Scientific Integrity

FY 2017

Annual Report

EPA

2017 Annual Report on Scientific Integrity

EPA's Scientific Integrity FY2017 Annual Report chronicles the activities and initiatives that supported the implementation of EPA's Scientific Integrity Policy in fiscal year (FY) 2017. Since February 2012, EPA's Scientific Integrity Policy has ensured that EPA's decisions and policies are guided by robust high-quality and transparent science that is communicated openly and accurately. The Policy describes the elements that comprise a culture of scientific integrity including the public release of scientific information, consistent use of peer review, and professional development of scientists. While the Policy tasks the Scientific Integrity Official and the Deputy Scientific Integrity Officials with implementing the Scientific Integrity Policy, we are all responsible for upholding a culture of scientific integrity.

Table of Contents

Scientific Integrity at EPA in FY 2017 – Highlights

Scientific Integrity Allegations

In FY2017, 22 allegations of a loss of scientific integrity were received. Sixteen allegations were also resolved as adjudicated-substantiated or adjudicated-dismissed. Summaries of these allegations and other statistics regarding allegations are provided in this section.

Scientific Integrity Annual Activities

In FY2017, the Scientific Integrity Official, the Scientific Integrity Program, and Scientific Integrity Committee continued to promote a culture of scientific integrity in all of EPA's programs, offices, and regions. This was achieved by hosting two Agency-wide conversations on scientific integrity and working in close coordination with their partners throughout the Agency including the Office of General Counsel (OGC) and the Office of Inspector General (OIG). An overview of annual scientific integrity activities at EPA are featured in this section.

Scientific Integrity Accomplishments

FY2017 Scientific Integrity accomplishments across EPA's programs, offices, and regions are showcased in this section.

Scientific Integrity Training and Training Evaluation

The Scientific Integrity Policy is most effective when agency employees are aware of its existence and its significance. In January 2017, scientific integrity training became a required element of the onboarding process for new EPA employees. Scientific integrity training sessions were also held for over 1,500 other employees in FY2017. The trainees were also asked to evaluate the program through a survey. These training sessions and evaluation results are discussed in this section.

Scientific Integrity Survey Results

Nearly 6,000 employees, from all offices and regions, responded to a survey that was sent to all EPA employees. The survey served as an assessment of the effectiveness of

implementing the Scientific Integrity Policy through the first five years. Some of these answers and the scientific integrity initiatives that were created in response to the results are summarized in this section.

FY2017 Allegations

Allegations Update

The Agency received 22 allegations in FY2017, 15 of which were received in the first half of the fiscal year. This was a slight decrease from the 24 allegations that were received in FY2016.

As of September 30, 2017, EPA has received 130 allegations of a loss of scientific integrity since the Scientific Integrity Policy was adopted in February 2012.

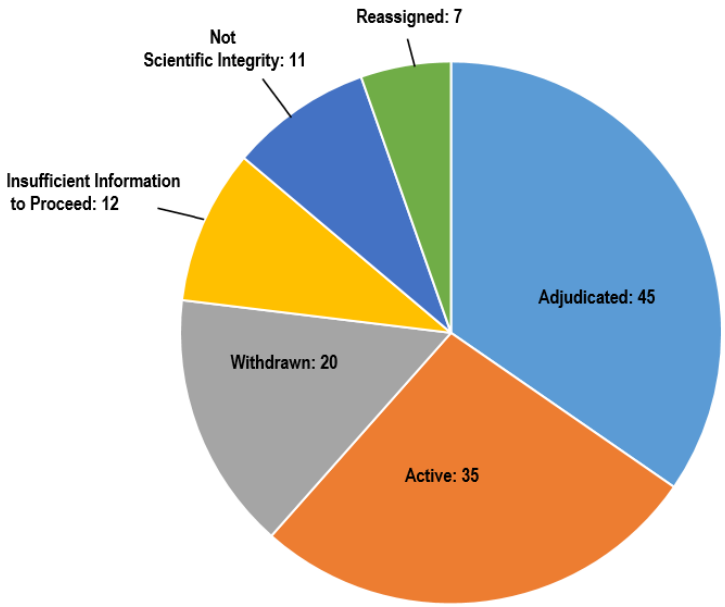


Figure 1. Status of all allegations from February 2012 through September 30, 2017

Allegations may be made in two ways: formally (where the person submitting the allegation is identified) or informally (where the person submitting the allegation prefers to not reveal his or her identity). Of the 22 allegations that were received in FY2017, fifteen (68%) were informal and seven (32%) were formal. For comparison, 58% were informal in FY2016.

Of the fifteen informal reports received in FY2017, two came from outside of the Agency, seven came from EPA offices and programs, two came from regional offices, and four were anonymous EPA submissions. Among the seven formal reports received, five came from outside of the Agency and two came from EPA offices and programs. The number of external allegations in FY2017 increased from five to seven compared to FY2016.

Additionally, the number of internal allegations from an unknown office, program, or region doubled from two in FY2016 to four in FY2017.

Figure 2 depicts the number of allegations received in every quarter since the Policy was published.

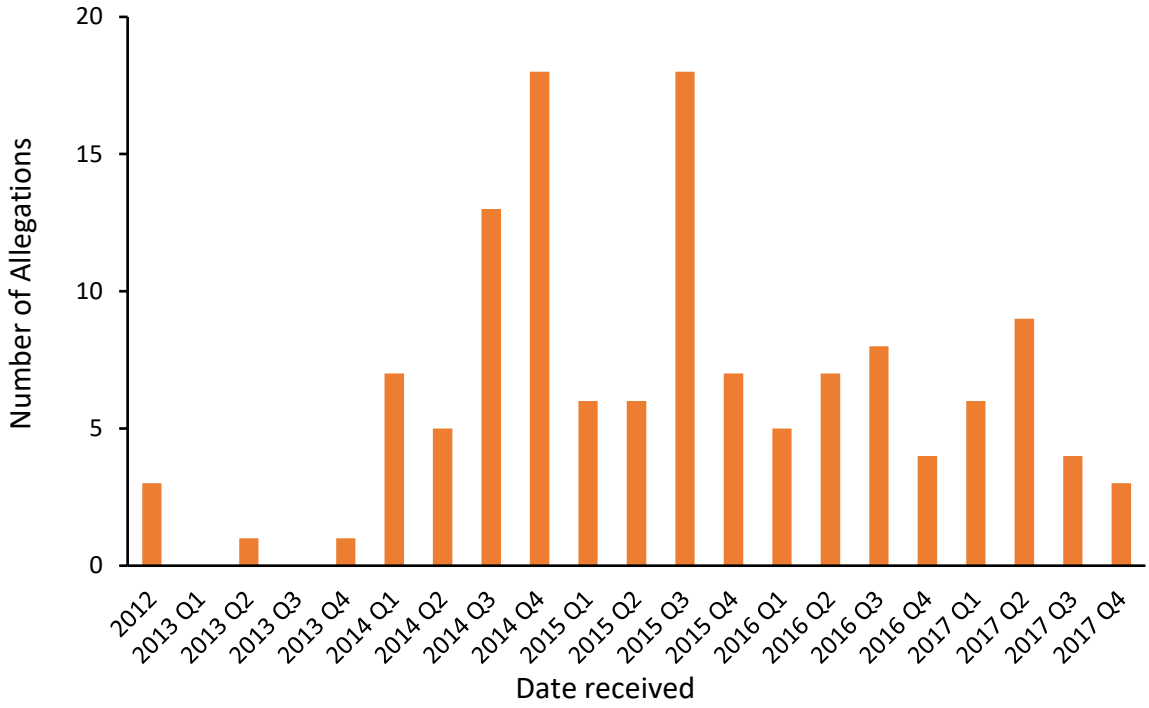


Figure 2. Allegations received between February 2012 and September 30, 2017

The types of allegations received in each quarter of FY2017 are displayed below in Figure 3.

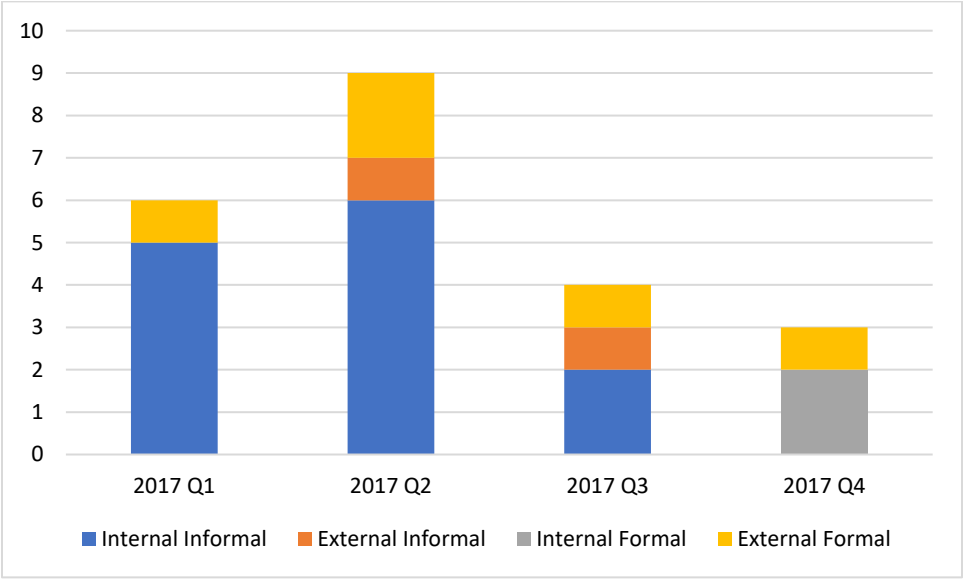


Figure 3. Types of allegations received each quarter in FY2017

The allegations received in FY2017 related to several scientific integrity topics (Figure 4). Ten concerned suppression or delay of release of a scientific report or information, four were related to authorship issues, four were considered interference with science by a manager, two were related to improper hiring/promotion/assignments, one concerned statistical approach, and one was classified as other.

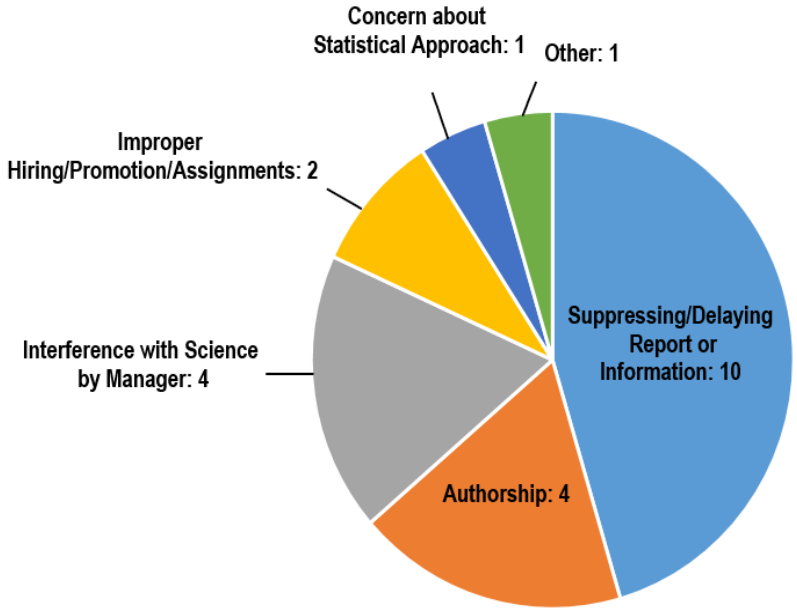


Figure 4. Topics of allegations received during FY2017

Summary of Adjudicated Allegations

Summary of FY2017 Closed Allegations – The following summaries are only for the 16 allegations that were resolved as adjudicated–substantiated or adjudicated–dismissed. Allegations that were reassigned, withdrawn, not scientific integrity, or were unable to proceed are not included.

1. Conflicts of interest on peer review panels.

Allegation: The submitter claimed that there were conflicts of interest for some members of assessment panels citing too much influence from the chemical industry. The focus of this allegation was on the influence of the sitting office manager.

Outcome: When the manager in question left the Agency, the person who made the allegation reported that the situation improved.

2. Concerns regarding scientific integrity of shared data.

Allegation: An employee asked if a formal process exists that makes EPA laboratories/divisions responsible for the scientific integrity of data that they request from either an internal or external group.

Outcome: The employee was directed to several Agency quality assurance guidance documents and online resources.

3. Research scientists marginalized by management.

Allegation: An employee reported a complaint from research scientists that they were being prevented by their management from continuing the work that they had been doing for 20 years that was work the EPA regions had requested.

Outcome: The Scientific Integrity Official (ScIO) explained that while a supervisor may change a scientist's research assignments to support Agency priorities, they should provide for a transition that protects research materials and results. The person who reported this allegation said that this particular situation improved when the supervisor left.

4. Concerns about scientific objectivity.

Allegation: External parties sent a letter to the manager of an EPA office, stating their concerns that an EPA program was being influenced and slowed down by external pressures.

Outcome: The Scientific Integrity Official replied with a letter that described the policies that the program in question had implemented since 2009 to improve transparency and to also ensure that the program maintains scientific objectivity and independence.

5. Concerns regarding the integrity of the processes of an Agency review board.

Allegation: An employee questioned the integrity of the processes of an Agency review board, but he/she did not provide a specific instance of the Scientific Integrity Policy being violated.

Outcome: The EPA office that manages the review board released a memo to its managers that outlined future changes to the review board and asked for their input before instituting permanent changes. The proposed changes would address the employee's concerns.

6. Differing scientific opinion on methodology.

Allegation: An EPA employee disagreed with a methodology used by EPA.

Outcome: An alternative dispute resolution process was used to evaluate this allegation. A Scientific Integrity Panel found that the Scientific Integrity Policy was not violated, because the employee had been able to express a differing scientific opinion and there was no evidence of retaliation.

7. Quality Assurance/Quality Control (QA/QC) protocols questioned in an Office of Inspector General (OIG) report.

Allegation: An EPA employee questioned the OIG investigation of contamination at a group of sites. The employee suggested that the OIG should follow Agency QA/QC requirements when generating its own sampling data.

Outcome: The final OIG report acknowledged the regional concerns with the OIG sampling QA protocols.

8. Comments in a public docket questioned the revisions of Agency guidelines.

Allegation: The OIG referred comments in the public docket on revisions to the Guidelines on Air Quality Models to the Scientific Integrity Program. The comments questioned the competency of the contractor involved in developing revisions.

Outcome: The Scientific Integrity Program found no scientific integrity issues related to this comment and notes that the Office of Air and Radiation (OAR) addressed every comment in the public docket about the revisions, including those that were referred by the OIG.

9. Questions regarding validation of data, QA requirements, and statistical analysis.

Allegation: An EPA employee questioned the validation of data for a monitoring program.

Outcome: This was determined to be a differing scientific opinion. The employee was given an opportunity to discuss his/her concerns with a cross-regional workgroup. While the consensus disagreed with the employee, he/she was not prevented from discussing his/her opinion. Therefore, this was not a violation of the Scientific Integrity Policy.

10. Managers requested that employees conduct an incomplete registration review.

Allegation: An employee reported that staff members were asked by management to perform truncated registration reviews in which only certain elements, not the full list of regulatory requirements, were evaluated. Staff members requested that the order for a shortened review be placed in writing, but management refused.

Outcome: The employee reported that, following notification that an allegation had been submitted, the process reverted to the previous methodology with which there were no issues.

11. Fracking report not included in the Agency's response to a Freedom of Information Act (FOIA) request.

Allegation: A report that discussed the effects of hydrofracking on drinking water was not included in a response to a FOIA request regarding hydrofracking. It was noted in the allegation that the relevant report was available online.

Outcome: The Scientific Integrity Program communicated to the submitter that a FOIA office usually does not provide materials that are available online in its responses to FOIA requests.

12. Management delayed the release of a report.

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 ScIO talked with the manager and the report was released one week after the allegation was submitted.

13. The EPA transition team violated the EPA Scientific Integrity Policy.

Allegation: An external group alleged that the transition team from the incoming administration violated the EPA Scientific Integrity Policy. The group based its allegation on media reports that the transition team will expect EPA scientists to undergo an internal vetting process before their work could be shared outside of the Agency.

Outcome: This allegation did not document a specific instance of a violation of the Scientific Integrity Policy, therefore it could not be substantiated.

14. Allegation that the EPA Administrator expressed an opinion that contradicts Agency science.

Allegation: This allegation was originally submitted to the OIG. It alleged that the Administrator violated the EPA Scientific Integrity Policy when he expressed his opinion in a television interview that he does not believe that anthropogenic carbon dioxide emissions are the primary contributor to observed climate change. The OIG referred this allegation to the Scientific Integrity Official.

Outcome: A Scientific Integrity Review Panel found that expressing a personal opinion about science is not a violation of the EPA Scientific Integrity Policy.

15. Allegation that the Endangerment Rule and the Paris Agreement violate the EPA Scientific Integrity Policy.

Allegation: An external submission claimed that the Endangerment and Cause or Contribute Findings for Greenhouse Gases Under the Section 202(a) of the Clean Air Act[1] and the Paris Agreement[2] both violate the EPA Scientific Integrity Policy.

[1] https://www.epa.gov/climate-change/endangerment-and-cause-or-contribute-findings-greenhouse-gases-under-section-202a

[2] https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-7-d&chapter=27&clang=_en

Outcome: This allegation was dismissed as no violation of the EPA Scientific Integrity Policy was demonstrated.

16. EPA did not use relevant studies in its assessment of a chemical.

Allegation: This allegation was originally referred to the Scientific Integrity Program by the OIG. The allegation claimed that a misuse of taxpayer funding and scientific misconduct occurred during the assessment of a chemical.

Outcome: This allegation was referred back to the OIG since none of the issues that were described fall within the purview of the Scientific Integrity Policy, but do fall within the purview of the OIG.

Annual Activities

The annual activities described in this section provided ongoing support for the evolving scientific integrity activities at EPA.

The Scientific Integrity Committee

The Scientific Integrity Policy established a Scientific Integrity Committee, chaired by the Scientific Integrity Official (ScIO). The Committee meets quarterly and consists of senior program office and regional officials who are designated as Deputy Scientific Integrity Officials (DScIOs). They provide leadership for the Agency on scientific integrity, jointly assist in the implementation of the Policy, and promote Agency compliance with the Policy. The ScIO regularly communicates with Committee members to discuss potential approaches to emerging issues and work together to resolve allegations. The participation of the Committee ensures that a variety of experiences and viewpoints are considered. The members, their offices, and email addresses are listed here.

Annual Conversation with the Scientific Integrity Official

The Annual Conversation with the ScIO provides an opportunity for EPA employees to learn about scientific integrity at EPA and ask questions. The Backup to the ScIO, Dr. Kevin Teichman, presented to a live audience at Headquarters and to the rest of the Agency through a well-attended webinar in September 2017. In response to the record-high attendance, Dr. Vincent Cogliano, the Deputy to the Scientific Integrity Official, presented an encore of the Annual Conversation on Scientific Integrity, which included increased phoneline capacity. These conversations improved the visibility of the Scientific Integrity Policy and increased awareness among EPA employees. The sessions emphasized the broad applications of the Policy across EPA and encouraged employees to recognize and bring forward any concerns that they might have.

Stakeholder Meeting

The annual stakeholder meeting is an opportunity for stakeholders to hear from the ScIO and to comment on, or ask questions about, Scientific Integrity at the Agency. In 2017, the Scientific Integrity Program initially sent invitations for the stakeholder meeting in the same manner as it had in previous years. The Union of Concerned Scientists provided the names of non-governmental organizations and the American Chemistry Council invited regulated industry. EPA also sent invitations directly to groups representing state government and the regulated community. However, the meeting was later cancelled because the ScIO was on extended medical leave and unavailable.

Contractor-Managed Peer Review

EPA strengthened the Agency's oversight of contractor-led peer review panels in FY2013 by developing a Conflict-of-Interest Review Process for Contractor-Managed Peer Reviews. This process includes two opportunities for public involvement for identifying and selecting panel members. The process is designed to enhance the transparency of contractor-led peer reviews, increase internal oversight of these peer reviews, and reduce the potential for organizational or personal conflict-of-interest concerns through greater public participation and more rigorous internal review. The Conflict-of-Interest Peer Review Process for Contractor-Managed Peer Reviews was used twice in FY2017.

Quarterly Coordination Meetings with the Office of Inspector General and the Office of General Counsel

The ScIO maintains regular communication with both the Office of Inspector General (OIG) and the Office of General Counsel (OGC) through quarterly meetings. During these meetings, the status of current allegations of a loss of scientific integrity under review and the anticipated courses of action are discussed. Information that could identify the submitter of the allegation is only shared on a need-to-know basis. Coordination between these offices exemplifies the Agency-wide nature of the Scientific Integrity Policy implementation.

The handling of scientific misconduct, which includes fabrication, falsification, plagiarism, or misrepresentation in proposing, performing, or reviewing scientific or research activities, is governed by EPA's Scientific Misconduct Policy and is overseen by the OIG. In FY2017, six allegations were received through the OIG hotline and referred to the ScIO. Also in FY2017, the ScIO referred three allegations (two that concerned suppressing/delaying a report or information and one that related to a conflict of interest) to the OIG.

Promoting a Culture of Scientific Integrity Online

In FY2017, the scientific integrity home page on the intranet was visited 1,138 times. This nearly doubled the 611 hits in FY2016. The Policies section was the most visited on the intranet. This page received 414 views in FY2017, a significant increase from 135 in FY2016. In FY2017, 340 learned about scientific integrity by visiting the What is Scientific Integrity page on EPA's intranet site. The number of visits in FY2017 to this page more than tripled from FY2016. Interest in learning more about the best practices for authorship also climbed in FY2017 with 227 visits. This was an increase of 78 from FY16. On the internet, the scientific integrity section on EPA.gov was accessed 8,184 times. This was a significant increase from the 2,371 visits in the previous fiscal year.

Certifying Compliance with the Scientific Integrity Policy

The Federal Managers Financial Integrity Act requires that federal agencies assess the effectiveness of programmatic and financial internal controls. EPA Assistant Administrators (AAs) and Regional Administrators (RAs) must certify that their programs comply each year through an assurance letter to the EPA Administrator, who delivers an overall statement of assurance to the President and Congress. FY2017 marked the fourth year that AAs and RAs were required to submit an attachment certifying internal controls for scientific integrity. Based on the requirements that are outlined in the Scientific Integrity Policy, programs, offices, and regions were asked to report their accomplishments, potential weaknesses, and overall progress in implementing the Agency's Scientific Integrity Policy.

The FY2017 FMFIA process provided a structured assessment of EPA's scientific integrity activities across the Agency. On behalf of their offices, programs, or regions, respondents highlighted their accomplishments, showcased their innovations in the culture of scientific integrity, detailed problems or challenges related to scientific integrity, provided issues that they would like for the Scientific Integrity Committee to address, and discussed any vulnerabilities or weaknesses related to scientific integrity within their organizations or within the Agency.

Accomplishments in the EPA Regions and Offices 2017

In 2017, EPA program and regional offices took many approaches to enhance a culture of scientific integrity at EPA. ORD made advances in the public release of large data sets, dashboards, and other mechanisms that led to greater transparency and accessibility of Agency science. Other offices revised their procedures to assure the quality of Agency science, such as those for reviewing and approving scientific products and for conducting

peer review. The following are examples of scientific integrity accomplishments across the Agency in FY2017.

Promoting a Culture of Scientific Integrity

A culture of scientific integrity promotes the quality, collection, processing, and communication of scientific information. Many quality assurance systems are already in place to ensure the integrity of the scientific research process. In FY2017, several new initiatives were introduced that demonstrate EPA's commitment to evidence, objectivity, and the quality of scientific information.

Training

The Policy is most effective when agency employees are aware of its existence, its significance, and how they can uphold EPA's proud tradition of scientific integrity. In FY2017, the importance of scientific integrity was promoted in training sessions for EPA programs, offices, and regions.

- Office of Research and Development (ORD)
    - The National Risk Management Research Laboratory (NRMRL) empowered senior managers, scientists, and staff to teach and mentor new employees on the tenets of scientific integrity and ethics, and to also make management aware of any questionable practices or results. NRMRL staff met with their Deputy Ethics Official (DEO) and took annual ethical standards training that complemented the scientific integrity training.
- Region 3
    - Region 3 provided mandatory communications training on how to communicate scientific information internally and to the public.
- Region 9
    - All Region 9 laboratory staff were provided annual training on data integrity, ethical practices, and policies.

Data Management

EPA's ability to protect human health and the environment is heavily dependent on its data. In FY2017, ethics and data integrity training was provided to EPA employees.

- Office of Research and Development (ORD)
    - The Office of Science Information Management (OSIM) worked with other ORD Assessable Units (AUs) to implement its newly promulgated ORD Scientific Data Management policy and continued to improve the related

ScienceHub portal, a system that helps manage ORD's research data throughout the life of a research project.

- Region 7
    - The Environmental Sciences and Technology Division developed and provided web based training to all chemists that perform data analysis to ensure the integrity of the data is maintained. The Data Integrity Training is a yearly requirement for all chemists.

Clearance Procedures

Clearance procedures increase transparency in the release of research results, ensure timely review, and discourage unreasonable delays. They also ensure that scientific products are reviewed by the appropriate supervisors and technical managers before being released to the public. Several regional and program offices have developed their own clearance procedures for scientific research.

Office of Research and Development (ORD)

- All ORD manuscripts and presentations were cleared in the Scientific & Technical Information Clearance System (STICS), the electronic clearance system used by ORD, and data were deposited in ScienceHub prior to journal submission.
- The National Center for Environmental Assessment (NCEA) utilized STICS to conduct management review and clearance of all NCEA products. NCEA's robust clearance process includes up to seven approvers. NCEA management has included detailed descriptions of these processes in its employee handbook.

Quality Assurance

A variety of mechanisms work to ensure the quality and integrity of EPA scientific products, in addition to those mentioned above. Quality Management Programs (QMPs) play a large role in the quality assurance of scientific information. Collectively, these programs contribute to a culture that emphasizes the validity of scientific information.

- Office of Research and Development (ORD)
    - The National Exposure Research Laboratory (NERL) developed and revised guidance for implementing the clearance process (including guidance on the role of internal and external peer review) to ensure that scientific and/or technical work products follow current requirements and ensure high quality and sound science is being used and released by the Agency.

- Office of Enforcement and Compliance (OECA)
    - National Enforcement Investigations Center (NEIC) had several internal and external assessments and audits of the integrated quality, safety and health, and environmental management systems. These audits identified a few non-conformities with ISO/IEC 17025 and other requirements. All non-conformities were addressed through NEIC's robust corrective/remedial action process. Additionally, identified areas of potential concern (but not a non-conformity) or potential quality-related improvements were also tracked and addressed, when possible, including those identified through the annual management system reviews. Two actions were still "in-process" as of June 2017; all others were completed and the incorporated corrections were actively tracked for their effectiveness.
- Office of Environmental Information (OEI)
    - The Office of Enterprise Information Program (OEIP) hosted monthly conferences with the EPA Quality Assurance Community consisting of the National Program Offices and Regions. During these meetings, OEIP addressed topics about quality processes and scientific expectations for the data and information used to support Agency decisions.
- Region 2
    - Region 2 submitted its Quality Assurance Annual Report and Work Plan (QAARWP) Bridge Report. This report contributed to scientific integrity and included QA Training, QA Succession Planning, QA Assessments conducted on each organization, and EPA Laboratory Competency Activities.
- Region 3
    - Region 3's Hazardous Site Cleanup Division (HSCD) previously identified that a full-time, dedicated data and quality manager was needed to best implement the division's quality and data management programs. In FY2017, Region 3's HSCD allocated the resources to hire a full-time data and quality manager. This person is responsible for the implementation of the division's quality program including tracking, auditing, and implementing quality programs, along with training and program improvements. The data and quality manager will also be responsible for helping to develop and implement a Remedial Data Management Plan. He/she will also work to ensure that all remedial site data is readily available in an easy to access database.
- Region 9
    - Region 9's Enforcement Division continued to implement and audit a new standard operating procedure for inspection reports. The reports follow a

standard template, are subject to peer and supervisory quality reviews, and generally are required to be completed within 60 days of the field inspection. On a quarterly basis, the Enforcement Division reviewed and evaluated compliance with the 60-day inspection report completion goal, addressed any issues, and improved the quality and timeliness of the inspection reports. The Enforcement Division participated in an audit of the division's Quality Assurance Field Assessment Procedures (QAFAP) to ensure national consistency and adherence to division standard operating procedures for field activities.

- The Region 9 Air Division completed five technical system audits (TSAs) of state, local, and tribal ambient air monitoring agencies. TSAs consist of an in-depth program review of all aspects of data collection, quality control/quality assurance, data validation, documentation, network design, and general program structure. All other monitoring agencies are on target for TSAs as required by regulation.

Release of Information to the Public

EPA encourages the transparency of Agency activities through communications tools such as online blogs, newsletters, news releases, and official publications. EPA also maintains several online databases that provide open access to Agency information. Special user interfaces allow the public to navigate EPA databases easily. Online tools such as dashboards and calculators allow users to access a variety of datasets, input their own data, and model personalized scenarios.

- Agency-wide
  - The cross-Agency Forum on Increasing Public Access to EPA Research, is currently in the process of implementing the "Plan to Increase Access to Results of EPA-Funded Scientific Research" (the Plan). The Plan was developed in response to the February 2013, White House memorandum, "Increasing Access to the Results of Federally Funded Scientific Research." The memorandum directs Federal agencies that spend over $100 million on research and development annually to make all peer-reviewed, scientific research publications and the underlying data available to the public.
- Office of Research and Development (ORD)
  - ORD's data, metadata, and publications were made publicly available in accordance with EPA's Public Access Plan through ScienceHub.
- Office of Chemical Safety and Pollution Prevention (OCSPP)
  - On June 22, 2017, EPA codified the Procedures for Prioritization of Chemicals for Risk Evaluation Under the Toxic Substances Control Act (Prioritization

Rule). The Prioritization Rule requires EPA to solicit public comments on chemicals once the process is underway, prior to proposing a designation, and after the proposed designation as either a high- or low-priority substance. EPA must also consider the public comments prior to issuing the Final Designation. The designation of chemicals as high-priority for further risk evaluation or low-priority is based on reasonably available information screened with respect to certain criteria such as hazard, exposure, conditions of use, persistence, and bioaccumulation, etc. The Risk Evaluation Rule requires all risk evaluations (both the scoping documents and draft risk assessments) to undergo public comment. Additionally, Office of Pollution Prevention and Toxics (OPPT) released Guidance to assist interested persons in developing and submitting draft risk evaluations under the Toxic Substances Control Act (https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/guidance-assist-interested-persons-developing-and-0). TSCA also requires EPA to publish an annual report on the plan for risk evaluations at the beginning of each calendar year; the first of these was published in February 2017 (https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/annual-plan-tsca-risk-evaluations). EPA's highly acclaimed ChemView website makes chemical health and ecological hazard safety documents and data accessible in integrated formats for use by decisionmakers.

- Region 3
    - Region 3's Office of Communications and Government Relations (OCGR) played an integral role in communicating scientific information to the public. OCGR worked with the Region's Divisions and Program Offices to inform the public that scientific reports and information were available, as well as significant public health-based decisions rooted in scientific research and findings. In 2017, OCGR worked closely with Region 3's Hazardous Site Cleanup Division (HSCD), Water Protection Division (WPD), Land and Chemicals Division (LCD), as well as the offices and programs at EPA's headquarters and the Agency for Toxic Substances and Disease Registry (ATSDR). Through these partnerships, Region 3 can effectively communicate to numerous communities and the media about public health risks associated with the contaminants lead and perfluorinated chemicals (PFCs) in drinking water.

Peer Review and Federal Advisory Committees

Scientific integrity ensures the quality of scientific and technical products by promoting adherence to proper scientific procedures. In FY2017, EPA continued its efforts to promote peer review as an essential component of quality scientific research products.

- Office of Research and Development (ORD)
    - NCEA utilized federal advisory committees for all high profile, influential assessments. Products that were not considered influential were externally peer reviewed by independent experts outside of EPA by using the Agency contract that was established to obtain external peer review of Agency products.
    - The National Homeland Security Research Center (NHSRC) conducted a thorough and transparent technical and peer review program for scientific products where reviewers from outside of the organization were sought and review comments and staff responses were documented.
    - The Office of Science Policy managed the Board of Scientific Counselors (BOSC), which was organized under the Federal Advisory Committee Act (FACA), and ensured that the BOSC's processes strictly adhered to all FACA requirements. Nominations for the BOSC Executive Committee and subcommittees were sought in an open and transparent manner. Members were selected based on their expertise, knowledge, and contribution to the relevant area, while also ensuring a balanced and diverse committee. Reports produced by the BOSC were recognized as products of the Committee and were not revised by ORD.
- Office of Water (OW)
    - Scientists in the Health and Ecological Division co-authored six papers in peer reviewed journals on topics related to nutrients and microbial pathogens.
- Office of Chemical Safety and Pollution Prevention (OCSPP)
    - The Science Advisory Committee on Chemicals https://www.epa.gov/tsca-peer-review), a FACA committee, was chartered and panelists seated to provide independent scientific advice and recommendations to EPA under the authority of TSCA.
- Region 2
    - The Region 2 Deputy Scientific Integrity Official announced in February that two Peer Review training modules were available on EPA's e-Learning Portal: Peer Review at EPA: Essentials, a short course geared towards EPA managers, and Peer Review at EPA: Using the Agency handbook, geared towards peer review coordinators, project managers, and others involved in or supporting peer review processes at the Agency. Although the training is not mandatory, participation is highly encouraged and its availability is announced quarterly.

- Region 3
    - Region 3's The Chesapeake Bay Program Office (CBPO) supported multiple independent scientific peer reviews and scientific focused workshops through the Chesapeake Bay Program partnership's (Partnership) Scientific and Technical Advisory Committee. These reviews and workshops followed EPA's Peer Review Policy and National Academy of Science's (NAS) program review guidelines. These peer reviews and technical workshops were designed to support the work of the Partnership on the 2017 Chesapeake Bay Total Maximum Daily Load (TMDL) Midpoint Assessment, the 2018 Jurisdictional development of their Phase III Watershed Implementation Plans, and other goals and outcomes of the 2014 Chesapeake Bay Watershed Agreement.

Professional Development

EPA encourages professional development activities so that EPA's scientists and engineers can maintain their expertise, be active members of their scientific communities, and become leaders in their fields. Training activities may include online courses, webinars, in-person workshops, or conferences. EPA provides several professional development opportunities for employees and encourages their participation in professional societies.

- Office of Enforcement and Compliance Assurance (OECA)
    - NEIC provided legal and testimony training for its staff who may potentially testify. The legal and testimony training was performed by OCEFT's Legal Counsel Division. Required NEIC staff completed OGE 450 reports to ensure that potential conflicts of interest were identified.
- Office of Air and Radiation (OAR)
    - Professional development of OAR personnel, including scientists, was strongly encouraged and accomplished through internal webinars and other EPA-sponsored training, funded off-site training, and by supporting staff participation in scientific conferences and workshops.
- Office of Water (OW)
    - The Office of Science and Technology (OST) encouraged technical staff to actively participate in professional development efforts such as co-authoring professional papers with ORD scientists titled "A Framework to Quantify the Strength of Ecological Links between an Environmental Stressor and Final Ecosystem Services" and "Diatoms to Human Uses: Linking Nitrogen Deposition, Aquatic Eutrophication, and Ecosystem Services." Both papers were published in Ecosphere.

    - The Engineering and Analysis Division (EAD) staff in OST attended multiple technical conferences including Water Environment Federation's Technical Exhibition and Conference (WEFTEC), the American Council of Independent Laboratories, PITTCON 2017 Conference and Symposium, the 2017 Water Quality Technology Conference, and the 2017 National Environmental Monitoring Conference.

- Office of Land and Emergency Management (OLEM)
    - OLEM hosted national training events that provided over 50 courses and opportunities for remedial project managers and technical staff to interact and share information on new technologies.

- Region 5
    - The Region 5 Science Council selected "science communication" as a high priority training need for FY2017. The Council used its annual training budget to sponsor science communication sessions in October 2016 and April 2017, each consisting of a plenary and a workshop, to allow the greatest possible number of regional managers and staff to participate. Participants learned techniques for presenting technical information clearly and in ways that meet the needs of various audiences including the public and the media.

- Region 8
    - Region 8's Professional Society Participation (PSP) Committee supported regional staff efforts to track and maintain professional society memberships and participation for career development. FY2017 highlights included designing the PSP elements of the regional science survey, outreach to training coordinators, programs to compile an inventory of PSP for regional staff, and work with the technical training committee to identify PSP training requirements.

Scientific Integrity Training and Training Evaluation

New Employee Onboarding

Since January 2017, all new EPA employees are required to take online scientific integrity training. This training consists of a video showing the Scientific Integrity Official conducting a training session that features the introductory whiteboard video and discussion, followed by a short quiz. Showing this training to new employees helps them to establish a personal commitment to scientific integrity, which contributes to the overall culture of scientific

integrity at EPA. In FY2017, 444 EPA employees completed the training. The growth in the cumulative number that have been trained is depicted in Figure 5.

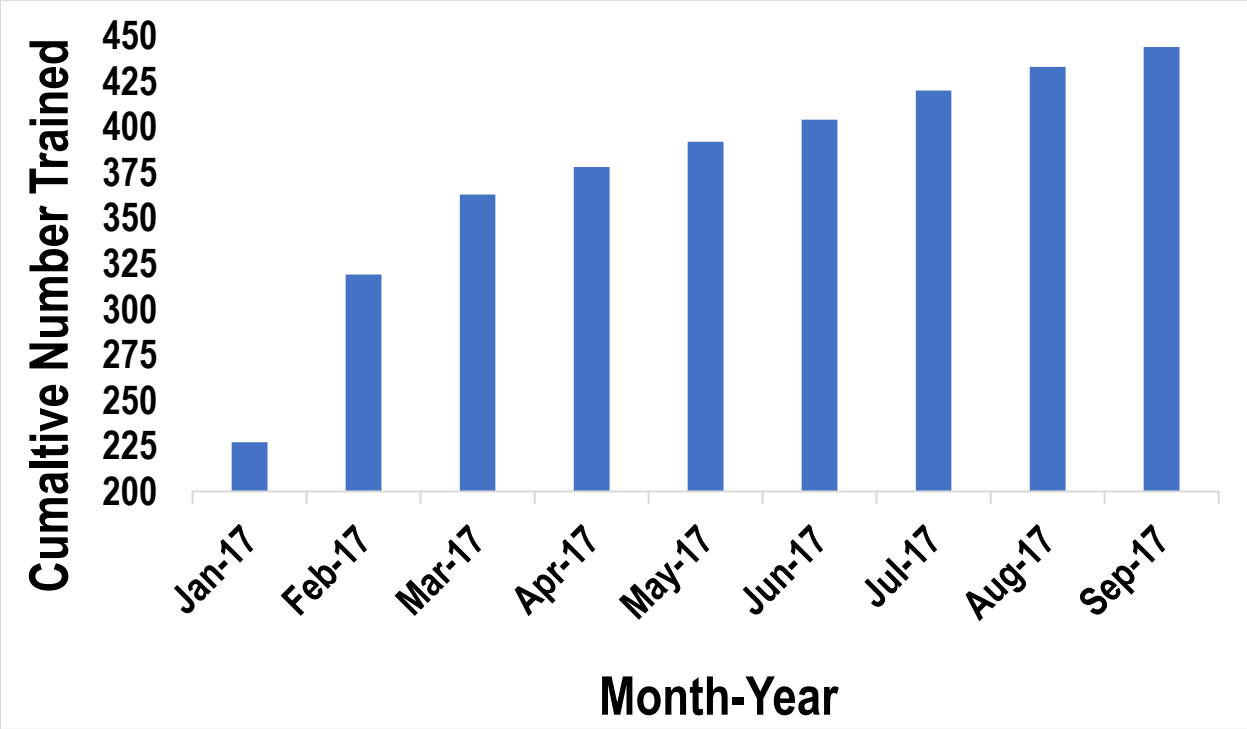


Figure 5. Cumulative number of EPA employees that completed onboarding training

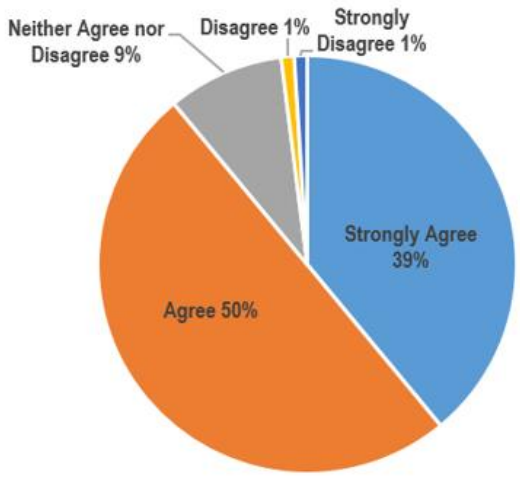
Training

In FY2017, a dozen Scientific Integrity Policy training sessions were held for 1,556 EPA employees. Each training session consists of a short overview, two videos, "Scientific Integrity at EPA" and a case study, each about four minutes long, and approximately 20 minutes of discussion. To date, 5,719 EPA employees, nearly 40% of the EPA workforce, have received scientific integrity training. Employees from every office and region have been trained.

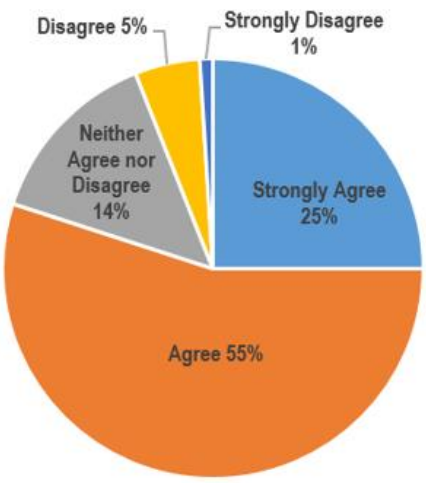
Table 1. FY2017 training by programs/offices and region

Programs/Offices	Regions	Unknown
911	640	5

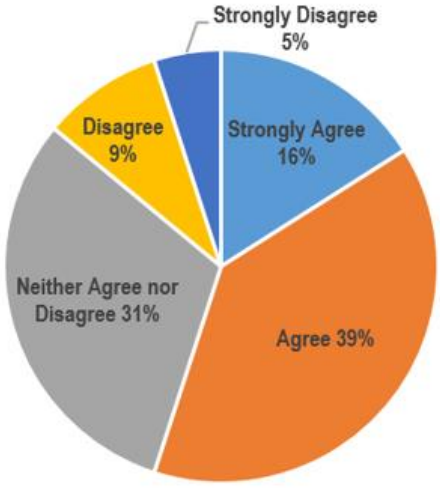
In FY2017, the Scientific Integrity Program released the results of a survey that was sent to all trainees. This survey aimed to evaluate the effectiveness of the training seminars. The 1,030 responses were predominantly positive, some of which are highlighted below in Figure 6.



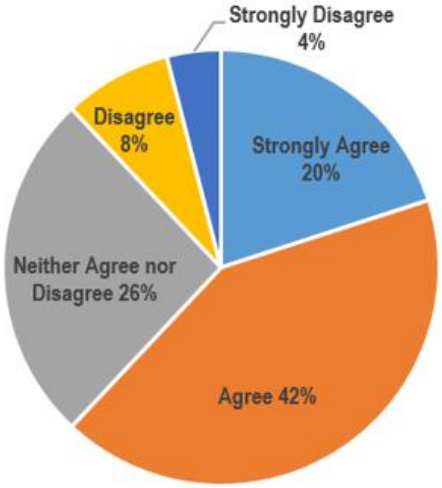
The presenter(s) communicated clearly and effectively.



The training was at the appropriate level for my current understanding/knowledge level.



This training will help me do my job more effectively.



I would recommend this training to a colleague/coworker.

Figure 6. Evaluation of scientific integrity training

Scientific Integrity at EPA: Results of the 2016 EPA Employee Survey

Scientific Integrity Survey Results

In 2016, the Scientific Integrity Program distributed a survey to all EPA Employees and utilized the results to assess the effectiveness of the Policy on the eve of its fifth birthday.

This survey asked respondents about their experiences with and opinions of scientific integrity at the Agency. In FY2017, the Scientific Integrity Program published a report that summarized the results and analyzed what these results say about the successes and challenges in the Agency's efforts to nurture a culture of scientific integrity. Reponses were received from 5,763 employees (a 39% response rate). These respondents represented all offices, programs, and regions. This report focused on the responses from 3,793 employees (66% of respondents) who stated that they spend "at least 25% of their time conducting, utilizing, communicating, or managing science" (Some of their responses are depicted in Figures 7-10).

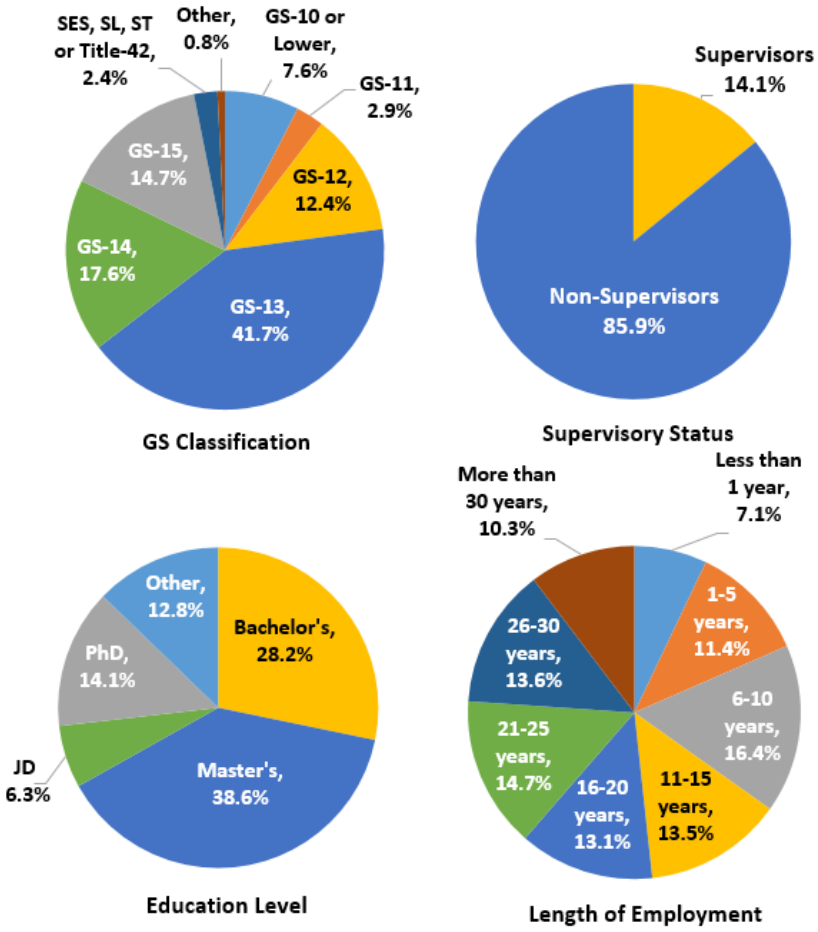


Figure 7. Descriptive categories of total respondents for employee survey

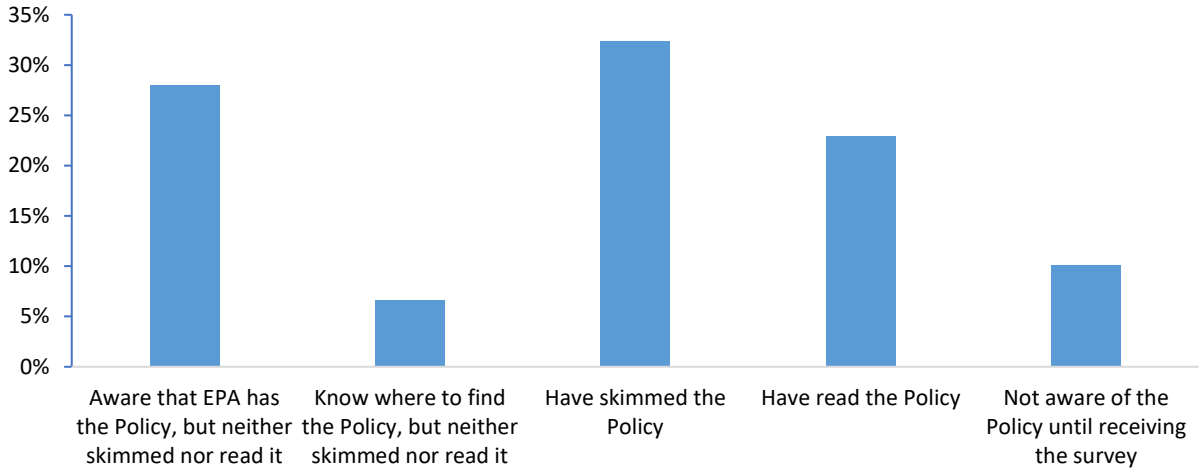


Figure 8. Familiarity with EPA's Scientific Integrity Policy

The results indicated that there is a widespread awareness across the Agency that the Policy exists (90%), but over 30% stated that they were unsure of its contents. Nearly all respondents knew that protections exist for whistleblowers (91%), but only about half (46%) of the respondents knew of specific protections. By a margin of two to one, respondents felt that they can state a scientific opinion regarding the Agency's scientific work without a fear of retaliation (67%). Slightly more than half of respondents believed that their management consistently stands behind scientists who put forth defensible positions even if they are controversial (52%). While a large swath of respondents (88%) would feel comfortable reporting a loss of scientific integrity to their supervisor, some dissenting opinions were expressed in the open-ended responses.

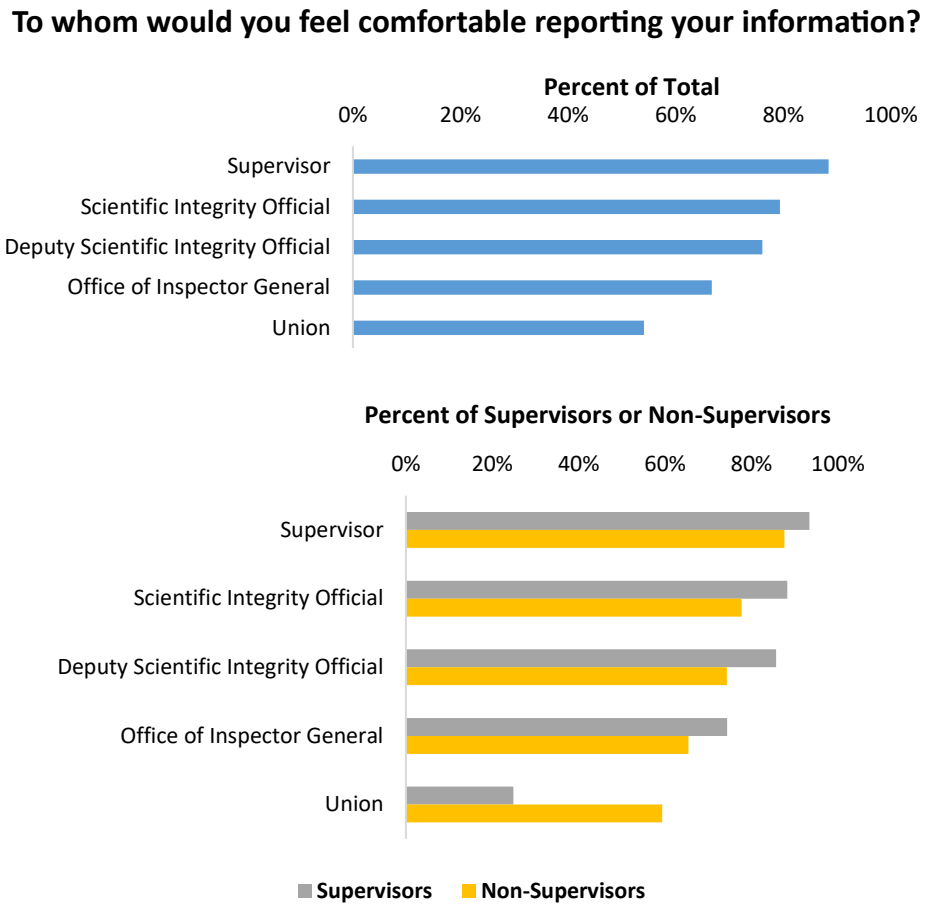


Figure 9. Trust in EPA authorities when reporting a loss in scientific integrity

Employees were less certain when responding to other questions. Only about 40% said that they know how to report an allegation of a loss of scientific integrity. A similar number (41%) believed that the scientific or technical products that they contribute to are released to the public in a timely fashion. Most respondents were pessimistic when asked whether the clearance process is transparent (39%), consistent across the office (30%), or if they can predict its timeline (12%) (The Scientific Integrity Program intends to unveil an electronic clearance system in FY2019 that will further promote transparency, clarity, timeliness, predictability, and consistency across the Agency. This versatile system will be an important component in implementing the Public Access Plan. Other anticipated benefits include automatic notifications to approvers and submitters, version control, and record-keeping).

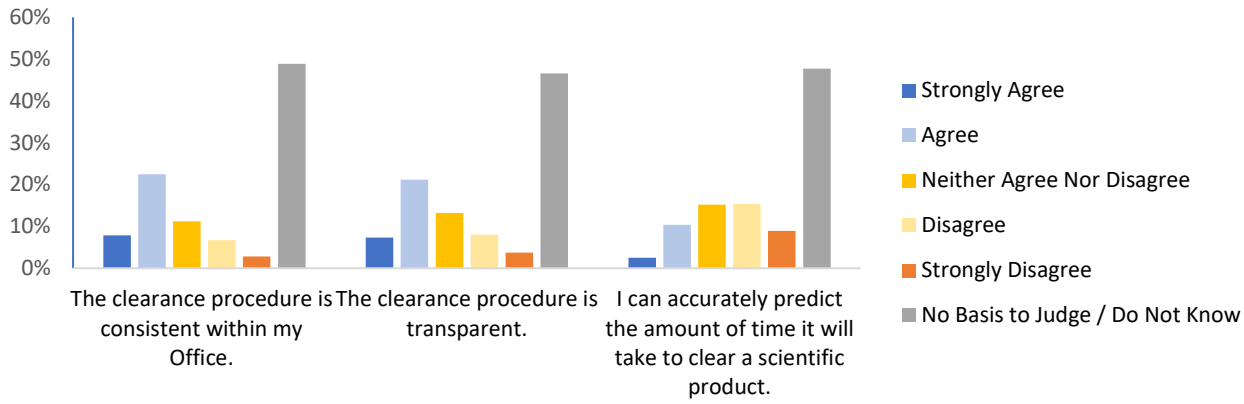


Figure 10. Clearance procedures at EPA

After analyzing the results, the Scientific Integrity Program determined that Policy implementation could be improved by increasing awareness and understanding of the Policy, further promoting a culture of scientific integrity, improving practices for releasing scientific information to the public, and promoting the professional development of EPA scientists and technical staff. The program identified 16 action plans that they can complete to address these focus areas. Four of these plans were already implemented in FY2017.

- ☑ After the survey period, the Scientific Integrity Program released a new training program that incorporated animated "whiteboard" videos that presented introductory information and a case study on scientific integrity. The training involved 98 trained staff who led sessions and reached 5,720 employees across all EPA offices, programs, and regions.
- ☑ In 2016, the Scientific Integrity Official briefed all new members of the Senior Executive Service (SES) and new Senior Level (SL), Scientific and Professional (ST), and Title 42 employees on scientific integrity as part of their onboarding process.
- ☑ Also in 2016, both the scientific integrity internet and intranet websites were expanded, updated, and redesigned to increase access to information and resources on scientific integrity at EPA.
- ☑ Since January 2017, all new EPA employees have been required to view a presentation by the Scientific Integrity Official and an animated whiteboard video as part of their onboarding process.

A description of the survey instruments can be found in Appendix A of the report.