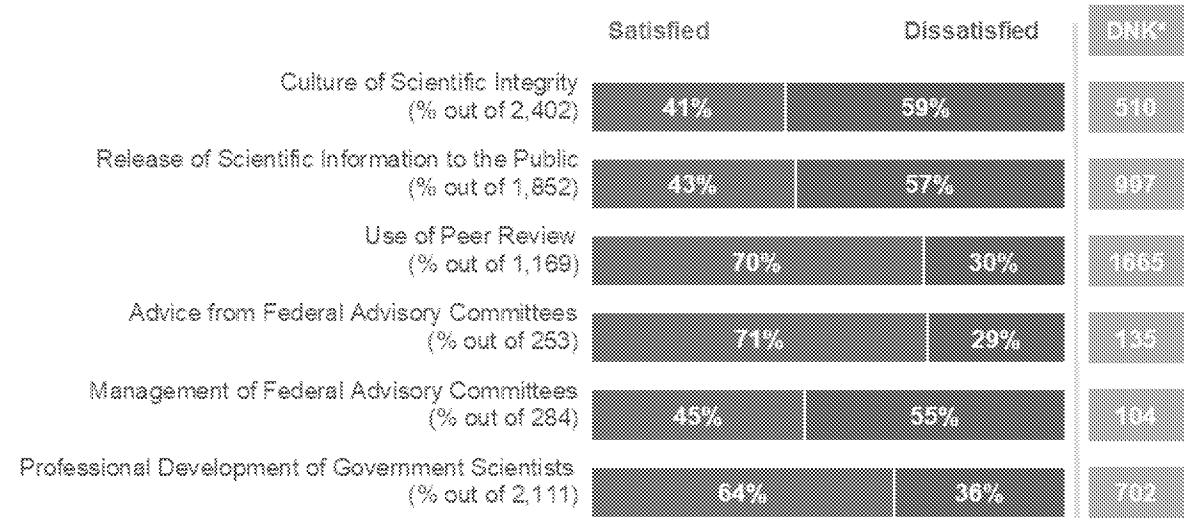
Figure 1: Satisfaction with key areas of the SI Policy



Source: OIG analysis of survey results.

Note: The number of respondents with a basis to judge varied.

* *DNK* stands for *Do Not Know*. Respondents who indicated that they had "No basis to judge / Do not know" were not included in the percentage comparison.

Overall, based on their experiences in the six months preceding the survey, 56 percent (1,025 of 1,842) respondents involved in science and with a basis to judge were satisfied with the implementation of the EPA's SI Policy, while 44 percent (817) were dissatisfied.

EPA's Culture of SI

As noted in Figure 1, when asked about the EPA's culture of SI, 59 percent (1,425 of 2,402) respondents involved in science and with a basis to judge were dissatisfied. Respondents were also asked about their experiences with specific areas of the SI culture that are identified in the SI Policy (Appendix B, Figure B-1). A majority of respondents with a basis to judge were positive about five areas of culture—specifically, their ability to:

- Express scientific views in their personal capacity, and not representative of the Agency.
- Openly express scientific opinions in the Agency without fear of retaliation.
- Observe consistent support by their management chains for scientifically defensible positions.
- Provide input on scientific content relying on their research.
- Experience no alteration or suppression of their research findings outside of technical merit.

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However, approximately one-fifth of respondents expressed a negative opinion about each of the areas above. In another area examining culture—that senior leadership makes the basis for any policy decision accessible and transparent—51 percent (1,310 of 2,547) of respondents with a basis to judge disagreed or strongly disagreed with the statement.

Over 1,300 respondents provided comments on the behaviors demonstrating support or lack of support for a culture of SI. Common themes from the comments were:

- Dissatisfaction with support for or understanding of SI by *senior leadership, managers, and political appointees*. However, respondents did express satisfaction with the culture or support for SI at the office, program, and regional level by *career managers and staff*.
- Belief that political appointees or senior leadership do not value or adequately consider science in policy, rulemaking, or enforcement decisions.
- Belief that leadership is greatly influenced by political, industry, state, or regulated groups.
- Concern or disagreement with the Agency's approach to climate science information.
- Experience or observation of suppression, changes, manipulation, or exclusion of scientific information, results, or research.
- Suggestion that political appointees be trained on the obligations and requirements of the SI Policy as a possible solution for addressing the concerns with senior EPA leadership or managers.

Selected survey comments related to EPA's culture of SI:

"... It is unclear how the integrity policy applies to [political] appointees, and what recourse career employees have in the face of such actions."

"There is confusion between science integrity and policy choices - much of science is interpretation of data and modeling. Interpretation and models have bias (not the pejorative version but rather the choices you make in constructing the model or the test creates a bias in the result). Some in the agency seem to believe that scientific integrity means that there is only one legitimate policy choice and failure to follow that road lacks integrity."

"While there [are] no formal challenges to scientific integrity, I see many offices that will self-censor content they believe the current administration doesn't like."

"Integrity comes from the top down and with the current administration it feels like there is not an emphasis on data and facts but more of an emphasis on policy and industry."

"I don't believe that folks really understand their obligations under the policy. New political appointees should have specific training to ensure that their policy decisions are based in scientific integrity."

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Release of Scientific Information to the Public

Our survey examined how those respondents involved in science at the EPA and with a basis to judge viewed the EPA's release of scientific information to the public. In general, when asked about the EPA's release of scientific information to the public, 57 percent (1,049 of 1,852) of these respondents were dissatisfied.

Survey respondents were mixed about their experiences with specific aspects of the release of scientific information to the public (Appendix B, Figure B-2). A majority of these respondents agreed or strongly agreed that:

- Clearance procedures are consistently applied within their offices (54 percent; 975 of 1,797).
- Their scientific products are released without inappropriate coercion to change scientific content (58 percent; 1,029 of 1,785).

Only 43 percent (818 of 1,902) of respondents agreed that their offices' clearance procedures are transparent, and only 44 percent (816 of 1,850) of respondents believed that their scientific products are released in a timely fashion. Over 700 respondents provided comments about the process for releasing scientific information to the public. Common categories of concern raised in the comments were:

- Release of information is not timely, or the process is unnecessarily long or undergoes unjustified or excessive delays.
- Agency's leadership and senior management interferes with, suppresses, or censors the release of scientific information to the public, possibly due to political or industry influence.
- The EPA has withheld, restricted, or removed scientific information from public access, such as from the Agency website and some publications.
- Greater transparency is needed in the process and for the public.

Selected survey comments related to the release of scientific information to the public:

"The clearance process is not consistently applied across the Agency."

"Certain Offices are now holding peer-review papers indefinitely, taking advantage of what used to be an environment that supported timely courtesy reviews."

"Set specific timeline for upper level reviews so they can't just keep something 'in review' indefinitely."

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Peer Review and Use of Federal Advisory Committees

More than half (60 percent; 1,697 of 2,834) of the survey respondents involved in science were familiar with the EPA's Peer Review Policy or the Peer Review Handbook. When asked about the use or application of peer review at the EPA in the six months prior to the survey, a majority of respondents (70 percent; 821 of 1,169) with a basis to judge were satisfied.

Of those respondents involved in science, only 14 percent (389 of 2,830) were involved in managing or using advice from EPA federal advisory committees. When asked about the *advice* they had received from federal advisory committees in the six months prior to the survey, a majority (71 percent; 179 of 253) of these respondents with a basis to judge were satisfied. However, when asked about how the EPA *manages and uses* federal advisory committees, a majority (55 percent; 155 of 284) of these respondents with a basis to judge were dissatisfied.

The respondents who provided comments on the management and use of federal advisory committees were primarily concerned with the 2017 changes made by the EPA to the membership requirements of federal advisory committees,[12] rather than the quality of the advice. Commenters noted that the changes to the federal advisory committees might impact how these committees are used in the future, which could reflect poorly on the Agency and prevent the Agency from objectively considering policy decisions. Of the 173 respondents that

Selected survey comments related to peer review and the use of federal advisory committees:

"Peer review requires independent, unbiased, and objective reviewers; the reconstitution of many review panels to eliminate well qualified scientific experts has undermined the integrity of EPA's process."

"The process for determining what topics should be reviewed by [federal advisory committees] could be applied more consistently across EPA. It seems different levels of topics are reviewed and the levels of advice requested differs as well."

"The current make up of the chartered Clean Air Scientific Advisory Committee (CASAC) does not have the technical expertise or experience to adequately review the assessments they are charged with reviewing."

"While Advisory Committees do an amazing job of communicating their advice to EPA, certain ones need to be given more charge questions so they have the ability to share their expertise more often."

"Balance expertise on the committee, not the representation of industry vs. others. Do not disqualify those from institutions who receive funding from EPA unless you also disqualify those who are regulated by EPA."

[12] An October 31, 2017, EPA administrator directive and memorandum, *Strengthening and Improving Membership on EPA Federal Advisory Committees*, restructured the membership of federal advisory committees by (1) forbidding nongovernmental and nontribal members from serving on advisory committees while receiving EPA grants; (2) increasing state, tribal, and local government participation; (3) enhancing "geographic diversity," except when committees focus on specific regional or area issues; and (4) opening membership to a "broad, diverse array of experts who can potentially provide unique and informative new perspectives."

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provided comments, common concerns involved perceived conflicts of interest (for example, industry influence) and qualifications of scientists on federal advisory committees (for example, the EPA's new membership requirements prohibiting EPA grantees from serving on committees).

Professional Development of Government Scientists

When asked about professional development opportunities offered at the EPA in the six months prior the survey, a majority (64 percent; 1,344 of 2,111) of respondents involved in science and with a basis to judge were satisfied. The survey measured these respondents' ability to participate in the five areas of professional development defined in the SI Policy (Appendix B, Table B-2). The majority of these respondents expressed that they were able to participate in professional development opportunities.

> *"The opportunities for professional development exist. [T]he current workload severely limits the ability to take advantage of those opportunities..."*
>
> *—Survey Respondent*

Common themes from the 741 respondents who provided comments about the professional development of scientists at the EPA were lack of monetary resources devoted to professional development, lack of management support to pursue development opportunities, and limited time allowed to pursue professional development due to workload.

Awareness of and Experience with Process for Reporting Potential SI Violations

Over half (52 percent; 1,436 of 2,783) of respondents involved in science did not know that they could seek advice from the SIO or DSIOs without making a formal allegation. Respondents indicated that they were *most likely* to discuss or report their *concerns* relating to loss of SI with a first-line supervisor (78 percent; 2,179 of 2,788), followed by the SIO (34 percent; 940 of 2,788) or a second-line supervisor (32 percent; 902 of 2,788) (Appendix B, Figure B-3). In a previous question, however, 42 percent (1,166 of 2,798) of respondents indicated that they would not feel comfortable reporting an *actual allegation or instance potential loss of SI.*

Source: OIG analysis of survey results.

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Experience with Resolution of Reported Instances or Allegations of SI Violations

Over 200 respondents involved in science indicated that they had reported an instance or allegation of a potential loss of SI in the past.[13] Most of these respondents indicated that they did not believe that the reported instances or allegations were handled promptly or objectively:

- 133 out of 207 respondents believed that the allegation had not been handled promptly. Approximately two-thirds of these 133 respondents indicated that the primary reason for this belief was "Not addressed/Do not know/Unresolved after three or more years."

- 144 out of 207 respondents indicated that they believed the allegation was not handled objectively and impartially. The most cited reasons were that they did not know (were never informed) whether or how their allegation was resolved or that they did not feel their allegation was satisfactorily resolved.

Selected comments regarding why respondents believe allegations were not resolved:

"I have reported two different issues, neither was ever addressed and no response was ever given."

"I don't know how they addressed my concern because they never told me."

"No one in management wanted to make wave[s] either up or down the chain of command."

"...[allegation] was finally investigated, [but] the people asked to investigate were the ones where the problem originated."

For the 63 respondents who reported that their allegations were resolved, the top five selections for who resolved their allegations were first-line supervisor (25), second-line supervisor (19), management and senior leadership (18), the SIO (11), and the OIG (9). Respondents could select more than one option.

Unreported Instances or Allegations of Potential SI Violations

Nearly 400 respondents involved in science indicated that they had experienced—but did not report—a potential violation of the SI Policy. The top categories of unreported concerns were:[14]

- Interference with science by a manager or senior Agency leader (251).
- Suppression or delay of release of scientific report or information (175).

[13] The survey did not specify to whom the instance or allegation was reported; thus, the respondent could have reported to their first-line supervisor, the SIO, their second-line supervisor, etc.
[14] See Appendix C, Question 37 for complete list of options provided in the survey. Respondents could select more than one option.

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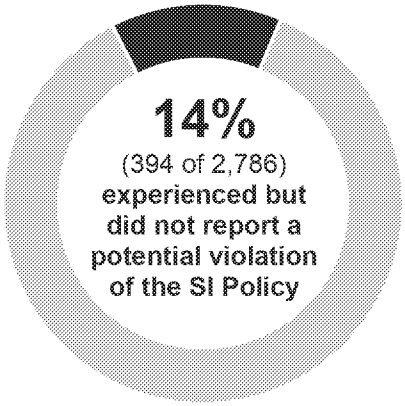
- Conflicts of interest (106).
- Data quality concerns (99).

Common reasons provided in comments for why these respondents did not report these incidents or potential allegations, despite the affirmative responsibility to report per the SI Policy, were fear of retaliation, belief that reporting would make no difference, perceived suppression or interference by Agency leadership and senior management, and belief that politics and policy outweigh science.



Source: OIG analysis of survey results.

Comparison of EPA's 2016 and OIG's 2018 SI Survey Results

In fiscal year 2016, the SI Committee developed a survey to assess, in part, the effectiveness of the Agency's SI Policy. The survey was distributed to all EPA employees and focused on (1) gauging employees' awareness and understanding of the Policy and (2) employees' experiences with the culture of SI at the EPA. The survey had a 39 percent response rate, and the reported results focused on the responses of 3,793 employees who self-identified as spending at least 25 percent of their time conducting, using, communicating, or managing science.

Our analysis comparing the EPA's 2016 and OIG's 2018 survey results was limited to the surveys' similar questions (Table 2). We found an increase in respondent awareness of the SI Policy and how to report an instance or allegation of a loss of SI. However, there was a decline in perceived leadership support of SI and knowledge of the review and clearance procedures for the public release of scientific documents.

Table 2: Comparison of survey results: EPA's 2016 and OIG's 2018 SI surveys

	2016 results	2018 results
Awareness of EPA SI Policy and related procedures		
Respondent is aware of the EPA's SI Policy.	90% (3,409 of 3,791)	93% (3,987 of 4,265)
Respondent is familiar with or aware of the content of the EPA's SI Policy or related procedures.	55% (2,095 of 3,791)	68% (2,892 of 4,265)
Perceived leadership support of SI		
Management chain consistently stands behind staff who put forth scientifically defensible positions that may be controversial.	60% (1,974 of 3,311)	53% (1,377 of 2,590)
Within the EPA, respondent can—as part of an official capacity—openly express scientific opinions about the Agency's scientific work without fear of retaliation.	72% (2,513 of 3,489)	57% (1,541 of 2,720)

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	2016 results	2018 results
Review and clearance of scientific products		
Respondent has right to review, correct, and approve the scientific content of an Agency document that identifies the respondent as an author or represents the respondent's scientific opinion before public release.	69% (1,938 of 2,816)	58% (1,190 of 2,069)
Clearance procedures are consistent within the respondent's office.	59% (1,145 of 1,927)	54% (975 of 1,797)
Clearance process is transparent.	53% (1,069 of 2,005)	43% (818 of 1,902)
Scientific or technical products to which the respondent contributes are released to the public in a timely fashion.	53% (1,536 of 2,923)	44% (816 of 1,850)
Respondent knows how to report instances or allegations related to loss of SI.	41% (1,559 of 3,772)	50% (1,385 of 2,798)

Source: OIG analysis of survey results.

Conclusion

Our survey results showed that over half (56 percent; 1,025 of 1,842) of respondents with a basis to judge were satisfied with the overall implementation of the EPA's SI Policy based on their experiences in the six months preceding the survey. Respondents were generally satisfied with the Agency's use of peer review, advice from federal advisory committees, and professional development. Additionally, 93 percent (3,987 of 4,265) of all respondents were at least aware of or had some familiarity with the SI Policy.

However, a number of survey results indicate that the EPA may face implementation challenges related to the SI Policy, particularly in regard to the culture of SI at the EPA. For example, 705 respondents expressed fear of retaliation associated with expressing a scientific opinion about the Agency's scientific work; 624 respondents believed that their management chains do not consistently stand behind scientific staff who put forth scientifically defensible positions, including those that may be controversial; 368 respondents reported research findings that have been altered or suppressed for reasons other than technical merit; and 1,310 respondents disagreed with the statement that senior leaders make the scientific or nonscientific basis for their policy decisions transparent (Appendix C, Question 12).

With respect to reporting potential violations, 1,166 respondents indicated that they did not feel comfortable reporting instances or allegations relating to the potential loss of SI in their organizations (see Appendix C, Question 29). Almost 400 respondents indicated that they had not reported allegations of potential SI violations, despite the affirmative responsibility to report per the SI Policy. Reasons given for not reporting potential SI violations were a fear of retaliation and the belief that reporting would make no difference (Appendix C, Questions 36 and 38).

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While our 2018 survey results provide only a snapshot in time, comparing them with the EPA's 2016 SI survey suggests areas that have improved and areas in need of improvement. Our 2018 survey results demonstrated higher levels of awareness of the SI Policy and how to report a potential SI violation. However, our survey results demonstrated lower measures of perceived leadership support of SI and satisfaction with the review and clearance of scientific documents.

We address implementation issues that are within the control of the SI Program in Chapter 3. Some of our survey findings, however, indicate broader concerns with SI pertaining to culture and "tone at the top," which are outside the control of the SI Program.[15] As discussed previously in this report, the GAO's *Standards for Internal Control in the Federal* states that management should (1) set a "tone at the top" that emphasizes adherence to Agency standards of conduct and policies and (2) take consistent and appropriate actions for violations of policies, procedures or codes of conduct. Consistent with the GAO's control standards and the SI Policy, these broader concerns with SI should be addressed by EPA senior leaders.

Recommendation

We recommend that the EPA's deputy administrator:

1. Determine the extent and cause of the concerns related to culture and "tone at the top," based on the indicators from the OIG's scientific integrity survey. Issue the results to all EPA staff and make available to the public, including planned actions to address the causes.

Agency Response and OIG Assessment

The Agency agreed with our recommendation and provided acceptable corrective actions. After we issued our draft report to the Agency, we clarified the recommendation, amending it to include the issuance and public release of the planned actions to address the cause of the concerns identified in our survey. This change was communicated to the Agency, and its response reflects the revised recommendation.

The recommendation is considered resolved with corrective actions pending. The Agency's response to our draft report is in Appendix D. The Agency also provided technical comments on the draft report, and we revised the report as we deemed appropriate.

[15] The specific OIG survey questions that produced these findings are Questions 12, 13, 16, 29, and 36, which are summarized in this chapter and can also be found in Appendix C. Open-ended questions 14, 17, and 38 also relate to these findings, and the themes from these questions are summarized in this chapter.

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Chapter 3
Implementation of EPA's SI Policy Could Be Improved

The OIG's SI survey results and audit work identified areas where the SI Program could improve implementation of the SI Policy. These areas include:

- Completing previously planned implementation activities.
- Improving tracking and implementation of SI training.
- Improving transparency and timeliness in the release of scientific information to the public.
- Enhancing the SI adjudication procedures.
- Clarifying the roles of the SI Committee members.
- Improving the tracking and communication of SI complaint adjudication outcomes.

Improvements in these areas will help to fulfill the specific requirements of the SI Policy and facilitate a culture of SI throughout the EPA.

Completing Actions to Improve Implementation of the SI Policy

The SI Policy requires the SI Committee to implement the Policy across the Agency in a consistent manner and review the Policy for effectiveness at least once every two years. In 2014, the SI Program identified several methods to collect information for its assessment of the SI Policy, including:

- Conducting an agencywide survey every five years. The initial survey was conducted in FY 2016, from November 2015 through January 2016.
- Reporting on SI issues as necessary pursuant to FMFIA.
- Distributing evaluation surveys of SI trainings after each training.
- Tracking SI website analytics.
- Reporting on allegations of SI Policy violations.

Based on the results of the EPA's 2016 SI survey, the SI Program identified 16 action items to enhance implementation of the SI Policy and satisfy Policy requirements. As of October 2019, the SI Program had completed five and partially completed seven of these action items. According to the SIO, the remaining four had not been started due, in part, to the resource limitations of the SI Program. Appendix A details the 16 action items and includes the OIG's assessment of the completion status for each item.

The EPA's implementation of the SI Policy is impeded by the partially complete or incomplete actions. For example, our survey respondents indicated that

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differing scientific opinions was one of their top five SI concerns. This issue was also the basis for one of the 16 action items resulting from the EPA's 2016 survey, but it remains only partially completed (Appendix A, Action Item 9). Specifically, the 2016 survey identified the lack of a differing scientific opinion mechanism as a vulnerability and challenge as part of the EPA's FMFIA reporting process. Furthermore, the SI Policy requires that the SIO, with input from the DSIOs, develop a transparent mechanism for handling differences in scientific opinion. The mechanism to address differing scientific opinions, however, has not been finalized.

Likewise, our survey found that the most-disagreed with statement on the culture of SI at the EPA was "Senior leaders make the scientific and/or non-scientific basis for their policy decisions accessible/transparent."[16] Specifically, 1,310 of 2,547 respondents involved in science and with a basis to judge disagreed or strongly disagreed with that statement. This area was also identified as an area for action resulting from the EPA's 2016 survey. As of October 2019, however, the outreach material that the SI Program developed to address this issue had not been finalized (Appendix A, Action Item 8).

In 2018, the SI Program commissioned an external study to assist with its assessment of the Policy's implementation. The resulting report made recommendations to improve the SI adjudication process. As a result, the SI Program drafted and, as of January 2020, was in the process of finalizing procedures for addressing requests for advice/assistance, as well as allegations of SI Policy violations.

According to the SIO, resource limitations account for the delay in completing the action items from the 2016 survey. The SI Program internal work plans estimate that five full-time equivalents (including the SIO), three student services contractors, and one research fellow are needed to complete the ongoing and outstanding work. However, Table 3 shows that, from FYs 2015 through 2019, the ORD assigned just two to three full-time equivalents, including the SIO and support staff, to the SI Program. During this period, a decreasing number of contractors and grantees provided additional assistance. Furthermore, during this period, the ORD did not have a separate line item in its budget for the SI Program; rather, the SI Program was funded via the ORD's Office of the Science Advisor's budget.[17]

[16] In other parts of the survey, "senior leadership" referred to those managers above second-line supervisors, typically in Senior Executive Service or political appointee roles, though the distinction was not made in this question.
[17] As of September 2019, the Office of the Science Advisor has been renamed the Office of Science Advisor, Policy, and Engagement.

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Table 3: SI resources within ORD (SIO and supporting resources)

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Personnel					
EPA full-time equivalent	2	2	2	3	3
Additional support staff (e.g., contractors)	3	2	2	1	0.75
Additional support cost	$284,283	$136,769	$97,078	$64,190	$64,000
Resources					
Travel	$19,006	$12,281	-	$1,890	$14,371
Extramural (e.g., contracts or grants)	$321,354	$125,605	$376,981	$5,948	$200,000

Source: OIG adaptation of EPA table.

Note: This table does not include resources from DSIOs, other program offices, or regions. According to the EPA, additional support staff provide indirect support to the SI Program, but their level of support is variable, as they have other duties.

According to the SIO, the SI Committee approves a work plan each fiscal year to prioritize SI implementation activities that the SI Program can complete with available resources.

While the various evaluation activities conducted by the SI Program—including the 2016 survey and the 2018 external study that resulted in action items and recommendations—may provide useful data to inform planning, they are not used to directly measure performance of the SI Program or the success of SI Policy implementation more broadly. Furthermore, resource limitations and lack of performance measures hinder the SI Committee's ability to fully assess and implement the SI Policy. Performance measures would allow the SI Program to better measure Program success and prioritize activities.

Recommendations

To enhance the assessment and implementation of the Scientific Integrity Policy, we recommend that the EPA science advisor, with the assistance of the Scientific Integrity Committee:

2. Develop and identify which performance measures will be used to define Scientific Integrity Program success and effective Scientific Integrity Policy implementation.

3. Develop and execute a plan, including resource needs and milestones, to address the remaining action items identified by the Agency to improve the implementation of its Scientific Integrity Policy.

Improving Tracking and Implementation of SI Training

According to the SI Policy, the SI Committee is responsible for overseeing the development and implementation of SI training for all Agency employees. As of January 2017, SI training is required for all new employees. In addition, almost 6,000 existing employees were trained on the SI Policy prior to January 2017,

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even though SI training is not one of the EPA's mandatory annual trainings. Furthermore, as of September 2019, the SIO has trained over 600 managers through the EPA's "Management Dialogues on Scientific Integrity" course, which helps define the responsibilities of management and senior leadership (Appendix A, Action Item 7).

However, there are employees who still have not received formal SI training. For example, employees who started working at the EPA before 2016 were not required to take the SI training as new hires and may not have elected to take the SI training since onboarding. In addition, the EPA's senior leaders and political appointees have the option to receive the mandatory onboarding training in a different format from the online training available to EPA staff, such as through briefing packages or in-person training provided by the SIO. The SIO reported that, as of October 2019, approximately 60 senior leaders and political appointees have completed the SI training or been briefed by the SIO.

While the SI Committee oversees the implementation of SI training, responsibility for enforcing and verifying that each new employee takes the training ultimately rests with the employee's supervisor. As the manager of FedTalent, the EPA's training and professional development system, the Office of Mission Support regularly provides the SIO with data tracking completion of the mandatory new employee training. However, the tracking data provided to the SIO have only recently—as of September 2019—identified those new employees who have not completed the training. The new data will help the SI Committee facilitate enforcement of the mandatory training requirement. Improving enforcement of the mandatory training requirement will help to increase awareness of and compliance with the SI Policy.

Recommendations

We recommend that the EPA science advisor, in coordination with the assistant administrator for Mission Support and with the assistance of the Scientific Integrity Committee:

4. Develop and implement a process for tracking completion of scientific integrity training for all new employees, including senior leadership and political appointees.

5. Regularly provide updated information on scientific integrity training completion rates to Scientific Integrity Committee members and supervisors.

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Improving Transparency and Timeliness in Release of Scientific Information to the Public

The EPA does not require the use of a centralized clearance systems to support the release of scientific products. In the absence of a centralized system, clearance processes vary across program offices and regions. As presented in Chapter 2, although the OIG's survey results identified that respondents held a generally positive view of clearance procedures, there was dissatisfaction with the EPA's release of scientific information to the public. Some respondents involved in science and with a basis to judge stated that the clearance process in their offices or regions was not transparent (31 percent; 584 of 1,902) or was not consistently applied (22 percent; 394 of 1,797). Furthermore, 28 percent (511 of 1,850) of respondents said that the scientific information to which they contributed was not released in a timely manner (Appendix B, Figure B-2). Survey comments and follow-up interviews highlighted similar concerns that the clearance process is not consistent or transparent, especially if multiple offices are involved.

> "Before release, scientific products go through clearance, which is a process of obtaining management's approval for public release. Clearance is required for scientific products developed as part of an EPA employee's official duties.
>
> —From *Best Practices for Clearance of Scientific Products at EPA*

The SI Policy states:

> EPA strongly encourages and supports transparency and active, open communications through various forms including, but not limited to, publication in peer-reviewed or refereed journals, conference papers and presentations, media interviews, responses to Congressional inquiries, web postings, and news releases.

In May 2018, to improve transparency and communication, the SI Program published *Best Practices for Clearance of Scientific Products at EPA* as a reference for program offices and regions in developing, evaluating, or revising their own clearance procedures.[18] However, some survey respondents and EPA regional employees whom we interviewed as part of our survey follow-up efforts indicated that they were unaware of the *Best Practices* document. This document may have helped them overcome the clearance challenges faced in their offices or regions.

As of October 2019, the EPA was working on an agencywide electronic clearance system (Appendix A, Action Item 13) to use in conjunction with the existing Science and Technical Information Clearance System, which is primarily used by ORD researchers for their research papers. According to the SIO, those offices

[18] These best practices for clearance do not apply to scientific products released through the EPA's Action Development Process and Integrated Science Assessments. Agency actions, as used in the Action Development Process, include proposed rules and final rules signed by the administrator and significant guidance documents.

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that choose to adopt the new electronic clearance system will adhere to the *Best Practices* document, as the new system is being designed considering the approaches outlined in that document.

The new clearance system, when completed, could address concerns across the Agency about timely release and transparency by enabling EPA staff (beyond researchers) to see where their products are in the clearance process at any time. The system could allow broader tracking of "scientific products" (beyond research papers) to expedite release and identify what parts of the process may be impeding release.

Recommendation

We recommend that the EPA science advisor, in coordination with the assistant administrator for Mission Support:

6. Complete the development and implementation of the electronic clearance system for scientific products across the Agency.

Enhancing SI Adjudication Procedures

As of January 2020, the SI Committee was finalizing new procedures for addressing allegations of SI Policy violations. Those procedures were being designed to help:

- EPA employees and decision-makers identify possible violations of the SI Policy.
- The SIO and DSIOs identify, evaluate, and make determinations about allegations of SI Policy violations.

The SIO said that the SI Program has been operating under a draft of these new procedures as part of a pilot program until the procedures are finalized.

Forty-two percent (1,166 of 2,789) of survey respondents involved in science indicated that they were not comfortable reporting SI concerns. Of the 207 respondents who had reported an allegation of an SI violation, a majority expressed a dissatisfaction with the timeliness (133) or objectivity (144) of the process. Not all of these respondents may have reported the SI concerns to the SI Program; for example, they may have reported to a supervisor. The SI Program can only address how the concerns reported to the Program are handled.

The new procedures may help address some of the concerns identified in our survey. For example, the draft of these new procedures establishes timelines for screening queries, gathering additional information in instances where there is a reasonable basis to suspect an SI violation, and making determinations as to whether an SI violation occurred. The draft procedures also provide guidance on

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what occurs at each of these stages. As the blue box below shows, the lack of finalized, Agency-approved procedures for adjudicating potential SI violations—particularly for high-profile cases—limits the EPA's ability to assess whether SI complaints are adjudicated properly (for example, timely and objectively).

Process for Adjudicating High-Profile SI Allegations

We identified two allegations—out of the 79 total allegations submitted to the SI Program since it was established in 2012—involving high-profile issues or senior officials in the Agency. The draft version of the new adjudication procedures states:

> The Scientific Integrity Program may convene an internal Review Panel to review the evidence and determine whether there was a violation of EPA's Scientific Integrity Policy. Circumstances that could warrant a Review Panel include evidence that is complex or that involves multiple offices, or an allegation that involves a senior official or political appointee. The Review Panel is comprised of members of EPA's Scientific Integrity Committee, including at least one member from an office not affiliated with the Subjects or Submitters. … The Review Panel approves a written report to summarize its findings, determination, and recommendations. (Section 4.4.1)

However, in one of the two high-profile cases we identified, the SI Program had not, as of November 2019, convened a review panel. SI Committee members were reluctant to become involved in the adjudication because it involved senior officials or political appointees. The inability to convene a review panel inhibits the ability of the SI Program to adequately adjudicate cases and hampers full implementation of the SI Policy.

Recommendations

We recommend that the EPA science advisor, with the assistance of the Scientific Integrity Committee:

7. Finalize and release the procedures for addressing and resolving allegations of a violation of the Scientific Integrity Policy, and incorporate the procedures into scientific integrity outreach and training materials.

8. Develop and implement a process specifically to address and resolve allegations of Scientific Integrity Policy violations involving high-profile issues or senior officials, and specify when this process should be used.

Clarifying the Roles of SI Committee Members

Our audit identified differing views on the role and responsibilities of the DSIOs. For example, perceived expectations of DSIOs vary regarding:

- Their communication of requests for advice or allegations of SI Policy violations to the SIO.
- How FMFIA reporting—which is typically coordinated by the DSIOs—is used to develop future SI Program work plans.

The DSIO role is a collateral duty, meaning it is performed in addition to the employee's primary duties. The time devoted to the position varies widely across

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regions and program offices. The seniority of the position also varies; for example, some DSIOs are in Senior Executive Service-level positions, while others are in General Schedule staff-level positions. The draft procedures for addressing allegations of an SI violation state that the DSIO has the discretion to take corrective action in cases where the SI Policy may have been violated. However, for staff-level DSIOs, it is unclear how this discretion could practically be used, particularly if the corrective action involves a higher-level official in the DSIO's organization.

There is no finalized charter for the SI Policy. A charter or clearly defined roles and procedures for the SI Committee would give program offices and regions clear expectations for DSIOs across the EPA, including who should serve in the role and the level of resources needed to be successful. In August 2019, the SI Program provided the OIG with a draft charter for the SI Committee. While this draft charter did not cover all the issues described above, the SIO indicated that these issues would be addressed in the next version of the charter.

The lack of a finalized charter or procedures describing the roles and responsibilities of the SI Committee impedes the ability of the committee to assess its own implementation responsibilities and, more broadly, the implementation of the SI Policy across the Agency.

Recommendation

We recommend that the EPA science advisor, with the assistance of the Scientific Integrity Committee:

9. Finalize and implement a charter or procedures to clarify the roles and responsibilities of Scientific Integrity Committee members.

Improving Tracking and Communication of Adjudication Outcomes

According to the SI Policy, the SI Program is responsible for holding annual agencywide meetings and developing annual reports that should include, but not be limited to, the findings of SI violations. The SI Program posts annual reports to its public webpage.

Based on our survey results and interviews, many Agency employees indicated that they do not believe SI violations are being reviewed or acted upon. Survey respondents indicated that they are not aware of how SI complaints are adjudicated and, in some cases, do not understand the outcomes of SI adjudication. They also raised concerns and expressed a lack of awareness about the adjudication outcomes of major SI allegations—for example, a former

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Opportunity to Improve Communication of Substantiated Violations of SI Policy

In October 2017, several members of Congress wrote a letter to the EPA administrator detailing an SI allegation: that the EPA's Office of Public Affairs canceled prearranged presentations for three EPA-affiliated scientists at an EPA-funded workshop titled *State of Narragansett Bay and Its Watershed Workshop*. The presentations included the keynote address and a panel discussion about present and future biological implications of climate change on Narragansett Bay.

Five EPA employees also formally submitted this allegation to the SIO as a potential violation of the SI Policy.

The then-administrator's December 2017 response to Congress substantiated the allegation and highlighted three key outcomes:

- Procedures were put in place to prevent such an occurrence in the future.
- The ORD's political and career senior leaders were assured that they have authority to make decisions about event participation going forward.
- The EPA verified its commitment to upholding its SI Policy, which "ensures that the Agency's scientific work is of the highest quality, is presented openly and with integrity, and is free from political interference."

However, the SI Program did not communicate the outcome of this substantiated allegation at its June 2018 annual agencywide meeting on SI, even though other substantiated allegations were reported then. In addition, as of December 2019, the SI Program's annual report for FY 2018—another avenue to communicate the outcomes of this allegation—had not yet been finalized.

administrator's public statements on climate change and Region 1 scientists being prevented from presenting at a research conference.[19]

Annual reports on the findings of SI violations have not been completed and distributed to the public in a timely manner. For example, the SI Program annual reports for FYs 2017 and 2018 were not completed before the respective annual agencywide meetings on SI in 2018 and 2019. Furthermore, as of December 2019, the FY 2018 annual report on SI violations remained unpublished, although a draft was provided to the OIG. According to the SI Program, these incomplete annual reports are due, in part, to competing priorities. The blue sidebar to the left further details how communication regarding the adjudication of high-profile violations could be improved.

The SI Program uses a database to track the status and general outcomes of SI allegations. However, the SI Program does not consistently track and report the specific corrective actions and consequences resulting from substantiated allegations, in part, due to confidentiality and privacy issues, as well as the SI Committee's belief that its primary role is to resolve the loss of SI rather than become involved in the causes or consequences for SI Policy violations.[20] As a result, annual SI reports summarizing how complaints were adjudicated do not always provide information on the nature of the complaint (for example, program office or subject matter), how it was resolved, and the resulting corrective actions.

Additionally, annual reports inconsistently report whether allegations are substantiated, dismissed, or resolved without proceeding through the adjudication process. For example, allegations may be listed as "resolved" with no other

[19] In 2017, the SI Program conducted an inquiry for an external complaint—which was initially received by the OIG—alleging that the then-administrator's public statements on climate change violated various parts of the SI Policy, including exaggerating the uncertainty associated with climate change science. The SI Committee found that the administrator did not violate the SI Policy because he was expressing an opinion about science, which was not made in a decisional context.

[20] "Corrective action" refers to action needed to uphold the EPA's SI Policy. Per the SI Program's draft procedures for addressing allegations of SI Policy violations, examples include "ensuring expression of differing scientific opinions, amending the author list of a manuscript, and correcting plagiarism to ensure sources are cited appropriately." In this context, "consequences" means any disciplinary actions resulting from SI Policy violations.

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description or explanation of how they were resolved or the conditions that created the issues in the first place. Table 4 presents examples of adequate and inadequate descriptions of alleged SI violations, as presented in the FY 2017 annual SI report.

Table 4: Descriptions of alleged SI violations

Adequately described SI allegation	Inadequately described SI allegation
As presented in the annual report:	
Allegation: An EPA employee disagreed with a methodology used by the EPA. Outcome: An alternative dispute resolution process was used to evaluate this allegation. An SI Review Panel found that the SI Policy was not violated because the employee had been able to express a differing scientific opinion and there was no evidence of retaliation.	Allegation: A staff member submitted an allegation that the release of a report that was under development for several years was being delayed by management. Outcome: The SIO talked with the manager and the report was released one week after the allegation was submitted.
OIG analysis:	
This description provides sufficient detail on the complaint and outcome by including the: • Methodology used to determine the outcome of the allegation. • Definitive adjudication outcome (that is, whether the SI Policy was violated). • Justification for the adjudication. A description of corrective actions and any longer-term changes or consequences to address the cause of the problem was not needed because the allegation was not substantiated. Additional details on the program office and subject matter may be appropriate in some cases.	This description provides insufficient detail because it does not: • Provide a definitive adjudication outcome or justification, nor did it indicate the allegation was resolved via the advice/assistance process. • Describe corrective actions and any longer-term changes or consequences to address the cause of the problem.

Source: OIG analysis of the EPA's FY 2017 Annual Report on SI.

Completing the prior-year annual report before the annual agencywide meeting on SI would facilitate reporting of the findings of SI violations and the status of SI within the Agency, as required by the SI Policy. If the outcomes of major SI allegations, the corrective actions required, and the consequences for violating the SI Policy are not made public in a timely manner—or if these elements are not explained in more detail via annual reports or other channels—EPA employees and the public may perceive that the SI Policy is ineffectual, which reduces the incentive for employees to report potential SI violations and comply with the Policy.

Recommendations

We recommend that the EPA science advisor, with the assistance of the Scientific Integrity Committee:

10. Summarize allegations of scientific integrity violations in the Scientific Integrity Program's annual reports, as applicable and subject to the applicable privacy protections, including:

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a. Adjudication outcome.
b. Description of the process used to reach the adjudication outcome.
c. Description of corrective actions and any longer-term changes or consequences to address the cause of substantiated violations.
d. Whether and how the allegation was resolved through the advice/assistance process.

11. Finalize and post to the EPA's public website prior-year annual reports on scientific integrity.

12. Develop a timeline or procedure that ensures that the prior-year annual report on scientific integrity is completed and made publicly available before each annual agencywide meeting on scientific integrity.

Conclusion

The SI Policy is wide-ranging, covering areas from quality standards for scientific products to communication with the public to professional development of scientists. The Policy's intention is to assure SI throughout the EPA. While it describes the expectation that all employees adhere to the SI Policy, including the affirmative responsibility to report any breach of the Policy, the SI Policy places the specific responsibility of implementing the Policy on the SI Committee. Importantly, the SI Program has already identified—through an extensive evaluative process, including a 2016 survey and an external study—what needs to be done to more fully implement the Policy and adhere to its requirements. As a result of our audit, we have made additional recommendations to address other areas where implementation of the SI Policy could be improved, such as finalizing procedures to address allegations of SI violations, tracking mandatory SI training, and supporting release of scientific products through a centralized clearance system. These recommendations—together with our recommendation in Chapter 2 for senior political leadership to address broader, cultural issues related to SI—will help fulfill the specific requirements of the SI Policy, facilitate a culture of SI throughout the EPA, and promote scientific and ethical standards.

Agency Response and OIG Assessment

The Agency agreed with our recommendations and provided acceptable corrective actions. Recommendations 5 and 9 have been completed, and the others are resolved with corrective actions pending. For Recommendation 7, the Agency revised its planned completion date to September 30, 2020. The Agency's response to our draft report is in Appendix D.

The Agency also provided technical comments on the draft report, and we revised the report as we deemed appropriate. Regarding Recommendation 10.c, the Agency said in its technical comments, "While the Scientific Integrity Committee

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panel might recommend corrective actions/consequences/changes to address substantiated violations, the decision whether to impose them rests with the supervisor of the person against whom a violation has been substantiated." We agree with this comment but did not make changes to the recommendation language, as the existing language does not suggest that the SI Committee is making decisions to impose a corrective action against an employee. It only recommends that the EPA science advisor summarize in the annual report any corrective actions or longer-term changes or consequences that were put in place to address the cause of substantiated violations—as applicable and subject to applicable privacy protections.

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Status of Recommendations and Potential Monetary Benefits

RECOMMENDATIONS

Rec. No.	Page No.	Subject	Status[1]	Action Official	Planned Completion Date	Potential Monetary Benefits (in $000s)
1	19	Determine the extent and cause of the concerns related to culture and "tone at the top," based on the indicators from the OIG's scientific integrity survey. Issue the results to all EPA staff and make available to the public, including planned actions to address the causes.	R	Deputy Administrator	9/30/20	
2	22	With the assistance of the Scientific Integrity Committee, develop and identify which performance measures will be used to define Scientific Integrity Program success and effective Scientific Integrity Policy implementation.	R	EPA Science Advisor	12/30/21	
3	22	With the assistance of the Scientific Integrity Committee, develop and execute a plan, including resource needs and milestones, to address the remaining action items identified by the Agency to improve the implementation of its Scientific Integrity Policy.	R	EPA Science Advisor	1/30/21	
4	23	In coordination with the assistant administrator for Mission Support and with the assistance of the Scientific Integrity Committee, develop and implement a process for tracking completion of scientific integrity training for all new employees, including senior leadership and political appointees.	R	EPA Science Advisor	7/31/20	
5	23	In coordination with the assistant administrator for Mission Support and with the assistance of the Scientific Integrity Committee, regularly provide updated information on scientific integrity training completion rates to Scientific Integrity Committee members and supervisors.	C	EPA Science Advisor	3/4/20	
6	25	In coordination with the assistant administrator for Mission Support, complete the development and implementation of the electronic clearance system for scientific products across the Agency.	R	EPA Science Advisor	6/30/22	
7	26	With the assistance of the Scientific Integrity Committee, finalize and release the procedures for addressing and resolving allegations of a violation of the Scientific Integrity Policy, and incorporate the procedures into scientific integrity outreach and training materials.	R	EPA Science Advisor	9/30/20	
8	26	With the assistance of the Scientific Integrity Committee, develop and implement a process specifically to address and resolve allegations of Scientific Integrity Policy violations involving high-profile issues or senior officials, and specify when this process should be used.	R	EPA Science Advisor	6/30/21	
9	27	With the assistance of the Scientific Integrity Committee, finalize and implement a charter or procedures to clarify the roles and responsibilities of Scientific Integrity Committee members.	C	EPA Science Advisor	3/19/20	

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RECOMMENDATIONS

Rec. No.	Page No.	Subject	Status[1]	Action Official	Planned Completion Date	Potential Monetary Benefits (in $000s)
10	29	With the assistance of the Scientific Integrity Committee, summarize allegations of scientific integrity violations in the Scientific Integrity Program's annual reports, as applicable and subject to the applicable privacy protections, including: a. Adjudication outcome. b. Description of the process used to reach the adjudication outcome. c. Description of corrective actions and any longer-term changes or consequences to address the cause of substantiated violations. d. Whether and how the allegation was resolved through the advice/assistance process.	R	EPA Science Advisor	12/30/20	
11	30	With the assistance of the Scientific Integrity Committee, finalize and post to the EPA's public website prior-year annual reports on scientific integrity.	R	EPA Science Advisor	7/31/20	
12	30	With the assistance of the Scientific Integrity Committee, develop a timeline or procedure that ensures that the prior-year annual report on scientific integrity is completed and made publicly available before each annual agencywide meeting on scientific integrity.	R	EPA Science Advisor	7/31/20	

[1] C = Corrective action completed.
R = Recommendation resolved with corrective action pending.
U = Recommendation unresolved with resolution efforts in progress.

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Status of EPA-Identified Actions to Enhance Implementation of the SI Policy

In response to the results of its FY 2016 SI survey, the EPA identified 16 action items to be taken. As of October 2019, the SI Program has overseen the completion of five and partial completion of seven of the action items. Four have not been started due, in part—according to the SIO—to resource limitations of the SI Program. The table below provides more information on the status of these actions based on information provided by the Agency and OIG analysis.

Action item	Status	Additional information provided by EPA
To increase awareness and understanding of the SI Policy		
1. Release a training program with animated whiteboard videos of introductory information and a case study on SI.		The EPA provided this training—developed by the SI Program in 2016—to 5,720 employees across EPA offices, programs, and regions.
2. Present all new employees with a presentation by the SIO and an animated whiteboard video as part of their onboarding process.		Initiated in January 2017, this training is a mandatory requirement for all new EPA employees and must be completed within their first six months.
3. Provide a briefing on SI (by the SIO) to all new members of the Senior Executive Service and new SL, ST, and Title 42 employees on SI as part of their onboarding process.		After first providing a briefing to these employees in 2016, the SIO continued to offer this action through 2017, providing in-person training to the incoming class of Senior Executive Service and special hires. The SIO told us that there has been no opportunity to brief the incoming class of senior managers in 2018 or 2019, despite the SIO's requests to do so. The SIO is not aware of any sessions scheduled for 2020.
4. Enhance and update both SI intranet and internet webpages to increase access to available information and resources on SI at the EPA.		The action item was completed in 2016. In addition, the SIO reported that the webpages are updated at least annually and more often as needed.
5. Create additional outreach materials for use by DSIOs.		Two brochures on SI—one for internal audiences and one for external audiences—were updated in January 2019. In addition, the SI FY 2019 work plan includes the completion of several posters, which have been designed, and an SI Handbook is expected to be completed in FY 2020.
6. Work with the EPA's Whistleblower Protection Ombudsman in the OIG to raise awareness of		The SIO met with the EPA's whistleblower ombudsman (now referred to as the whistleblower coordinator) about raising awareness of whistleblower rights and responsibilities. In 2017, the ombudsman spoke at the

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Action item	Status	Additional information provided by EPA
whistleblower rights and responsibilities.		annual agencywide meeting on SI. In addition, the ombudsman is invited to quarterly coordination meetings between the SIO and OIG.
To promote a culture of scientific integrity		
7. Initiate dialogues with EPA managers to clearly define the responsibilities of management and senior leadership.		As of February 2020, the SI Program has trained over 700 EPA managers through the "Management Dialogues on Scientific Integrity."
8. Work with managers to develop ways to increase transparency in decision-making and increase understanding of the role that science plays in decision-making at the EPA.		The SI Program plans to create outreach materials in FYs 2019 and 2020 to help increase managers' understanding of the role of science in decision-making and reflect the importance of transparency in decision-making.
9. Develop the *Differing Scientific Opinions Policy* for use when an EPA employee substantively engaged in the science informing an EPA policy decision disagrees with the scientific data, scientific interpretations or scientific conclusions that will be relied upon.		According to the SIO, the SI Program has developed a document titled *Approaches for Expression and Resolving Differing Scientific Opinions,* which, as of February 2020, has been reviewed and cleared and is ready for posting on the Agency's website. (The OIG has not reviewed this document.)
10. Work with managers to make certain that there is widespread understanding of scientists' right to review, correct, and improve the scientific content of any proposed Agency document intended for public dissemination that significantly relies on their research.		The SI FY 2019 work plan calls for the completion of four documents to address this action item: • Standard operating procedure for last right of review. • Standard operating procedure for personal views exception. • Best practices for authorship. • Addendum on clearance best practices in ensuring SI. The SI Program anticipates that completion of these documents will be delayed until FY 2020, due to (1) an increase in allegations and requests for advice and (2) the FY 2019 federal lapse in funding.
11. Devise ways to provide additional scientific support to managers who supervise, utilize, and/or communicate science.		Some of this is covered under the "Management Dialogues on Scientific Integrity" training program. An additional publication on this topic is planned for FY 2020.

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Action item	Status	Additional information provided by EPA
To improve practices for releasing scientific information to the public		
12. Finalize and release *Best Practices for Clearance of Scientific Products at EPA* that emphasize transparency, predictability, and timeliness.		*Best Practices for Clearance of Scientific Products* was issued by the EPA in May 2018.
13. Work with program offices and regions to evaluate, revise, and/or enhance their clearance procedures.		The EPA is developing an electronic clearance system, which will incorporate aspects of the *Best Practices for Clearance of Scientific Products* document. The SIO plans to meet with DSIOs to review the clearance procedures used by their individual offices.
14. Work with the Office of Public Affairs to increase access of the news media to scientists and their research results.		The SI Committee has discussed the issue, but specific activities or steps have not been established. Several higher priority activities may need to be completed before progressing further on this item.
15. Encourage effective media training for EPA scientists and technical staff.		A draft FY 2019 SI work plan identified a project to reexamine the EPA's policy for scientist access to the media through a "Scientist and the Media Project." However, the SI Program said that it does not have the resources for this project or overall effort.
To promote professional development of EPA scientists and technical staff		
16. Work with offices, programs, and regions to promote consistent and transparent criteria for deciding who receives opportunities for professional development subject to available resources and training and other priorities.		The SI Committee has discussed this issue, but specific activities/steps have not been established. Several higher priority activities may need to be completed before moving further on this item.

Source: EPA information and OIG analysis.

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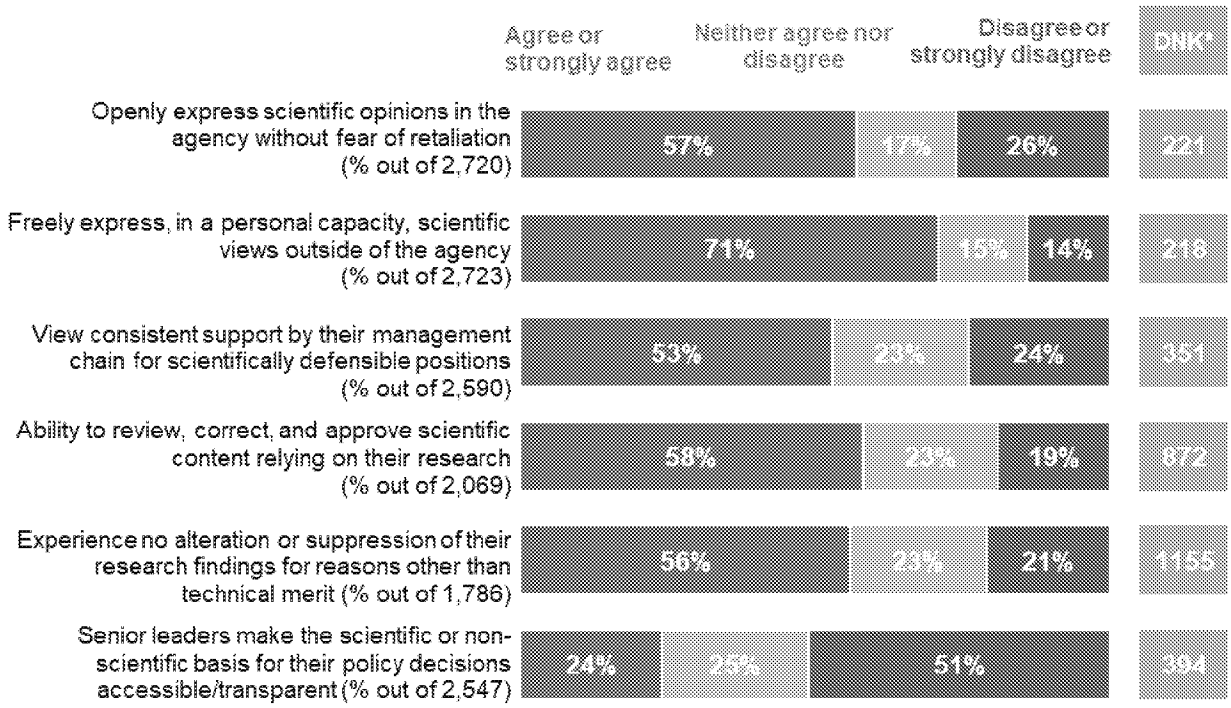
Summary Graphics from OIG's 2018 SI Survey

Table B-1: Awareness of the SI Policy—comparison of respondents involved in science versus respondents not involved in science

Respondents Involved in Science *Total: 3,084*	Respondents Not Involved in Science *Total: 1,181*
Aware of the SI Policy	
98% (3,011)	83% (976)
Somewhat or very familiar with the SI Policy	
79% (2,432)	39% (460)
Not aware of the SI Policy before this survey	
2% (73)	17% (205)

Source: OIG analysis of survey results.

Figure B-1: Respondent experience with aspects of EPA's Culture of SI (% with basis to judge)



Source: OIG analysis of survey results.

Note: The number of respondents with a basis to judge varied.

* *DNK* stands for *Do Not Know*. Respondents who indicated that they had "No basis to judge / Do not know" were not included in the percentage comparison.

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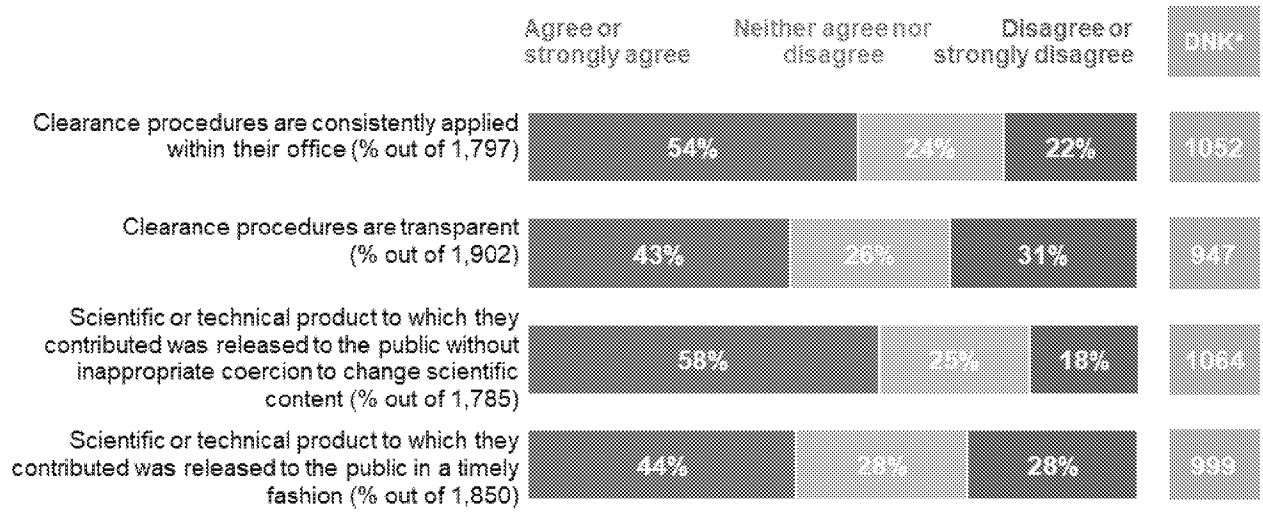
Figure B-2: Survey respondents experience with EPA's clearance procedures for release of science or technical documents (% with basis to judge)



Source: OIG analysis of survey results.

Note: The number of respondents with a basis to judge varied. Percentages may not equal 100% due to rounding.

* *DNK* stands for *Do Not Know*. Respondents who indicated that they had "No basis to judge / Do not know" were not included in the percentage comparison.

Table B-2: Respondents' experience with professional development opportunities (% with basis to judge)

I am encouraged to publish and present research findings in peer-reviewed, professional, or scholarly journals and at professional meetings.		
60% Yes *(850 out of 1,409)*		**40% No** *(559 out of 1,409)*
I am allowed to become an editor or editorial board member of peer-reviewed, professional, or scholarly journals.		
71% Yes *(621 out of 869)*		**29% No** *(248 out of 869)*
I am allowed to participate in professional societies, committees, task forces, and other specialized bodies of professional societies.		
88% Yes *(1,612 out of 1,834)*		**12% No** *(222 out of 1,834)*
I am encouraged to obtain training to keep current my scientific qualifications and professional certifications.		
73% Yes *(1,439 out of 1,967)*		**27% No** *(528 out of 1,967)*
I am allowed to accrue professional awards, honors, and patents for my research and discoveries.		
82% Yes *(755 out of 925)*		**18% No** *(170 out of 925)*

Source: OIG analysis of survey results.

Note: Respondents who selected "N/A" were not included in this comparison.

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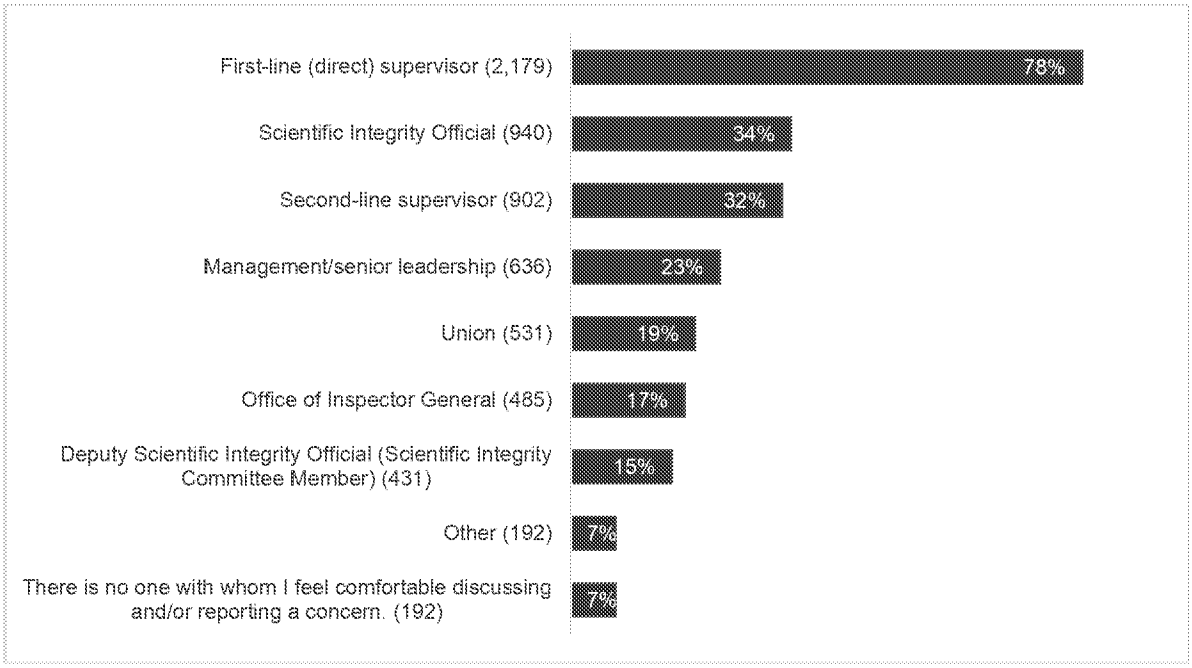
Figure B-3: With/to whom respondents were likely to discuss/report a concern related to potential loss of SI (% out of 2,788)



Source: OIG analysis of survey results.

Note: Percentages do not equal 100 as respondents could select or provide more than one response. Percentages presented are out of total number of respondents (2,788). Total number of responses was 6,488.

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Raw Data from OIG's 2018 SI Survey

The OIG's 2018 SI Survey contained five sections. Question 6 used skip-logic to direct respondents to either a long or short version of the survey. The question identified whether the respondent worked in or supervised science at the EPA, and the survey then directed those respondents involved with science at the EPA to the long version and those respondents not involved with science at the EPA to the short version. Skip-logic was also used throughout the survey to direct respondents to certain questions based on their prior responses. Not all questions garnered the same number of responses because not all respondents may have answered the question or respondents may not have had a basis to answer a particular question. For some questions, respondents could select more than one response as they were asked to "Select all that apply."

SECTION 1: DEMOGRAPHICS

All survey respondents were provided the questions in this section.

Question 1: What is your current employment classification at the EPA?

	Number	Percent
GS (Civil Service) or PHS (Commissioned Corps)	3,616	83.70
SES, SL, ST, Title 42	111	2.57
EPA Contractor	416	9.63
Political appointee/administratively determined position	13	0.30
Other (please specify)	164	3.80
Total respondents	**4,320**	
"Other" responses omitted to preserve confidentiality.		

Question 2: Do you work in a supervisory role (that is, first-line supervisor or above) at the EPA?

	Number	Percent
Yes	643	14.88
No	3,677	85.12
Total respondents	**4,320**	

Question 3: How long have you worked at the EPA?

	Number	Percent
Less than 1 year	188	4.35
1-5 years	790	18.29
6-10 years	691	16.00
11-15 years	544	12.59
More than 15 years	2,107	48.77
Total respondents	**4,320**	

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Question 4: For which EPA Program Office or Region do you work?

	Number	Percent
Office of the Administrator (OA)	95	2.21
Office of Administration and Resource Management (OARM)	145	3.37
Office of Air and Radiation (OAR)	375	8.71
Office of Chemical Safety and Pollution Prevention (OCSPP)	314	7.30
Office of the Chief Financial Officer (OCFO)	43	1.00
Office of Enforcement and Compliance Assurance (OECA)	162	3.76
Office of Environmental Information (OEI)	112	2.60
Office of General Counsel (OGC)	94	2.18
Office of Inspector General (OIG)	95	2.21
Office of Land and Emergency Management (OLEM)	144	3.35
Office of Research and Development (ORD)	604	14.04
Office of Water (OW)	165	3.83
Office of International and Tribal Affairs (OITA)	19	0.44
Region 1	137	3.18
Region 2	160	3.72
Region 3	218	5.07
Region 4	221	5.14
Region 5	272	6.32
Region 6	224	5.21
Region 7	145	3.37
Region 8	144	3.35
Region 9	187	4.35
Region 10	141	3.28
Other (please specify)	87	2.02
Total respondents	**4,303**	
"Other" responses omitted to preserve confidentiality.		

Note: The survey was released in November 2018 prior to the EPA's reorganization of OARM and OEI into the new Office of Mission Support (OMS), which was effective on November 26, 2018.

Question 5: In what part of ORD do you work?

	Number	Percent
Laboratory or Center	467	77.32
Office or Headquarters	137	22.68
Total respondents	**604**	

Note: This question was provided to only those respondents who selected "ORD" in Question 4.

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Question 6: Please select "Yes" if you spend any amount of time at work on any of the following areas:

- Create or conduct science through basic or applied research or synthesize/analyze existing data for assessments (for example: modeling, data collection in the field or laboratory, analysis or evaluation of lab samples, economic analysis, risk assessment, or other technical activities).
- Use scientific data or conclusions to inform agency actions or decisions or develop policies, guidance or regulations (for example: policy analysis, rule or policy development, permit writing, pesticide registrations, compliance approvals, grant review, inspections or evaluations, enforcement, or similar activities).
- Communicate science or communicate about scientific activities (internally or externally) via any media (for example: public affairs, internal communication, community outreach, stakeholder engagement, write/publish papers or press releases, or similar activities).
- Manage science, scientists or technical activities involving personnel performing such tasks (for example: direct, supervise, manage or oversee scientific activities).

	Number	Percent
Yes	3,083	72.20
No	1,187	27.80
Total respondents	**4,270**	

SECTION 2: AWARENESS AND UNDERSTANDING OF POLICY AND PROCEDURES

All survey respondents were provided the questions in this section. The responses of those that are involved in science at the EPA (selected "yes" to Question 6) were collected by the survey instrument under Questions 7–11. The responses of those that are not involved in science at the EPA (selected "no" to Question 6) were collected under questions 40-44. For each of the five questions, we have provided the combined data for all respondents as well as the data broken out for respondents involved and not involved in science at the EPA.

Questions 7 & 40 combined: How familiar are you with the EPA's Scientific Integrity Policy?

	Number	Percent
I am very familiar with the policy.	859	20.14
I am somewhat familiar with the policy.	2,033	47.67
I am aware that the EPA has the policy, but I am not familiar with it.	1,095	25.67
I was not aware of the policy until I received this survey.	278	6.52
Total Respondents	**4,265**	

Questions 7 & 40 separated: How familiar are you with the EPA's Scientific Integrity Policy?

	Question 7 (involved in science)		Question 40 (not involved in science)	
	Number	Percent	Number	Percent
I am very familiar with the policy.	781	25.32	78	6.60
I am somewhat familiar with the policy.	1,651	53.53	382	32.35
I am aware that the EPA has the policy, but I am not familiar with it.	579	18.77	516	43.69
I was not aware of the policy until I received this survey.	73	2.37	205	17.36
Total respondents	**3,084**		**1,181**	

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Questions 8 & 41 combined: How did you learn about the existence of the Scientific Integrity Policy? Select all that apply.

	Number	Percent*
New hire orientation	425	10.75
Online training module	975	24.66
An informational poster	262	6.63
EPA website	1,062	26.86
Annual Report on Scientific Integrity at the EPA	740	18.72
Agencywide Annual Meeting on Scientific Integrity (aka Annual Conversation with the Scientific Integrity Official)	458	11.58
Presentation by Scientific Integrity Official	1,062	26.86
My supervisor	533	13.48
The Deputy Scientific Integrity Official in my program/region	300	7.59
EPA leadership memorandum/email communication	1,277	32.30
Staff/leadership team meeting	440	11.13
Not sure/Don't remember	729	18.44
Other (please specify)	303	7.66
Total respondents	**3,954**	

Note: Respondents who selected "I was not aware of the policy until I received this survey" in Questions 7 or 40 did not receive this question. * Percentages do not equal 100 as respondents could select or provide more than one response. Percentages presented are out of total number of respondents.

Questions 8 & 41 separated: How did you learn about the existence of the Scientific Integrity Policy? Select all that apply.

	Question 8 (involved in science)		Question 41 (not involved in science)	
	Number	Percent*	Number	Percent*
New hire orientation	346	11.59	79	8.16
Online training module	837	28.03	138	14.26
An informational poster	200	6.70	62	6.40
EPA website	762	25.52	300	30.99
Annual Report on Scientific Integrity at the EPA	604	20.23	136	14.05
Agencywide Annual Meeting on Scientific Integrity (aka Annual Conversation with the Scientific Integrity Official)	408	13.66	50	5.17
Presentation by Scientific Integrity Official	956	32.02	106	10.95
My supervisor	463	15.51	70	7.23
The Deputy Scientific Integrity Official in my program/region	278	9.31	22	2.27
EPA leadership memorandum/email communication	1,045	35.00	232	23.97
Staff/leadership team meeting	367	12.29	73	7.54
Not sure/Don't remember	499	16.71	230	23.76
Other (please specify)	217	7.27	86	8.88
Total respondents	**2,986**		**968**	
"Other" responses omitted to preserve confidentiality.				

Note: Respondents who selected "I was not aware of the policy until I received this survey" in Questions 7 or 40 did not receive this question. * Percentages do not equal 100 as respondents could select or provide more than one response. Percentages presented are out of total number of respondents.

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Questions 9 & 42 combined: Have you received training (at any point in your career) on the EPA's Scientific Integrity Policy? Select all that apply.

	Number	Percent*
Yes, I attended a classroom training/presentation	1,117	28.25
Yes, I received web-based training	1,085	27.44
Yes, I attended a webinar	427	10.80
Yes, I received this training during new hire orientation	226	5.72
No, I have not received any training	957	24.20
Not sure/Don't remember.	911	23.04
Total respondents	**3,954**	

Note: Respondents who selected "I was not aware of the policy until I received this survey" in Questions 7 or 40 did not receive this question. * Percentages do not equal 100 as respondents could select or provide more than one response. Percentages presented are out of total number of respondents.

Questions 9 & 42 separated: Have you received training (at any point in your career) on the EPA's Scientific Integrity Policy? Select all that apply.

	Question 9 (involved in science)		Question 42 (not involved in science)	
	Number	Percent*	Number	Percent*
Yes, I attended a classroom training/presentation	995	33.32	122	12.60
Yes, I received web-based training	935	31.31	150	15.50
Yes, I attended a webinar	376	12.59	51	5.27
Yes, I received this training during new hire orientation	188	6.30	38	3.93
No, I have not received any training	542	18.15	415	42.87
Not sure/Don't remember.	647	21.67	264	27.27
Total respondents	**2,986**		**968**	

Note: Respondents who selected "I was not aware of the policy until I received this survey" in Questions 7 or 40 did not receive this question. * Percentages do not equal 100 as respondents could select or provide more than one response. Percentages presented are out of total number of respondents.

Questions 10 & 43 combined: With what aspects of Whistleblower Protection at the EPA are you familiar? Select all that apply.

	Number	Percent*
The definition of whistleblowing	3,766	90.46
The prohibited personnel practice of retaliating against an employee for whistleblowing	3,829	91.98
The role of the Office of Special Counsel (OSC) and the Merit Systems Protection Board (MSPB) in addressing whistleblower retaliation	1,894	45.50
The role of the EPA's Whistleblower Protection Coordinator (previously "Ombudsman")	1,546	37.14
How to contact the EPA's Whistleblower Protection Coordinator (previously "Ombudsman")	1,493	35.86
I am not familiar with any aspect of the Whistleblower Protection described above.	149	3.58
Total respondents	**4,163**	

* Percentages do not equal 100 as respondents could select or provide more than one response. Percentages presented are out of total number of respondents.

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Questions 10 & 43 separated: With what aspects of Whistleblower Protection at the EPA are you familiar? Select all that apply.

	Question 10 (involved in science)		Question 43 (not involved in science)	
	Number	Percent*	Number	Percent*
The definition of whistleblowing	2,780	92.73	986	84.64
The prohibited personnel practice of retaliating against an employee for whistleblowing	2,836	94.60	993	85.24
The role of the Office of Special Counsel (OSC) and the Merit Systems Protection Board (MSPB) in addressing whistleblower retaliation	1,387	46.26	507	43.52
The role of the EPA's Whistleblower Protection Coordinator (previously "Ombudsman")	1,121	37.39	425	36.48
How to contact the EPA's Whistleblower Protection Coordinator (previously "Ombudsman")	1,055	35.19	438	37.60
I am not familiar with any aspect of the Whistleblower Protection described above.	66	2.20	83	7.12
Total respondents	**2,998**		**1,165**	

* Percentages do not equal 100 as respondents could select or provide more than one response. Percentages presented are out of total number of respondents.

Questions 11 & 44 combined: Which of the following would be most useful for implementing the EPA's Scientific Integrity Policy? Select all that apply.

	Number	Percent*	Percent* (basis to judge/know)
Best practices documents on topics related to scientific integrity	1,689	40.57	47.22
Standardized guidance (rather than best practices)	1,243	29.86	34.75
More outreach from the Scientific Integrity Official	1,292	31.04	36.12
Mandatory annual training for all staff	1,641	39.42	45.88
Supplemental training on topics related to scientific integrity	1,318	31.66	36.85
Mandatory training for upper management and public affairs staff	1,496	35.94	41.82
Scientific integrity awareness communications from senior leadership	1,479	35.53	41.35
More information/communication on the protections from retaliation, retribution and reprisal	1,075	25.82	30.05
More information/communication on consequences for employee violations of the Scientific Integrity Policy	1,014	24.36	28.35
More information/communication about organizational changes resulting from violations of the Scientific Integrity Policy	1,016	24.41	28.40
None	72	1.73	2.01
No basis to judge/Do not know	586	14.08	---
Other (please describe)	328	7.88	9.17
Total respondents	**4,163**		
Respondents with basis to judge/know	**3,577**		

* Percentages do not equal 100 as respondents could select or provide more than one response. Percentages presented are out of total number of respondents.

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Questions 11 & 44 separated: Which of the following would be most useful for implementing the EPA's Scientific Integrity Policy? Select all that apply.

	Question 11 (involved in science)		Question 44 (not involved in science)	
	Number	Percent*	Number	Percent*
Best practices documents on topics related to scientific integrity	1,346	44.90	343	29.44
Standardized guidance (rather than best practices)	942	31.42	301	25.84
More outreach from the Scientific Integrity Official	1,004	33.49	288	24.72
Mandatory annual training for all staff	1,230	41.03	411	35.28
Supplemental training on topics related to scientific integrity	1,069	35.66	249	21.37
Mandatory training for upper management and public affairs staff	1,233	41.13	263	22.58
Scientific integrity awareness communications from senior leadership	1,181	39.39	298	25.58
More information/communication on the protections from retaliation, retribution and reprisal	836	27.89	239	20.52
More information/communication on consequences for employee violations of the Scientific Integrity Policy	775	25.85	239	20.52
More information/communication about organizational changes resulting from violations of the Scientific Integrity Policy	792	26.42	224	19.23
None	43	1.43	29	2.49
No basis to judge/Do not know	211	7.04	375	32.19
Other (please describe)	291	9.71	37	3.18
Total respondents	**2,998**		**1,165**	
"Other" responses omitted to preserve confidentiality.				

* Percentages do not equal 100 as respondents could select or provide more than one response. Percentages presented are out of total number of respondents.

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SECTION 3: EXPERIENCE/PERCEPTIONS OF SCIENTIFIC INTEGRITY POLICY IMPLEMENTATION IN KEY AREAS

The questions in this section were provided only to those respondents who selected "yes" to Question 6—identified to be involved in science at the EPA.

Question 12: Please indicate how strongly you agree or disagree with the following statements about the EPA's culture of scientific integrity based on your experience within the past 6 months:

Within the EPA, I can openly express my scientific opinions about the agency's scientific work without fear of retaliation.			
	Number	**Percent (total)**	**Percent (basis to judge/know)**
Strongly Agree	473	16.08	17.39
Agree	1,068	36.31	39.26
Neither Agree nor Disagree	474	16.12	17.43
Disagree	445	15.13	16.36
Strongly Disagree	260	8.84	9.56
No basis to judge/Do not know	221	7.51	
Total respondents	**2,941**		
Respondents with basis to judge/know	**2,720**		

In my personal capacity, I can freely express my scientific views provided I specify that I am not speaking on behalf of, or as a representative of, the agency.			
	Number	**Percent (total)**	**Percent (basis to judge/know)**
Strongly Agree	685	23.29	25.16
Agree	1,243	42.26	45.65
Neither Agree nor Disagree	414	14.08	15.20
Disagree	261	8.87	9.59
Strongly Disagree	120	4.08	4.41
No basis to judge/Do not know	218	7.41	
Total respondents	**2,941**		
Respondents with basis to judge/know	**2,723**		

My management chain consistently stands behind scientific staff who put forth scientifically defensible positions (including those that may be controversial).			
	Number	**Percent (total)**	**Percent (basis to judge/know)**
Strongly Agree	446	15.16	17.22
Agree	931	31.66	35.95
Neither Agree nor Disagree	589	20.03	22.74
Disagree	372	12.65	14.36
Strongly Disagree	252	8.57	9.73
No basis to judge/Do not know	351	11.93	
Total respondents	**2,941**		
Respondents with basis to judge/know	**2,590**		

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I have the ability to review, correct and approve the scientific content of an agency document, before public dissemination, that significantly relies on my scientific research, identifies me as an author, and/or represents my scientific opinion.			
	Number	**Percent (total)**	**Percent (basis to judge/know)**
Strongly Agree	340	11.56	16.43
Agree	850	28.90	41.08
Neither Agree nor Disagree	478	16.25	23.10
Disagree	238	8.09	11.50
Strongly Disagree	163	5.54	7.88
No basis to judge/Do not know	872	29.65	
Total respondents	**2,941**		
Respondents with basis to judge/know	**2,069**		

My research findings have not been altered or suppressed for reasons other than technical merit.			
	Number	**Percent (total)**	**Percent (basis to judge/know)**
Strongly Agree	363	12.34	20.32
Agree	646	21.97	36.17
Neither Agree nor Disagree	409	13.91	22.90
Disagree	224	7.62	12.54
Strongly Disagree	144	4.90	8.06
No basis to judge/Do not know	1,155	39.27	
Total respondents	**2,941**		
Respondents with basis to judge/know	**1,786**		

Senior leaders make the scientific and/or non-scientific basis for their policy decisions accessible/transparent.			
	Number	**Percent (total)**	**Percent (basis to judge/know)**
Strongly Agree	171	5.81	6.71
Agree	429	14.59	16.84
Neither Agree nor Disagree	637	21.66	25.01
Disagree	663	22.54	26.03
Strongly Disagree	647	22.00	25.40
No basis to judge/Do not know	394	13.40	
Total respondents	**2,941**		
Respondents with basis to judge/know	**2,547**		

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Question 13: In general, thinking of your experience over the last 6 months, are you satisfied with the culture of scientific integrity at the EPA?

	Number	Percent (total)	Percent (basis to judge/know)
Yes	977	33.55	40.67
No	1,425	48.94	59.33
No basis to judge/Do not know	510	17.51	
Total respondents	**2,912**		
Respondents with basis to judge/know	**2,402**		

Question 14: Please provide comments on the culture of scientific integrity at the EPA, including any observations or examples about behaviors that demonstrate support or a lack of support for a culture of scientific integrity. Please type in "N/A" if no comments.

	Number
Answered (includes N/As)	2,912
Comments omitted to preserve confidentiality.	

Question 15: Many parts of the EPA have specific procedures for obtaining permission for the release of scientific products outside of the agency. Based on your experience within the past 6 months, please indicate how strongly you agree or disagree with the following statements about the EPA's procedures to release scientific information to the public:

The clearance procedure for scientific or technical documents is consistently applied within my office.			
	Number	**Percent (total)**	**Percent (basis to judge/know)**
Strongly Agree	296	10.39	16.47
Agree	679	23.83	37.79
Neither Agree nor Disagree	428	15.02	23.82
Disagree	272	9.55	15.14
Strongly Disagree	122	4.28	6.79
No basis to judge/Do not know	1,052	36.93	
Total respondents	**2,849**		
Respondents with basis to judge/know	**1,797**		

The clearance procedure is transparent.			
	Number	**Percent (total)**	**Percent (basis to judge/know)**
Strongly Agree	225	7.90	11.83
Agree	593	20.81	31.18
Neither Agree nor Disagree	500	17.55	26.29
Disagree	399	14.00	20.98
Strongly Disagree	185	6.49	9.73
No basis to judge/Do not know	947	33.24	
Total respondents	**2,849**		
Respondents with basis to judge/know	**1,902**		

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The scientific or technical products (e.g., papers, datasets, reports, etc.) to which I contribute are released to the public without inappropriate coercion to change scientific content.			
	Number	**Percent (total)**	**Percent (basis to judge/know)**
Strongly Agree	322	11.30	18.04
Agree	707	24.82	39.61
Neither Agree nor Disagree	442	15.51	24.76
Disagree	201	7.06	11.26
Strongly Disagree	113	3.97	6.33
No basis to judge/Do not know	1,064	37.35	
Total respondents	**2,849**		
Respondents with basis to judge/know	**1,785**		

The scientific or technical products (e.g., papers, datasets, reports, etc.) to which I contribute are released to the public in a timely fashion.			
	Number	**Percent (total)**	**Percent (basis to judge/know)**
Strongly Agree	207	7.27	11.19
Agree	609	21.38	32.92
Neither Agree nor Disagree	523	18.36	28.27
Disagree	320	11.23	17.30
Strongly Disagree	191	6.70	10.32
No basis to judge/Do not know	999	35.06	
Total respondents	**2,849**		
Respondents with basis to judge/know	**1,850**		

Question 16: In general, thinking of your experience over the last 6 months, are you satisfied with how the EPA releases scientific information to the public?

	Number	**Percent (total)**	**Percent (basis to judge/know)**
Yes	803	28.19	43.36
No	1,049	36.82	56.64
No basis to judge/Do not know	997	34.99	
Total respondents	**2,849**		
Respondents with basis to judge/know	**1,852**		

Question 17: Please provide comments or suggestions regarding the EPA's release of scientific information to the public. Please type "N/A" if you do not have any comments or suggestions.

	Number
Answered (includes N/As)	2,849
Comments omitted to preserve confidentiality.	

Question 18: Are you familiar with the EPA's Peer Review Policy and/or Peer Review Handbook?

	Number	**Percent**
Yes	1,697	59.88

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No	1,137	40.12
Total respondents	**2,834**	

Question 19: In general, thinking of your experience over the last 6 months, are you satisfied with the use and/or application of peer review at the EPA?

	Number	Percent (total)	Percent (basis to judge/know)
Yes	821	28.97	70.23
No	348	12.28	29.77
No basis to judge/Do not know	1,665	58.75	
Total respondents	**2,834**		
Respondents with basis to judge/know	**1,169**		

Question 20: Please provide comments or suggestions on the EPA's use and/or application of peer review. Please type "N/A" if you do not have any comments or suggestions.

	Number
Answered (includes N/As)	2,834
Comments omitted to preserve confidentiality.	

Question 21: Are you involved in managing or using advice from any EPA Federal Advisory Committee?

	Number	Percent
Yes	389	13.75
No	2,441	86.25
Total respondents	**2,830**	

Question 22: In general, thinking of your experience over the last 6 months, are you satisfied with the advice received from Federal Advisory Committees?

	Number	Percent (total)	Percent (basis to judge/know)
Yes	179	46.13	70.75
No	74	19.07	29.25
No basis to judge/Do not know	135	34.79	
Total respondents	**388**		
Respondents with basis to judge/know	**253**		

Note: This question was provided only to those who selected "yes" in response to Question 21.

Question 23: In general, thinking of your experience over the last 6 months, are you satisfied with how the EPA manages and uses Federal Advisory Committees?

	Number	Percent (total)	Percent (basis to judge/know)
Yes	129	33.25	45.42
No	155	39.95	54.58
No basis to judge/Do not know	104	26.80	
Total respondents	**388**		
Respondents with basis to judge/know	**284**		

Note: This question was provided only to those who selected "yes" in response to Question 21.

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Question 24: Please provide comments or suggestions on the management and use of Federal Advisory Committees at the EPA. Please type "N/A" if you do not have any comments or suggestions.

	Number
Answered (includes N/As)	388
Comments omitted to preserve confidentiality.	

Note: This question was provided only to those who selected "yes" in response to Question 21.

Question 25: Please indicate whether the following professional development opportunities apply to your current position.

I am encouraged to publish and present research findings in peer-reviewed, professional or scholarly journals and at professional meetings.			
	Number	**Percent (total)**	**Percent (basis to judge/know)**
Yes	850	30.22	60.33
No	559	19.87	39.67
N/A	1,404	49.91	
Total respondents	**2,813**		
Respondents with basis to judge	**1,409**		

I am allowed to become an editor or editorial board member of peer-reviewed, professional or scholarly journals.			
	Number	**Percent (total)**	**Percent (basis to judge/know)**
Yes	621	22.08	71.46
No	248	8.82	28.54
N/A	1,944	69.11	
Total respondents	**2,813**		
Respondents with basis to judge	**869**		

I am allowed to participate in professional societies, committees, task forces and other specialized bodies of professional societies.			
	Number	**Percent (total)**	**Percent (basis to judge/know)**
Yes	1,612	57.31	87.90
No	222	7.89	12.10
N/A	979	34.80	
Total respondents	**2,813**		
Respondents with basis to judge	**1,834**		

I am encouraged to obtain training to keep current my scientific qualifications and professional certifications.			
	Number	**Percent (total)**	**Percent (basis to judge/know)**
Yes	1,439	51.16	73.16

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No	528	18.77	26.84
N/A	846	30.07	
Total respondents	**2,813**		
Respondents with basis to judge	**1,967**		

I am allowed to accrue professional awards, honors and patents for my research and discoveries.			
	Number	**Percent (total)**	**Percent (basis to judge/know)**
Yes	755	26.84	81.62
No	170	6.04	18.38
N/A	1,888	67.12	
Total respondents	**2,813**		
Respondents with basis to judge	**925**		

Question 26: In general, thinking of your experience over the last 6 months, are you satisfied with the professional development opportunities offered at the EPA?

	Number	**Percent (total)**	**Percent (basis to judge/know)**
Yes	1,344	47.78	63.67
No	767	27.27	36.33
No basis to judge/Do not know	702	24.96	
Total respondents	**2,813**		
Respondents with basis to judge/know	**2,111**		

Question 27: Please provide comments or suggestions on the professional development of scientists at the EPA. Please type "N/A" if you do not have any comments or suggestions.

	Number
Answered (includes N/As)	2,813
Comments omitted to preserve confidentiality.	

SECTION 4: REPORTING INSTANCES/ALLEGATIONS OF A LOSS OF SCIENTIFIC INTEGRITY (SCIENTIFIC INTEGRITY POLICY VIOLATIONS)

The questions in this section were provided only to those respondents who selected "yes" to Question 6—those involved in science at the EPA.

Question 28: Do you know how to report instances/allegations relating to the potential loss of scientific integrity?

	Number	**Percent**
Yes	1,385	49.50
No	1,413	50.50
Total respondents	**2,798**	

Question 29: In your organization, do you feel comfortable reporting instances/allegations relating to the potential loss of scientific integrity?

	Number	**Percent**
Yes	1,632	58.33
No	1,166	41.67
Total respondents	**2,798**	

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Question 30: What are the reasons you do not feel comfortable reporting instances/allegations relating to the potential loss of scientific integrity? Select all that apply.

	Number	Percent
I do not understand the reporting process.	474	40.83
I do not want to be considered a troublemaker.	550	47.37
I do not want to embarrass my agency or office.	196	16.88
I am concerned that my confidentiality will not be protected.	791	68.13
I am discouraged/prevented from reporting by my supervisor.	78	6.72
I am discouraged/prevented from reporting by senior agency leadership.	203	17.48
I fear retaliation by my supervisor.	198	17.05
I fear retaliation by senior agency leadership.	721	62.10
I do not believe my complaint will be handled promptly.	440	37.90
I do not believe my complaint will be handled fairly.	577	49.70
I do not believe the incident will be resolved.	678	58.40
Other (please specify)	148	12.75
Total respondents	**1,161**	
"Other" responses omitted to preserve confidentiality.		

Note: Question provided only to those who selected "no" in response to Question 29.

Question 31: If you have a concern related to the potential loss of scientific integrity, with whom are you likely to discuss and/or report this concern? Select all that apply.

	Number	Percent
First-line (direct) supervisor	2,179	78.16
Second-line supervisor	902	32.35
Management/senior leadership	636	22.81
Union	531	19.05
Scientific Integrity Official	940	33.72
Deputy Scientific Integrity Official (Scientific Integrity Committee Member)	431	15.46
Office of Inspector General	485	17.40
There is no one with whom I feel comfortable discussing and/or reporting a concern.	192	6.89
Other (please specify)	192	6.89
Total respondents	**2,788**	
"Other" responses omitted to preserve confidentiality.		

Question 32: Have you ever reported an instance/allegation related to the potential loss of scientific integrity?

	Number	Percent
Yes	207	7.42
No	2,581	92.58
Total respondents	**2,788**	

Question 33: Do you think your reported instance/allegation related to the potential loss of scientific integrity was addressed promptly (based on the complexity of the instance/allegation)?

	Number	Percent
Yes	74	35.75
If no, how long did it take?	133	64.25
Total respondents	**207**	
"No" responses omitted to preserve confidentiality.		

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Note: Question provided only to those who selected "yes" in response to Question 32.

Question 34: Do you think your reported instance/allegation related to the potential loss of scientific integrity was resolved in an objective, impartial manner (even if not substantiated)?

	Number	Percent
Yes	63	30.43
If no, please explain.	144	69.57
Total respondents	**207**	
"No" responses omitted to preserve confidentiality.		

Note: Question provided only to those who selected "yes" in response to Question 32.

Question 35: Who resolved your scientific integrity complaint? Select all that apply.

	Number	Percent
First-line (direct) supervisor	25	39.68
Second-line supervisor	19	30.16
Management/senior leadership	18	28.57
Union	3	4.76
Scientific Integrity Official	11	17.46
Deputy Scientific Integrity Official (Scientific Integrity Committee Member)	7	11.11
Office of Inspector General	9	14.29
Other (please specify)	5	7.94
Total respondents	**63**	
"Other" responses omitted to preserve confidentiality.		

Note: Question provided only to those who selected "yes" in response to Question 34.

Question 36: Do you have any instances/allegations related to the potential loss of scientific integrity that you have not reported?

	Number	Percent
Yes	394	14.14
No	2,392	85.86
Total respondents	**2,786**	

Question 37: Please select the nature/type of the concerns that you have not reported. Select all that apply.

	Number	Percent
Suppression or delay of release of a scientific report or information	175	44.64
Interference with science by a manager or senior agency leader	251	64.03
Scientific methods	46	11.73
Falsification/fabrication	40	10.20
Lab fraud	5	1.28
Plagiarism	10	2.55
Conflicts of interest	106	27.04
Differing scientific opinion	97	24.74
Data quality concerns	99	25.26
Authorship and distribution	35	8.93
Other (please specify)	57	14.54
Total respondents	**392**	
"Other" responses omitted to preserve confidentiality.		

Note: Question provided to those who selected "yes" in response to Question 36.
Two respondents selected "yes" in Question 36 but did not respond to Question 37.

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Question 38: Please explain why you have not reported this scientific integrity concern.

	Number
Answered	392
Comments omitted to preserve confidentiality.	

Note: Question provided only to those who selected "yes" in response to Question 36.
Two respondents selected "yes" in Question 36 but did not respond to Question 38.

Question 39: Did you know that you can contact the Scientific Integrity Official (or your organization's Deputy Scientific Integrity Official) for advice only, without making a formal allegation?

	Number	Percent
Yes	1,347	48.40
No	1,436	51.60
Total respondents	**2,783**	

SECTION 5: OVERALL SATISFACTION AND ADDITIONAL COMMENTS

All survey respondents – those involved and not involved in science were provided these questions.

Question 45: Overall, in thinking of your experience over the past 6 months, are you satisfied with the implementation of the EPA's Scientific Integrity Policy?

	Number	Percent (total)	Percent (basis to judge/know)
Yes	1,025	26.04	55.65
No	817	20.76	44.35
No basis to judge/Do not know	2,094	53.20	
Total respondents	**3,936**		
Respondents with basis to judge/know	**1,842**		

Question 46: Do you have any suggestions for improving scientific integrity at the EPA not already provided in prior responses, or any other comments you would like to share with us? Please type "N/A" if you do not have any comments.

	Number
Answered (includes N/As)	3,936
Comments omitted to preserve confidentiality.	

Question 47: If you would like the OIG to contact you to further discuss any aspect of this survey or scientific integrity at the EPA, please provide your contact information. Please type "N/A" if you do not want to provide your contact information for the OIG to contact you.

	Number
Answered (includes N/As)	3,936
Comments omitted to preserve confidentiality.	

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Agency Response to Draft Report and Technical Comments

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

April 17, 2020

MEMORANDUM

SUBJECT: Response to Office of Inspector General Draft Report No. OA&E-FY18-072, *"Further Efforts Needed to Uphold Scientific Integrity at EPA"* dated February 12, 2020

FROM: Doug Benevento //s//
Associate Deputy Administrator

TO: Patrick Gilbride
Director, Environmental Research Programs Directorate
Office of Audit and Evaluation
Office of Inspector General

EPA welcomes the opportunity to review and comment on the OIG's draft report titled *"Further Efforts Needed to Uphold Scientific Integrity at EPA"* (Project No. OA&E-FY18-072) (Draft Report).

The process used to collect information for this report included extensive interviews, surveys, and an in-depth review of EPA scientific integrity initiatives. The report addresses the implementation of the Scientific Integrity Policy (adopted in February 2012), including the extent and type of employee scientific integrity concerns, employee awareness of the Scientific Integrity Policy, reasons potential violations may not be reported, and the process by which the Agency responds to and resolves allegations of scientific integrity violations. The report did not look at peer review or the Federal Advisory Committee Act, nor does it imply that any science conducted by the Agency is, was or has any deficiency. Accordingly, we believe the term "process" should be added to the report's title to more accurately reflect the substance of the report and prevent any inadvertent misrepresentations to the public. Such an adjusted title would read as follows: "Further Efforts Needed to Uphold Scientific Integrity *Process* at EPA."

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For your consideration, we have included a Technical Comments Attachment to supplement this response.

AGENCY'S OVERALL POSITION

The Offices of the Administrator and Research and Development appreciate the OIG's recognition that EPA has taken valuable steps to build capacity, invest in, and maintain agency expertise in scientific integrity. We are confident that the work conducted at the Agency everyday rests upon a strong foundation of science, and we believe the overall findings of the OIG report support that conclusion. We are grateful with the findings in the report that demonstrate that science within the Agency is respected throughout the Agency:

> A majority of respondents were positive about five areas of culture --- specifically, their ability to:
>
> - Express scientific views in their personal capacity, and not representative of the Agency.
> - Openly express scientific opinions in the Agency without fear of retaliation.
> - Observe consistent support by their management chains for scientifically defensible positions.
> - Provide input on scientific content relying on their research.
> - Experience no alteration or suppression of their research findings outside of technical merit.

We believe that improvement is a process and not an endpoint and we will always seek improvement and do appreciate much of the constructive guidance in the report.

Finally, an important clarification regarding the Agency Action Official the OIG has identified to address recommendations 2 through 12: the EPA Science Advisor is the appropriate responsible Agency Official to address these recommendations and in some cases with the assistance of the OA and the Office of Mission Support. In accordance with the EPA Scientific Integrity Policy, the EPA Science Advisor does this work in their capacity as EPA Science Advisor and not as the Assistant Administrator for Research and Development. The Assistant Administrator responsibilities are distinct from the cross-Agency responsibilities of the EPA Science Advisor.

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AGENCY'S RESPONSE TO REPORT RECOMMENDATIONS

AGREEMENTS

No.	Recommendation	High-Level Intended Corrective Actions	Estimated Completion
1.	Determine the extent and cause of the culture and "tone at the top" concerns, based on the indicators from the OIG's scientific integrity survey. Issue the results to all EPA staff and make available to the public.	1. We would first note that we cannot find the words "tone at the top" being surveyed and find its use in quotes in this recommendation unfortunate. 2.The EPA Deputy Administrator, in cooperation with the EPA Science Advisor, will work with the Administrator to devise an action plan to address this recommendation. The EPA's Deputy Administrator, Science Advisor, Scientific Integrity Official and the Scientific Integrity Committee will analyze the OIG scientific integrity survey, together with previous surveys of EPA, EVS results, FMFIA reports and reports of alleged violations of the EPA Scientific Integrity Policy to inform this plan.	September 30, 2020
2.	With the assistance of the Scientific Integrity Committee, develop and identify which performance measures will be used to define Scientific Integrity Program success and effective Scientific Integrity Policy implementation.	2. EPA will develop an evaluation/assessment plan to examine and augment the metrics already in place and create a plan for gathering and analyzing these data and applying those results to further refine and improve EPA's scientific integrity work.	December 30, 2021
3.	With the assistance of the Scientific Integrity Committee, develop and execute a plan, including resource needs and milestones, to address the remaining action items identified by the agency to improve the implementation of its Scientific Integrity Policy." (Appendix A)	3. EPA will develop a detailed plan to include the action items in Appendix A with corrective actions, milestones, planned completion dates, and resource needs. The ScIO and ScIC will develop the plan and track implementation of the action items.	January 30, 2021

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4.	In coordination with the Assistant Administrator for Mission Support and the Scientific Integrity Committee, develop and implement a process for tracking completion of scientific integrity training for all new employees, including senior leadership and political appointees	4.1 The Agency has implemented a process for tracking completion of onboarding training for career employees. Beginning in 2016, the ScI program has provided Agency-wide onboarding scientific integrity training for all new non-SES career employees. We currently receive monthly reports on training completion from the training office in the Office of Mission Support. 4.2 For new SES members, OMS has agreed that a briefing by the Scientific Integrity Official will be included in future onboarding. 4.3 For senior schedule C employees, OMS will forward the names of new hires to the Scientific Integrity Official for in person briefings 4.4 For all other schedule C hires, the Scientific Integrity Onboarding Training will be included in their onboarding training assignments.	July 31, 2020
5.	Provide updated information on scientific integrity training completion rates to Scientific Integrity Committee members and supervisors.	5. The Scientific Integrity Program will continue to analyze the reports from OMS to identify those who fail to initiate and/or complete the onboarding training within the prescribed time period. We will continue to compile these data quarterly and share with the Scientific Integrity Committee members to enable them to make sure this requirement is fulfilled.	Completed on March 4, 2020
6	In coordination with the Assistant Administrator for Mission Support, complete the development and implementation of the electronic clearance system for scientific products across the agency.	6. OMS, ORD Office of Scientific Information Management (OSIM), and the Scientific Integrity Committee will coordinate to complete modification and Agency-wide implementation of ORD's Scientific & Technical Information Clearance System (STICS) to an agency-wide electronic clearance system for scientific products across the Agency. The system will be consistent with the Scientific Integrity Policy and our Best Practices document and with the Agency's Plan to Increase Access to the Results of EPA-Funded Scientific Research.	June 30, 2022

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7.	With the assistance of the Scientific Integrity Committee, finalize and release the draft procedures for addressing allegations of a violation of the Scientific Integrity Policy and incorporate the procedures into scientific integrity outreach and training materials.	7.1 The Agency will release the Procedures document. It will be posted on the Agency's website (https://www.epa.gov/osa/procedure-for-allegations) by April 30, 2020. 7.2 The ScI Program will create and release appropriate outreach materials to ensure EPA employees and their managers understand these procedures.	April 30, 2020
8.	With the assistance of the Scientific Integrity Committee, develop and implement a process to adjudicate allegations of Scientific Integrity Policy violations involving high-profile issues or senior officials in the agency for which the Scientific Integrity Official or Scientific Integrity Committee does not feel it can adequately adjudicate via existing procedures; include an indicator for when the process should be used.	8. EPA will amend the procedures document referenced in recommendation 7, to include a process to adjudicate allegations of Scientific Integrity Policy violations involving high-profile issues or senior officials in the Agency for which the Scientific Integrity Official or Scientific Integrity Committee does not feel it can adequately adjudicate via existing procedures, and include an indicator for when the process should be used.	June 30, 2021
9.	With the assistance of the Scientific Integrity Committee, finalize and implement a charter or procedures to clarify the roles and responsibilities of Scientific Integrity Committee members.	9. A charter is posted on the Agency internet and intranet sites. (https://www.epa.gov/osa/scientific-integrity-committee-charter)	Completed on March 19, 2020

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10.	Include in the Scientific Integrity Program's annual reporting on allegations of scientific integrity violations (as applicable and to the extent that privacy allows): (a) adjudication outcome; (b) description of the process used to reach the adjudication outcome; (c) description of corrective actions and/or any longer-term changes or consequences to address the cause of substantiated violations; (d) whether and how the allegation was resolved through the advice/assistance process.	The Agency will address these recommendations in accordance with the process laid out in the Guidance for Addressing allegations. The SI Committee will work with organizational management as necessary.	December 30, 2020
11.	With the assistance of the Scientific Integrity Committee, finalize and post to the EPA's public website prior year Annual Reports on Scientific Integrity.	11. The ScIO and the ScIC will complete and post FY2018 and 2019 annual reports.	July 31, 2020
12.	Develop a timeline or procedure that ensures the prior fiscal year annual report on scientific integrity is completed and distributed before the annual agency wide meeting on scientific integrity.	12. We will develop a timeline to ensure the prior fiscal year annual report is available at the next Agency-wide annual meeting on Scientific Integrity, which is planned for July 2020.	July 31, 2020

Attached please find specific comments on the Draft Report. We request the OIG include our full response to the Draft Report, including the attachment of detailed technical comments.

If you have any questions regarding this response, please contact Francesca Grifo, Scientific Integrity Official, ORD at grifo.francesca@epa.gov.

Attachment

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cc: Jennifer Orme-Zavaleta
Scientific Integrity Committee

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Attachment: EPA Edits and Comments on OIG Draft Report on Scientific Integrity (OIG project # OA&E-FY18-0272)

Office of Research and Development Edits and Comments:

Overarching, please clarify how survey responses are conveyed. Percentages, raw numbers, raw numbers (basis to judge), percentages with accompanying raw numbers are not used consistently. We suggest using percentages because this properly conveys the relatively size/extent of a response. Also suggest removing subjective classifications such as "nearly," "most of," "approximately half," "over," etc. and use an actual percentage.

Overarching, when referencing survey questions, suggest including the question number to ensure proper context.

At a Glance page, 'What We Found' section, suggest adding to *SI Committee* (see highlight text below) with the **Scientific Integrity Official** or adding **Scientific Integrity Official** to the statement below. The SI Committee is timely, but often not timely in getting everything done due to existing SI Committee workloads.

> "Also, while the SI Committee has implemented many policy requirements and identified actions to improve SI at the EPA, we found that procedures to address potential violations were not finalized, mandatory training was not tracked, reporting was not timely, and the release of scientific products was not supported by a centralized clearance system. With improvements in these areas, the SI Committee could more consistently implement the SI Policy across the EPA."

At a Glance page, 'What We Found' section, suggest more specificity (see highlight text below) regarding what reporting by whom was not timely. We assume this statement refers to the lateness of the SI annual reports.

> "Also, while the SI Committee has implemented many policy requirements and identified actions to improve SI at the EPA, we found that procedures to address potential violations were not finalized, mandatory training was not tracked, reporting was not timely, and the release of scientific products was not supported by a centralized clearance system. With improvements in these areas, the SI Committee could more consistently implement the SI Policy across the EPA."

At a Glance page, 'Recommendations' section, suggest replacing *Assistant Administrator for Research and Development* with **EPA Science Advisor** (see edits below in red) to accurately reflect the agency official responsible to address the 11 recommendations for *developing procedures for addressing and resolving allegations of SI violations, communicating the outcomes of reports of SI violations, and improving the release of scientific information to the public*. The EPA Science Advisor does this work in their capacity as EPA Science Advisor. The Assistant Administrator for Research and Development responsibilities are distinct from the cross-Agency responsibilities of the EPA Science Advisor.

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"We also made 11 recommendations to the EPA Science Advisor ~~Assistant Administrator for Research and Development~~, including developing procedures for addressing and resolving allegations of SI violations, communicating the outcomes of reports of SI violations, and improving the release of scientific information to the public."

Page 1, footnote 2, suggest the following edits in red text. "For the purposes of this report, the term "adjudication process," unless expressly stated otherwise, means the process by which the EPA screens allegations of a loss of SI; conducts an inquiry; adjudicates the allegation (i.e., makes a determination as to whether a violation has occurred); and determines whether corrective action to secure the science is appropriate.

Page 2, last paragraph, suggest the following edit in red text. "The SI Policy and outreach materials define several important terms, as detailed in the blue sidebar above, and **outline~~s~~** four specific focus areas for SI throughout the EPA, as detailed in Table 1 below."

Page 2, "Table 1: Four focus areas of EPA's SI Policy", suggest adding the additional SI Policy key element in red text to the "Promoting a culture at the EPA" column.

Table 1: Four focus areas of EPA's SI Policy

Area	Select elements
Promoting a culture of SI at the EPA	• Promotes a culture of commitment to evidence, fostering honest investigation and open discussion. • Reaffirms policies and procedures for using and characterizing scientific information in policy development. • Requires employees to act honestly and refrain from acts of scientific misconduct. • Prohibits managers and other agency leadership, from intimidating or coercing scientists to alter their scientific findings or professional opinions. • Prohibits all EPA employees, including scientists, managers, and other EPA leadership from suppressing, altering, or otherwise impeding the timely release of scientific findings or conclusions.

Page 3, footnote a, the Office of Federal Advisory Committee Management and Outreach has since been reorganized to the Federal Advisory Committee Management Division (FACMD) of the Office of Resources and Business Operations, (ORBO) within the Office of Mission Support (OMS). Suggest the following text edit in red, "At the EPA, federal advisory committees are overseen by the Federal Advisory Committee Management Division in the Office of Mission Support, with legal support from the Office of General Counsel. Members of technical FACAs are appointed as Special Government Employees and as such are subject to EPA's Scientific Integrity Policy."

Page 4, regarding the statement below, suggest clarifying that the requests were received over the course of the 7-year period mentioned.

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"Based on the agency's SI data from February 2012, which was when the SI Policy was implemented, through May 2019 (a seven-year period)"

Page 5, "Responsible Offices", regarding the highlighted statement below, suggest clarifying that the EPA SI Policy refers only to the EPA Science Advisor and not ORD's Principal Deputy Assistant Administrator (PDAA). Currently, ORD's PDAA and the EPA Science Advisor are the same person with two separate roles (PDAA and EPA Science Advisor). It is in the capacity of EPA Science Advisor that the SI Policy is overseen. Also, please see minor edit in red text below.

"The Office of Research and Development (ORD) takes the lead role in implementing the SI Policy, with the support of DSIOs located in each EPA program office and region."

Page 6, 3rd bullet, suggest the following text edit in red.

"Prior reports from the EPA OIG, the GAO's most recent report from April 2019, the National Academies of Sciences, Engineering, and Medicine and other scientific organizations that identified best practices and challenges to implementing federal SI policies and procedures."

Page 7, footnote 10, please reference the literature for the claim that "The response rate of 23.5% provides us with a 99% confidence level (with a 2% margin of error) that respondents were representative of the population surveyed."

Page 12, 2nd paragraph, suggest reexamining these selected survey comments (see highlighted statement below) and make them more representative of the themes expressed. These comments seem to give a great deal of emphasis to scientists' misunderstanding of the science-policy interface and very little emphasis to the other themes listed.

"Over 1,300 respondents provided comments on the behaviors demonstrating support or lack of support for a culture of SI."

Page 14, "Peer Review and Use of Federal Advisory Committees" section, 2nd paragraph, the finding below is not represented in the OIG recommendations. Suggest the OIG consider incorporating this finding into recommendations.

"…. a majority of respondents (55 percent, or 155) with a basis to judge were dissatisfied with how the EPA manages and uses federal advisory committees."

Page 15, "Awareness of and Experience with Process for Reporting Potential SI Violations" section, suggest adding explanatory text that the option below was only available and a component of the training and outreach for approximately 6 months prior to the survey being open. Considering that, 48% knowing they could use this option is a successful outcome.

"Over half of respondents did not know that they could seek advice from the SIO or DSIOs without making a formal allegation."

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Page 15, footnote 13 (copied below), suggest including the options the survey respondents could have reported to in the order of likelihood that the survey results indicate and including all of them.

> "The survey did not specify to whom the instance/allegation was reported; thus, the respondent could have reported to the SIO, the first-line supervisor, the OIG, etc. The SI Program can only control how the concerns reported to the program are handled."

Page 18, "Conclusion" All conclusions must reflect the temporal aspect of the survey. Please explicitly state that these results are reflective of the 6-month time period the survey took place during.

Page 20, Chapter 3 "Implementation of EPA's SI Policy Could Be Improved", suggest adding text to the section to note the survey was taken over a year ago and some of these issues have been resolved.

Page 20, Chapter 3 "Implementation of EPA's SI Policy Could Be Improved", suggest removing the text in red since the SI program has trained large numbers of individuals and managers in scientific integrity and the survey results show success in increasing awareness of the SI Policy and how to report an allegation.

- Completing previously planned implementation activities.
- Improving tracking ~~and implementation~~ of SI training.
- Improving transparency and timeliness in the release of scientific information to the public.
- Enhancing the SI adjudication procedures.
- Clarifying the role of SI Committee members.
- Improving the tracking and communication of SI complaint adjudication outcomes.

Additional comments regarding the above list: 4th bullet, the SI adjudication procedures are now posted on the EPA internal and external websites; 5th bullet, the Scientific Integrity Committee Charter is now posted on the EPA internal and external websites.

Page 22, "Table 3: SI resources within ORD (SIO and supporting resources)", suggest clarifying the additional support is **not** for program work, but for support functions such as processing funds spent for travel or contracts.

> "Note: This table does not include resources from DSIOs, other program offices or regions. According to the EPA, additional support staff may provide direct or indirect support to the SI Program, but their level of support is variable, as they have other duties."

Page 22, 2nd paragraph, suggest revising the paragraph to reflect all the measures utilized, along with EVS results and FMFIA results are considered by SI team in annual planning, preparation for the fall meeting of the SI Committee and by the SI Committee as it prioritizes work plan activities. It would be helpful to further elucidate what the OIG means by "integrated way". We

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agree more measures are needed and more ability to collect and analyze new data but suggest we do integrate the data we gather.

> "While the various evaluation activities conducted by the SI Program—including the survey and the external study that resulted in action items and recommendations—may provide useful data to inform planning, they are not used in an integrated way to measure performance of the SI Program as well as the success of SI Policy implementation more broadly. Further, resource limitations and lack of performance measures limit the committee's ability to fully assess and implement the SI Policy. Performance measures will allow the SI Program to better measure program success and prioritize activities."

Page 23, 1st paragraph, regarding the 60 senior leaders reported are not meant to represent all the SES, ST, SL, title 42s at the Agency. These leaders are reported as a part of the numbers for the management training results. The appropriate denominator would be the number of schedule C employees at EPA not the entire senior executive service.

> "As of October 2019, the SIO reports that approximately 60 senior leaders and political appointees—out of the EPA's approximately 260 Senior Executive Service-level employees, including both career senior leaders and political appointees—have completed the SI training or been briefed by the SIO."

Page 23, 2nd paragraph, regarding the finding below, the SI team is now receiving monthly reports that identify new employees who have not completed the training. We have identified approximately 85 employees who are delinquent and have passed these names to the Scientific Integrity Committee for their follow-up. OIG's recommendations might be revised to include the follow up work by the Committee members to ensure completion by these delinquent employees.

> "…the tracking data provided to the SIO have only recently—as of September 2019—identified those new employees who have not completed the training. The new data will help the SIO facilitate enforcement of the mandatory training requirement. Improving enforcement of the mandatory training requirement will help to increase awareness of and compliance with the SI Policy."

Pages 24 (bottom) and 25 (top), regarding the statement below, the new SI electronic clearance system is being designed to comply with the best practices document. For accuracy, suggest edits below in red text.

> "According to the SIO, those offices that choose to adopt the new electronic clearance system will adhere to the *Best Practices for Clearance of Scientific Products at EPA*, as the new system is being ~~was~~ designed considering the approaches outlined in that document."

Page 25, "Enhancing SI Adjudication Procedures" section, 3rd paragraph, suggest amending the highlighted part to reflect the fact that only 11 of the 144 were reported to the Scientific Integrity Official (SIO). The SIO has adjusted its management training to include instruction on how

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managers should respond to allegations, but we cannot control how all managers handle allegations.

> "Nearly 1,200 survey respondents (42 percent of 2,789) indicated that they were not comfortable reporting SI concerns. Of the 207 respondents who had reported an allegation of an SI violation, a majority expressed a dissatisfaction with the timeliness (133) and objectivity (144) of the process."

Pages 26 (bottom) and 27 (top), suggest the following edits in red text.

> "The seniority of the position also varies; for example, ~~some~~ most DSIOs are in Senior Executive Service-level positions, ~~while~~ some representing regions ~~others~~ are in General Schedule staff-level positions."

Page 27, 1st and 2nd paragraphs, suggest updating to reflect the SI charter is now final and posted on EPA internal and external websites.

> "There is no finalized charter for the SI Policy. A charter or clearly defined roles and procedures for the SI Committee would give program offices and regions clear expectations for DSIOs across the EPA, including who should serve in the role and the level of resources needed to be successful. In August 2019, the SI Program provided the OIG with a draft charter for the SI Committee; while the draft charter did not cover all the issues described above, the SIO indicated that these issues would be addressed in the next version of the charter."

> "The lack of a finalized charter or procedures describing the roles and responsibilities of the SI Committee impedes the ability of the committee to assess its own implementation responsibilities and, more broadly, the implementation of the SI Policy across the agency."

Pages 28 (bottom) and 29 (top), suggest rewording the language below to reflect that we should be as complete as possible but also acknowledging that sometimes there will not be a tremendous amount to report. In instances where the process was deemed necessary to get to resolution, we will report upon it. But if we can adjudicate through a conversation there will be nothing more to report.

> "… annual reports are inconsistent on whether allegations are substantiated, dismissed or resolved without proceeding through the adjudication process. For example, allegations may be listed as "resolved" with no other description or explanation of how they were resolved or the conditions that created the issues in the first place."

Page 29, "Table 4: Descriptions of alleged SI violations", regarding the highlighted section below, it is unclear what else the SI program could have reported since nothing else happened. The SI team is responsible to secure the science, which was done by getting the report released. There was no process because an initial conversation pointing out the delay secured the release

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of the report. We are not in the management chain of the offenders and it is up to the SI Committee member to decide what action to take. Typically, any actions are confidential.

"Table 4: Descriptions of alleged SI violations"

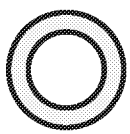
Adequately described SI allegation	Inadequately described SI allegation
As presented in the annual report:	
Allegation: An EPA employee disagreed with a methodology used by the EPA. Outcome: An alternative dispute resolution process was used to evaluate this allegation. An SI Review Panel found that the SI Policy was not violated because the employee had been able to express a differing scientific opinion and there was no evidence of retaliation.	Allegation: A staff member submitted an allegation that the release of a report that was under development for several years was being delayed by management. Outcome: The SIO talked with the manager and the report was released one week after the allegation was submitted

Pages 29 (bottom) and 30 (top), "Recommendation 10", suggest the following edits in red. Suggest deleting "10. (d)" because the SI program does not resolve allegations through the advice/assistance process. Although an advice query may be converted to an allegation, by definition - we have never gone from an allegation to the advice lane. They are distinct processes.

10. Summarize allegations of scientific integrity violations in the Scientific Integrity Program's annual reports, as applicable and subject to applicable privacy protections, including:

    a. Adjudication outcome.
    b. Description of the process used to reach the adjudication outcome.
    c. Description of corrective actions and/or any longer-term changes or consequences to address the cause of substantiated violations when these are known.
    d. ~~Whether and how the allegation was resolved through the advice/assistance process.~~

Page 33, Appendix A, suggest the following edits in red to select "Additional Information" columns. For "Additional Information 10", there is a document entitled best practices (for authorship), but it is not a policy. The SI Committee would need to decide to take these best practices and use them to draft an agencywide authorship policy for scientific products.

Action Item	Status	Additional Information
3. Provide a briefing on SI (by the SIO) to all new members of the Senior Executive Service and new SL, ST, and Title 42 employees on SI as part of their onboarding process.		After first providing a briefing to these employees in 2016, the SIO continued to offer this action each year through 2017, providing in-person training to the incoming class of Senior Executive Service and special hires ~~in addition to their other mandatory training~~. The SIO told us that there has been no opportunity to brief the incoming class of senior

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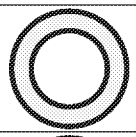
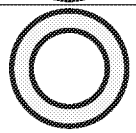
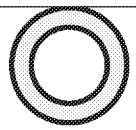
		managers in 2018, despite the SIO's ~~several~~ requests to do so. The SIO is not aware of any sessions scheduled for 2019 or 2020.
7. Initiate dialogues with EPA managers to clearly define the responsibilities of management and senior leadership.		As of February 2020, the SI Program has trained over 700 EPA managers through the "Management Dialogues on Scientific Integrity."
9. Develop the *Differing Scientific Opinions Policy* for use when an EPA employee substantively engaged in the science informing an EPA policy decision disagrees with the scientific data, scientific interpretations or scientific conclusions that will be relied upon.		The SI Program has developed a document entitles *"Approaches for Expressing and Resolving Differing Scientific Opinions"* ~~*Policy*~~, which, as of February 2020 has been reviewed and cleared and is ready for posting on the Agency's website (The OIG has not reviewed this document.)
10. Work with managers to make certain that there is widespread understanding of scientists' right to review, correct, and improve the scientific content of any proposed Agency document intended for public dissemination that significantly relies on their research.		The SI FY 2019 work plan calls for the completion of four documents to address this action item: • Standard operating procedure for last right of review. • Standard operating procedure for personal views exception. • ~~Policy on~~ Best practices for authorship. • Addendum on clearance best practices in ensuring SI. The SI Program anticipates that completion of these documents will be delayed until FY 2020, due to (1) an increase in allegations and requests for advice and (2) the FY 2019 federal lapse in funding.

Pages 38 to 45, Appendix B, "Figure B-3: With/to whom respondents were likely to discuss/report a concern related to potential loss of SI (% out of 2,788)" and Appendix C, "Raw Data from OIG's 2018 SI Survey", suggest either expressing the data as raw numbers or using the number of total responses chosen for a given question as the denominator. The SIO consulted with additional experts on survey methodology and they agree that using percentages of the number of respondents to the question as the denominator is inappropriate when more than one response can be selected. For the "Figure B-3" question, the denominator would be 6,488, thus changing the percentage reported to the SIO to ~14%. This will impact all questions in which the respondent can "Select all that apply". Specifically, the impact would be on "Appendix C: Raw Data from OIG's 2018 SI Survey" Questions 8 & 41 combined; Questions 8 & 41 separated; Questions 9 & 42 combined; Questions 9 & 42 separated; Questions 10 & 43 combined; Questions 10 & 43 separated; Questions 11 & 44 combined; Questions 11 & 44 separated.

EPA Scientific Integrity Committee Edits and Comments

Office of General Counsel's edits and comments:

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Page 1, footnote 2, suggest adding 'which' to the footnote. "For the purposes of this report, the term "adjudication process," unless expressly stated otherwise, means the process by which the EPA screens allegations of SI; conducts an inquiry; adjudicates the allegation (i.e., makes a determination as to whether a violation has occurred); and determines whether corrective action is appropriate."

Top of page 3, suggest making the following edits in red text to footnote 'a'. "The Federal Advisory Committee Act provides, in part, that a federal advisory committee is any committee, board, commission, council, conference, panel, task force or other similar group that is established or used by the agencies~~, statute~~ or the President to obtain advice or recommendations and that is not composed solely of full-time or permanent part-time federal officers or employees.

Page 3, EPA's SI Committee. Suggest the following edits in red text. "The EPA's SI Policy established the SI Committee that is chaired by the SIO and consists of Deputy SIOs (DSIOs) from each of the agency's program and regional offices.

Page 14, footnote 12, suggest the following edits in red text and updated reference links to the directive and memorandum. "An October 31, 2017, EPA Administrator's directive (*Strengthening and Improving Membership on EPA Federal Advisory Committees*) and the accompanying memorandum restructured the membership of federal advisory committees by (1) forbidding non-state, local, or tribal government advisory committee members from serving on EPA committees while receiving EPA grants; (2) increasing state, tribal and local government participation; (3) enhancing "geographic diversity," except when committees focus on specific regional/area issues; and (4) promoting fresh perspectives by ensuring that membership is open to a "broad, diverse array of experts who can potentially provide unique and informative new perspectives."

Page 24, footnote 18, suggest the following edits in red text. "These best practices for clearance do not apply to scientific products released through the EPA's Action Development Process and Integrated Science Assessments. Agency actions, as used in the Action Development Process, include proposed rules and final rules signed by the Administrator and significant guidance documents."

Page 33, Appendix A, suggest the edit in red text. "As of October 2019, the SI Program has overseen the completion of five and partial completion of seven of the action items; four have not been started due, in part—according to the SIO—to resource limitations of the SI Program."

Page 35, Appendix A, No. 13. Additional Information (column), suggest the following edits in red text to reflect the reference document does not establish provisions with which EPA offices and regions must comply. "The EPA is developing an electronic clearance system which will incorporate aspects of the *Best Practices for Clearance of Scientific Products* document. ~~Those offices and regions that adopt the system should be in compliance with the Best Practices for Clearance of Scientific Products document.~~ The SIO plans to meet with DSIOs to review the clearance procedures used by their individual offices.

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Office of Chemical Safety and Pollution Prevention's edits and comments:

Pages 29 – 30 and 32, Recommendation 10, part c. While the Scientific Integrity Committee panel might *recommend* corrective actions/consequences/changes to address substantiated violations, the decision *whether to impose them* rests with the supervisor of the person against whom a violation has been substantiated. As written, the Recommendation implies that the SI Committee has authority to execute corrective action, which is not correct. Moreover, even if the Recommendation is rewritten to acknowledge the SI Committee's advisory role, personnel confidentiality may preclude the Supervisor of Record from disclosing to the SI Committee what corrective actions he/she/they imposed.

Suggest the following edits in red text to Recommendation 10, part c on pages 29-30 and page 32 to read "c. Description of corrective actions and/or any longer-term changes or consequences recommended by the Scientific Integrity Committee to address the cause of substantiated violations."

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