2021 Highlights of Scientific Integrity

Annual Agencywide Scientific Integrity Meeting

On March 31, 2021, 3200 EPA employees participated in the eighth annual agencywide scientific integrity meeting. The participants represented all EPA Offices and Regions. The summary of the 2021 Agencywide Meeting can be found in the Comprehensive List of EPA Scientific Integrity Activities.

Biennial EPA Scientific Integrity Stakeholder Meeting

On June 15, 2021, the EPA held its biennial stakeholder meeting on Scientific Integrity. The external meeting provided a chance for stakeholders to learn, discuss, and ask questions regarding scientific integrity. A complete summary of the 2021 stakeholder meeting can be found in the Comprehensive List of EPA Scientific Integrity Activities.

External Tribal Partner Meeting

On July 27, 2021, the EPA Scientific Integrity Program hosted an external tribal partner meeting. The gathering allowed for discussion of the Scientific Integrity Policy at the EPA. A complete summary of the 2021 tribal partner meeting can be found in the Comprehensive List of EPA Scientific Integrity Activities.

Additional Internal Outreach

Throughout FY21, the Scientific Integrity Official provided over 20 internal briefings. These included general scientific integrity presentations, briefings to senior leaders in the offices and regions, and a briefing to Deputy Administrator McCabe. Additionally, several briefings focused on informing the Agency about the new EPAAR Contracts Clause and Differing Scientific Opinion document. A full listing of internal outreach can be found in the Comprehensive List of EPA Scientific Integrity Activities.

Scientific Integrity Mandatory Onboarding Training

As of January 2017, all new EPA employees have been required to take mandatory online scientific integrity training within six months of their onboarding. Training for new employees helps to establish personal commitments to scientific integrity, thus contributing to the overall culture of scientific integrity at EPA.

Onboarding training completion is tracked with quarterly status updates sent to the Scientific Integrity Committee so they may follow up with their employees. Through the end of fiscal year 2021, 2,444 EPA employees have successfully completed the onboarding training. Figure 1 below details the completed trainings for the previous fiscal years. Whereas Figure 2 details the percentage of employees who completed the training on time for the previous three fiscal years.

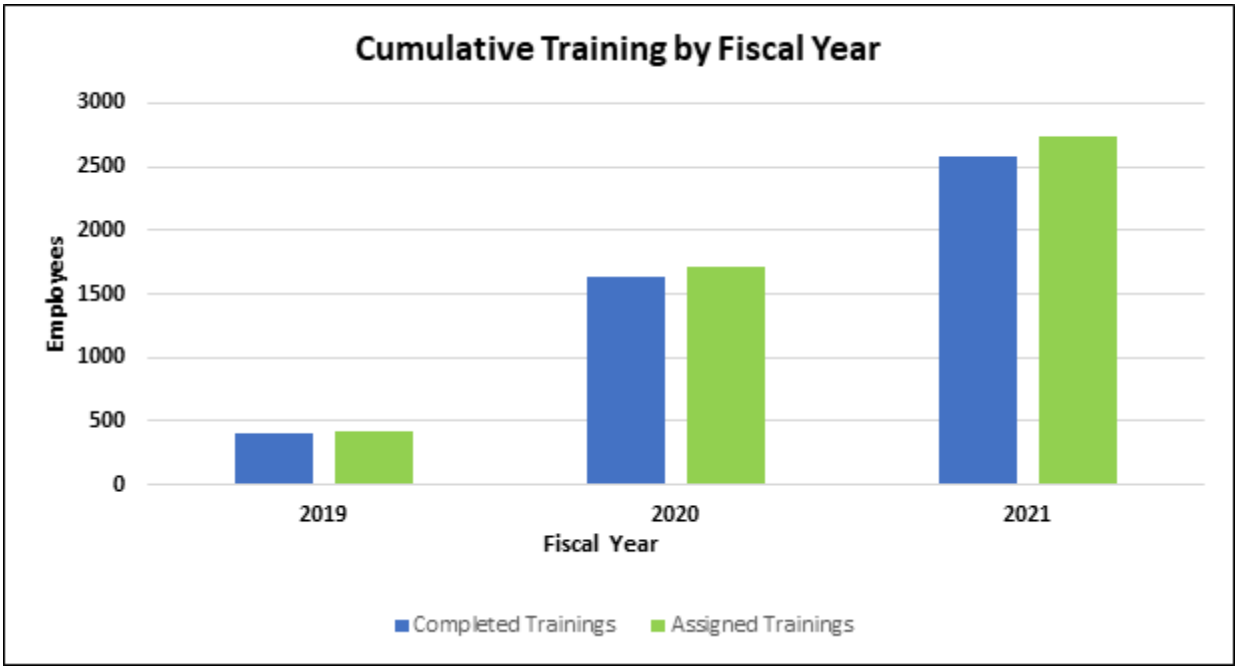

Figure 1. Completed onboarding trainings compared to assigned trainings for previous fiscal years

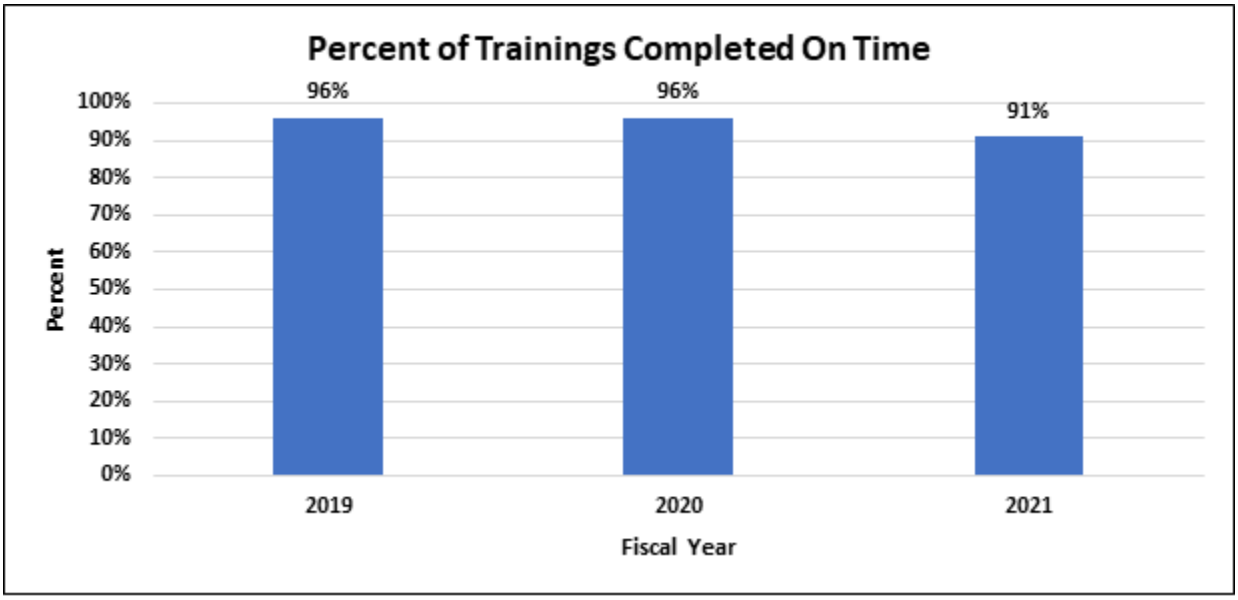

Figure 2. Percentage of Scientific Integrity trainings completed on time by fiscal year

Scientific Integrity Briefings for EPA Managers

In June 2021, the Scientific Integrity Official briefed managers, supervisors, and SES members on scientific integrity. Employees were informed on how to be leaders in scientific integrity, who to contact for more information, how to request advice and report allegations while being provided with examples of scientific integrity violations.

Both the First Line Supervisor Advisory Group (FLAG) meeting on March 25, 2021, and the virtual EPA Quality Program meeting on April 27, 2021, included presentations on scientific integrity and Differing Scientific Opinions (DSO).

Scientific Integrity Committee

The Scientific Integrity Policy established a Scientific Integrity Committee (the Committee), chaired by and composed of the Scientific Integrity Official (SIO) and senior officials (DSIOs) who represent each of the Agency's Offices and Regions. The Committee is responsible for promoting consistent implementation of the policy across the agency. The Committee meets quarterly. The participation of the Committee ensures that there is broad agency participation in SI. In FY 2021, the Committee focused on several topics: the Agencywide Scientific Integrity Survey, complying with executive orders (EO) "Protecting Public Health, Environment and Restoring Science to Tackle the Climate Crisis" and "Restoring Trust in Government through SI and Evidence Based Policymaking," revisions to the scientific integrity policy, and upholding EO "Advancing Racial Equity and Support for Underserved Communities through the Federal Government."

Scientific Integrity Committee Members

In FY 2021, the Committee welcomed new members Helen Serassio, John Blevins, and Sandra Spence, and thanked outgoing members Linda Anderson-Carnahan, Carol Ann Siciliano, Jim Payne, Dawn Taylor, and Deb Thomas for their hard work on scientific integrity issues. A complete listing of Scientific Integrity Committee members during FY 2021 can be found in the Comprehensive List of EPA Scientific Integrity Activities. The most up-to-date Committee member list can be found on the Scientific Integrity Homepage.

Agencywide Survey on Scientific Integrity

In May of 2021, the Scientific Integrity Program distributed an agencywide survey (The Survey) to all federal employees and received 2,688 responses. In alignment with previous surveys, the Survey was narrowed to a two-year recall period (2019-2020). These surveys allow the EPA to gain greater understanding of employees' perception regarding scientific integrity and are useful tools for analyzing year-to-year trends in scientific integrity. Dr. Dana Williamson and Dr. Angie Boyce provided significant technical assistance on the creation and distribution of the Survey. Full results can be found on the 2021 Scientific Integrity Survey Page.

Design

The survey instrument assessed employees' awareness of the Scientific Integrity Policy and their experiences related to the culture of scientific integrity at EPA. Existing questions from both the 2016 and 2018 surveys were used as well as modified, and new questions were drafted to better assess aspects of scientific integrity and how the culture can be enhanced. There were twelve multiple response option participant demographic questions and 15 Likert scale questions with response options ranging from strongly agree to strongly disagree, very satisfied to very dissatisfied, excellent to poor, extremely familiar to unfamiliar, not at all confident to extremely confident, and

very comfortable to not at all comfortable. There were 21 yes/no questions, two ranking-style questions in which respondents prioritized and selected the top five choices, and 21 open-ended response questions. Questions were divided across 10 primary themes: manager experiences/perceptions, familiarity with policy, culture of scientific integrity, leadership, procedures and experiences with reporting lapses, knowledge and experiences related to misconduct, review and release of scientific information and media, and barriers/suggestions for improvement, and demographics.

Response Rate

The survey was sent to all EPA Federal employees (n=14,734); this pool excluded contractors, grantees, fellows, students, volunteers, or any special appointments. Approximately 4,470 (30.4%) accessed the link and started the survey and among these 2,668 employees (59.3%) completed the survey and submitted their responses. The response rate from the 2,688 employees who submitted their responses was 18.1% (2668/14,734). All federal employees were eligible for participation and had an equal opportunity to be a part of this survey. The survey sample was representative of the larger population of EPA as the respondents' demographic characteristics mirrors those of the Agency at the time the survey was distributed.

Scientific Integrity Activities Reported from EPA Offices and Regions

Since 2013, EPA Assistant Administrators and Regional Administrators have been required to submit a certification of internal controls for scientific integrity by complying with the Federal Managers Financial Integrity Act (FMFIA). Based on the requirements that are outlined in the Scientific Integrity Policy, offices and regions are asked annually to report on their accomplishments, potential weaknesses, overall progress, and any need for assistance in implementing the Agency's Scientific Integrity Policy. An overview of the responses is reflected in this section. A listing of the FY 2021 scientific integrity activities can be found in the Comprehensive List of EPA Scientific Integrity Activities.

The Use of Technical and Peer Review

The quality of the Agency's science relies on technical review and peer review of scientific reports, data, and new products. Quality assurance plans, new tools or technology in development, internal and external reviews, and the standardization of procedures and policies are strategies that are used for technical and peer reviews.

- The Office of Administration - Science Advisory Board (OA-SAB) manages two federal advisory committees (FACs) called the Science Advisory Board and the Clean Air Scientific Advisory Committee which were reset by the Agency's Administrator. Over 450 candidates were recruited to the SAB Staff Office to form a new Board, a more balanced committee of experts, and expedite the advisory

process. The new Board will conduct reviews of Agency scientific methods and data and establish new regulations as needed.

- Region 3's Laboratory Services and Applied Science Division (LSASD) implemented the Quality System which corrects identified quality assurance vulnerabilities and has led to the initiation of quality assurance assessments of projects in FY 2021. LSASD is aiding Tribes who are developing their own Quality Systems. New templates are being developed to increase coverage and data integrity and include new or improved Standard Operating Procedures, Quality Assurance Plans, Quality Assurance Program Plans and Field Sampling Plans. LSASD has automated the laboratory data review and the new standard operating procedures for the electronic review process. LSASD is collaborating with the Society for Freshwater Science to construct a fish taxonomic certification process for quality assurance and quality control purposes.

Release of Scientific Information

The Release of Scientific Information for the Public is one of the four areas outlined in EPA's Scientific Integrity Policy. Scientific research and analysis comprise the foundation of all major EPA policy decisions. Therefore, the Agency should ensure that scientific research and results are presented openly with integrity, accuracy, and timeliness, and made available for demanded full public scrutiny when developing sound, high-quality environmental science.

- The Office of Administration- Science Advisory Board (OA-SAB) is transferring its database to a new format called ORACLE that will post information in real-time. The public will have more transparency and visibility into the Agency's peer review process and will have access to Board and Committee information that is still in progress. The increased access will enable the public to provide input on that information to advisory committee members.

- The Office of Chemical Safety and Pollution (OCSPP)- Office of Program Support (OPS) initiated FOIA disclosure projects that are designed to increase stakeholder access to scientific information and reduce FOIA requests. The projects include making Data Evaluation Records and data forms for the Data Matrix and Certification publicly available, increasing availability of Confidential Business Information documents, and holding regular meetings with Non-Governmental Organizations.

- The Region 8 Science Council's Data Management Committee and the Mission Support Division's Information Management Branch collaborated and founded the Data Stewards Network. The Data Stewards Network's priority is to make data searchable, accessible, interpretable, and reusable by EPA and the public as well as make data management a central component of EPA work and encourage institutional coalition building.

Professional Development and Outreach

Training and outreach are two of the greatest tools to increase the impact and scope of Scientific Integrity efforts across the Agency. Training connects individuals with resources and contacts that help ensure scientific integrity standards are being met. Outreach efforts spread awareness across the Agency about the Scientific Integrity Policy and new scientific integrity initiatives.

- The Deputy Scientific Integrity Official and the Assistant Administrator collaborated to provide training webinars on scientific integrity for the entire Office of Chemical Safety and Pollution (OCSPP) staff. The webinars were on the following topics: an overview of Scientific Integrity Policy, whistleblowing protecting and scientific integrity, differing scientific opinions, and science versus science policy: what is the difference?

The Office of Enforcement and Compliance Assurance's (OECA) National Enforcement Investigations Center (NEIC) was invited to attend two Agencywide Scientific integrity meetings in FY 2021. They developed a system for evaluating potential quality risks and provided training to supervisory staff on topics like evidence handling principles, cognitive bias in forensic science, ethical practices in forensic sciences and examples of unethical identified practices, forensic science consensus standard setting bodies.

- In April 2021, Region 4's Water Division (WD) held a training for a state and tribal audience regarding changes to the 2020 Clean Water Act Section 401 Certification Rule. The training also addressed challenges that agencies have been facing and to resolve any misconceptions. WD collaborated with Corps-EPA to form workgroups that discussed the implementation of the Navigable Waters Protection Rule and concluded the need for more clarification and trainings on the implementation of the rule. Following that conclusion and answering technical implementation questions, the workgroups developed logical and consistent implementation strategies of the Navigable Waters Protection Rule.

Safeguarding Scientific Integrity Across EPA Highlights

While policies, procedures, training, outreach, and technical and peer review are all vital to safeguarding scientific integrity across the Agency, leaders are taking additional steps to ensure a robust culture of scientific integrity in their program or regional offices. These efforts include networking initiatives, citizen science, and pilot programs that are all intended to enhance the culture of scientific integrity in their offices.

- National Center for Environmental Economics (NCEE) is providing recommendations and language suggestions to the Scientific Integrity Official so that the Scientific Integrity Policy would be updated to include terminology related to economics and economic analyses. Since economic analyses can be seen as scientific products that are important for decision making, and NCEE wants them to be protected by the Scientific Integrity Policy.

- Two of Region 4's Divisions have led initiatives towards Scientific Integrity. The Air and Radiation Division (ARD) proposed a citizen science project called MobilEyes Savannah that is intended to be implemented in FY 2022. The project would equip citizens with Telraam sensors that would collect data on truck traffic. Citizens and local authorities would have access to the data. The data is also intended to assist with analyses of traffic impacts and see if it can be used elsewhere. Water Division's (WD) Drinking Water Section developed questionnaires for states about their implementation of important components of the Lead and Copper Rule and Public Notification Rule. Important components can include sample site plan review, consumer notices, and data management. The team plans to use the questionnaire responses to improve technical assistance efforts and offer trainings tailored better to the States' needs.

- Region 6's Water Enforcement Branch initiated a pilot project called the EPA Stream Connectivity Analysis Tool. The tool provides EPA a transparent and repetitive method to document Waters of the US (WOTUS) findings. As a result of this pilot project, Water Enforcement Branch staff have been overwhelmed with assistance requests from staff in other divisions concerning WOTUS data. A SharePoint site was made to help the Water Enforcement Branch Staff with organizing managing requests.