



BIENNIAL REPORT ON THE IMPLEMENTATION STATUS OF FEDERAL SCIENTIFIC INTEGRITY POLICY AND PRACTICE

A Report by the
WHITE HOUSE OFFICE OF SCIENCE AND TECHNOLOGY POLICY

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About This Report

This report was developed in response to the 2021 Presidential Memorandum on *Restoring Trust in Government through Scientific Integrity and Evidence-Based Policymaking*, which directed the White House Office of Science and Technology Policy (OSTP) to produce a biennial report on the status of implementation of scientific integrity policies across the executive branch. This report outlines key achievements that have been made since the memorandum's issuance, including interagency activities.

About the Office of Science and Technology Policy

OSTP was established by the National Science and Technology Policy, Organization, and Priorities Act of 1976 to provide the President and others within the Executive Office of the President with advice on the scientific, engineering, and technological aspects of the economy, national security, homeland security, health, foreign relations, the environment, and the technological recovery and use of resources, among other topics. OSTP leads interagency science and technology policy coordination efforts, assists the Office of Management and Budget with an annual review and analysis of federal research and development in budgets, and serves as a source of scientific and technological analysis and judgment for the President with respect to major policies, plans, and programs of the federal government. More information is available at <http://www.whitehouse.gov/ostp>.

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Executive Summary

In his first week in office, President Biden issued a Memorandum on Restoring Trust in Government through Scientific Integrity and Evidence-Based Policymaking (2021 Presidential Memorandum). The 2021 Presidential Memorandum details a series of directives to protect government science and promote a culture of scientific integrity, noting: “Scientific and technological information, data, and evidence are central to the development and iterative improvement of sound policies, and to the delivery of equitable programs, across every area of government.”¹ When federal agencies are able to freely conduct and use science in decision making without fear of inappropriate influence, the United States government can better improve the environment and the health, security, safety, equity, and well-being of all people.

The 2021 Presidential Memorandum, covers federal departments and agencies that conduct and fund scientific research, as well as those that communicate or make use of scientific and technical information. This scope underscores that scientific integrity is everyone’s responsibility—including those who conduct and manage research, those who communicate research results, and those who ultimately use science and evidence in policies and practices. Covered agencies were instructed to strengthen or develop scientific integrity policies and procedures and appoint scientific integrity officials. The President directed the White House Office of Science and Technology Policy (OSTP), acting through the National Science and Technology Council (NSTC), to coordinate these activities in collaboration with agencies across the federal government to institutionalize a culture of scientific integrity across the federal government.

The 2021 Presidential Memorandum also charged OSTP to develop a biennial report on the implementation of scientific-integrity activities across the executive branch. This report summarizes key achievements that federal agencies have made since memorandum’s issuance.

1. Introduction

Science and technology are central to addressing the nation’s most pressing challenges, advancing the health and vitality of communities across the country, and promoting competitiveness and prosperity. Scientific integrity is defined by the U.S. federal government as:

*The adherence to professional practices, ethical behavior, and the principles of honesty and objectivity when conducting, managing, using the results of, and communicating about science and scientific activities. Inclusivity, transparency, and protection from inappropriate influence are hallmarks of scientific integrity.*²

¹ Presidential Memorandum on *Restoring Trust in Government Through Scientific Integrity and Evidence-Based Policymaking*. January 27, 2021. Available at: <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/memorandum-on-restoring-trust-in-government-through-scientific-integrity-and-evidence-based-policymaking/>

² This definition was released in the January 2023 *NSTC Framework for Federal Scientific Integrity Policy and Practice*. Available at: <https://www.whitehouse.gov/wp-content/uploads/2023/01/01-2023-Framework-for-Federal-Scientific-Integrity-Policy-and-Practice.pdf>

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Protecting scientific integrity is critical to ensuring that science can best serve the needs of the nation, allowing the best-available science to inform evidence-based decision making. The American public has the right to expect the decisions that impact their daily lives are based on rigorous scientific research that is free from inappropriate interference, including politically motivated suppression or distortion. The 2021 Presidential Memorandum reaffirmed and built on the 2009 Presidential Memorandum on Scientific Integrity (2009 Presidential Memorandum)³ and the 2010 OSTP Memorandum on Scientific Integrity (2010 OSTP Memorandum).⁴

The 2021 Presidential Memorandum charged OSTP and the NSTC to coordinate and collaborate with federal agencies and departments (referred to collectively as “agencies” in this report) that conduct, manage, communicate, and use science⁵ on several key actions to strengthen and protect scientific integrity across the federal government. These actions included:

1. Ensuring that all agencies have a designated Scientific Integrity Official (SIO) to oversee implementation and improvement of scientific integrity policies, and that those agencies that fund, conduct, or oversee scientific research designate a Chief Science Officer (CSO).
2. Establishing an interagency Task Force to conduct a thorough review of the effectiveness of agency scientific integrity policies.
3. Developing a framework to support the regular assessment and iterative improvement of agency scientific integrity policies and practices, including assessment criteria that OSTP and agencies can use to inform, review, and improve the design and implementation of policies.
4. Ensuring agency scientific integrity policies and procedures are updated or developed to respond to the Task Force’s analysis and uphold the highest standards of practice.

As directed by the 2021 Presidential Memorandum, OSTP has outlined key scientific integrity achievements and implementation efforts since January 2021 in this first-ever biennial report. The report begins with a high-level overview of interagency efforts to lay the foundation for a strengthened culture of scientific integrity, which resulted in the January 2023 release of a Framework for Federal Scientific Integrity Policy and Practice (Section 2).⁶ The report continues by describing the progress that agencies have made in implementing the Framework through development, implementation, and regular assessment of federal scientific integrity policies and practices. Twenty-six agencies reported their progress through a data call issued by OSTP, with support from the IDA Science and Technology Policy Institute, to agency SIOs, CSOs, and other federal staff involved in scientific integrity policy

³ Presidential Memorandum for the Heads of Executive Departments and Agencies on Scientific Integrity. March 9, 2009. Available at: <https://obamawhitehouse.archives.gov/the-press-office/memorandum-heads-executive-departments-and-agencies-3-9-09>.

⁴ OSTP Memorandum for the Heads of Executive Departments and Agencies on Scientific Integrity. December 17, 2010. Office of Science and Technology Policy. Available at: <https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/scientific-integrity-memo-12172010.pdf>.

⁵ The term “science” is used to refer to the full spectrum of scientific endeavors, including basic science, applied science, evaluation science, engineering, technology, economics, social sciences, and statistics, as well as the scientific and technical information derived from these endeavors.

⁶ National Science and Technology Council Scientific Integrity Framework Interagency Working Group. *A Framework for Federal Scientific Integrity Policy and Practice*. January 2023. Available at: <https://www.whitehouse.gov/wp-content/uploads/2023/01/01-2023-Framework-for-Federal-Scientific-Integrity-Policy-and-Practice.pdf>

implementation. Given agencies covered by the 2021 Presidential Memorandum have varying levels of experience and expertise with scientific integrity policy development and implementation, the results of the data call outlined in this report illustrate various stages of implementation. While some agencies have nearly complete policies and accompanying procedures that align with the Framework, others are working to establish their scientific integrity programs for the first time. As a result, this report also describes efforts coordinated through the NSTC Subcommittee on Scientific Integrity (see Section 2.3) to provide the needed support and coordination to all agencies updating or developing their policies and practices. As OSTP's first biennial report on scientific integrity, this will serve as a benchmark against which progress can be measured as federal agencies continue their work to strengthen the integrity of and trust in government through decision making guided by science.

2. Laying the Groundwork for Strengthened Agency Scientific Integrity Policies and a U.S. Government-Wide Culture of Scientific Integrity

The 2021 Presidential Memorandum charged OSTP to (1) review the effectiveness of current agency scientific integrity policies and (2) use that review to develop a framework for regular assessment and iterative improvement of agency scientific integrity policies. This work was coordinated through the NSTC, leveraging the expertise and experiences of federal colleagues across the U.S. government. This section summarizes major milestones and achievements since January 2021.

2.1 January 2022 NSTC Report on Protecting the Integrity of Government Science

Prior to issuance of the 2021 Presidential Memorandum, 24 federal agencies had scientific integrity policies in place.⁷ These policies were developed and implemented in response to the 2009 Presidential Memorandum and the 2010 OSTP Memorandum. The 2021 Presidential Memorandum established the NSTC Scientific Integrity Fast Track Action Committee (SI-FTAC) to conduct a thorough and systematic review of these policies and associated practices in the years since their implementation. The SI-FTAC was made up of 57 representatives from 29 federal agencies that communicate and use science in their decision-making processes. Members of the SI-FTAC were selected for their diversity of perspectives; many were involved in the development of their agencies' scientific integrity policies, others had first-hand knowledge of lapses in scientific integrity at their agencies, while others were able to share best practices and successes in policy implementation.

The work of the SI-FTAC culminated in the January 2022 release of the NSTC report on Protecting the Integrity of Government Science (2022 NSTC Report), as directed by the 2021 Presidential Memorandum.⁸ The report presented the SI-FTAC's assessment of agency scientific integrity policies, including good practices for improving implementation and areas in need of greater consistency across agencies. The SI-FTAC found that most of the assessed scientific integrity policies addressed or at least partially addressed four areas of scientific integrity—foundations of scientific integrity, public

⁷ See: <https://obamawhitehouse.archives.gov/administration/eop/ostp/library/scientificintegrity>

⁸ National Science and Technology Council Scientific Integrity Fast-Track Action Committee. *Protecting the Integrity of Government Science*. January 2022. Available at: https://www.whitehouse.gov/wp-content/uploads/2022/01/01-22-Protecting_the_Integrity_of_Government_Science.pdf

communications, use of Federal Advisory Committees, and professional development of government scientists and engineers—outlined in the 2010 OSTP Memorandum.⁴ There were notable differences, however, in agency policies, including how scientific integrity was defined, the relationship between scientific integrity and research misconduct, individuals covered by the policy, what elements of scientific integrity were addressed in the policies, associated implementation procedures, and the degree to which they were implemented. The SI-FTAC recommended greater consistency in these areas to advance a shared, government-wide understanding of the practices and culture needed to protect and promote scientific integrity.

This assessment reflected the experiences and expertise of the SI-FTAC members and extensive consultation and engagement with more than a thousand individuals across federal agencies, the scientific community, and the general public. These engagements included a request for information (RFI) on the perceived effectiveness of federal scientific integrity policies and sharing of best practices agencies may adopt;⁹ agency roundtables with federal scientists, communicators, and SIOs; and public listening sessions to hear from those who conduct, manage, communicate, or make use of science.¹⁰ The findings of the report laid the foundation for a framework to support regular assessment and iterative improvement of agency scientific integrity policies, led by the Scientific Integrity Framework Interagency Working Group (SIF-IWG) immediately following the report’s release.

2.2 January 2023 NSTC Framework for Federal Scientific Integrity Policy and Practice

Building on the findings of the 2022 NSTC Report, the SI-FTAC turned its attention to developing a Framework for Federal Scientific Integrity Policy and Practice (the Framework), which OSTP released in January 2023.⁶ The 2022 NSTC Report found considerable variability across agency scientific integrity policies and practices. While recognizing that these policies and practices should be tailored to the unique needs of agency missions, statutes, and regulations, the report identified key areas that would benefit from greater consistency. Specifically, the 2022 NSTC Report identified key approaches to strengthening protections for government science in five areas: (1) strengthening scientific integrity policies, (2) making scientific integrity everyone’s responsibility, (3) implementing good practices, (4) addressing emerging themes, and (5) institutionalizing scientific integrity.⁸

The Framework provides clear guidance on how agencies can improve their policies and practices to better safeguard federal science and scientists—and to do so in a manner that promotes a consistent understanding and culture for scientific integrity, leaving flexibility to accommodate differing agency missions and needs. The Framework created a roadmap for advancing the accomplishments outlined in the remainder of this report. Notably, the Framework contains:

⁹ White House Office of Science and Technology Policy. “Request for Information to Improve Federal Scientific Integrity Policies.” Federal Register. Doc. 2021-13640. June 28, 2021. Available at: <https://www.federalregister.gov/documents/2021/06/28/2021-13640/request-for-information-to-improve-federal-scientific-integrity-policies>.

¹⁰ White House Office of Science and Technology Policy. “Public Listening Sessions on Scientific Integrity and Evidence-Based Policymaking.” Federal Register. Doc. 2021-15309. Available at: <https://www.federalregister.gov/documents/2021/07/20/2021-15309/public-listening-sessions-on-scientific-integrity-and-evidence-based-policymaking>.

1. A U.S. government-wide definition for scientific integrity, which was developed and agreed upon by the SIF-IWG and the SI-FTAC and has since been adopted by federal agencies and incorporated into their updated or newly developed scientific integrity policies.
2. A model scientific integrity policy to assist agencies as they develop and update their policies. The model policy included discussions of several intersecting policies that relate to scientific integrity, including research security, the Foundations for Evidence Based Policy Making Act, and promotion of diversity, equity, inclusion, and accessibility.
3. The model policy was accompanied by critical scientific integrity policy features, which were used by OSTP to assess updated or newly developed scientific integrity policies to ensure they met the expectations of the 2021 Presidential Memorandum and related policies and guidance, as described in Section 3 of this report. Adherence to these features ensures that core components of scientific integrity are upheld in a consistent manner across federal agencies.
4. Critical metrics for regular assessment and iterative improvement of agency scientific integrity policy implementation, which served as the basis for OSTP's data call to inform the development of this and subsequent OSTP biennial reports on scientific integrity.
5. A roadmap for success in scientific integrity, including measures for regular assessment and iterative improvement. This roadmap offers a template for agencies to use as they develop plans to evaluate the impact of scientific integrity policy and practice. Progress towards developing evaluation plans is further described in Section 5 of this report.
6. A charter for the NSTC Subcommittee on Scientific Integrity, described further in Section 2.3.

The Framework was accompanied by a 2023 OSTP Memorandum on the Delivery of the Framework (2023 OSTP Memorandum),¹¹ which detailed implementation instructions for federal agencies and committed OSTP to developing its own scientific integrity policy, which was established in May 2023.¹²

2.3 Establishment of the NSTC Subcommittee on Scientific Integrity

The NSTC established the Subcommittee on Scientific Integrity (the Subcommittee) to facilitate the regular assessment and iterative improvement of scientific integrity policy and practice, as well as provide a scientific integrity community of practice for federal agencies.¹³ Membership of the Subcommittee is comprised of federal agency SIOs, as well as other staff involved in scientific integrity implementation and evaluation efforts at their agencies. The Subcommittee is charged with fostering and strengthening a culture and practice of scientific integrity across the U.S. government and providing coordination, information-sharing, and support across agencies and components of the Executive Office of the President. To support this charge, the Subcommittee has established Interagency Working Groups (IWGs) to coordinate around communications, assess policies and procedures, support the development of implementation and evaluation frameworks, exchange best

¹¹ OSTP Memorandum to Heads of Agencies and Departments, Chief Science Officers, and Scientific Integrity Officials on the Delivery of the Framework for Federal Scientific Integrity Policy and Practice. January 12, 2023. Available at: https://www.whitehouse.gov/wp-content/uploads/2023/01/01-2023-Memorandum_on_Framework_Delivery.pdf

¹² See OSTP's Scientific Integrity Policy: <https://www.whitehouse.gov/wp-content/uploads/2023/06/OSTP-SCIENTIFIC-INTEGRITY-POLICY.pdf>

¹³ The charter for the NSTC Subcommittee on Scientific Integrity is available at: <https://www.whitehouse.gov/wp-content/uploads/2023/01/07-2022-SOSI-NSTC-Charter.pdf>

practices around workforce training to support scientific integrity, and respond to emerging needs. The Subcommittee may also, when appropriate, assess, analyze, and offer recommendations on public allegations of scientific integrity violations that involve senior-level officials, political appointees, or SIOs or allegations involving multiple agencies to the extent allowed by law, applicable regulations, and consistent with privacy obligations. The Subcommittee is therefore an important tool in promoting a consistent, whole-of-government approach to promoting a culture of scientific integrity, while providing a forum for shared learning and capacity development to support such a culture.

3. Establishment of Scientific Integrity Policies and Associated Procedures

Since the release of the Framework, 28 departments, independent agencies, distinct agencies within departments, or offices (hereafter referred to as ‘agencies’) have submitted scientific integrity policies for review and approval to OSTP (see Appendix A for a complete listing). As of the September 2024 publication of this report, 25 of these 28 agencies have designated SIOs, with the remaining three designating staff to coordinate scientific integrity policy development and implementation in the interim until an SIO is appointed. Reviews of scientific integrity policies were facilitated through the Subcommittee’s Interagency Working Group on Policy and Assessment, which was made up of volunteers across agencies with experience in scientific integrity policy development and implementation. Assessment of policies was guided by the critical scientific integrity policy features detailed in Chapter 5 of the Framework and reflected in the model scientific integrity policy. While many agencies adopted and tailored the model policy to their agency’s missions and existing policies, practices, and procedures, others structured their policies differently, taking care to map elements of their policies to the critical scientific integrity policy features. The review process adopted by OSTP and implemented through the Subcommittee ensured that agency scientific integrity policies met the expectations of the 2021 Presidential Memorandum and incorporated best practices and lessons learned from the 2022 NSTC Report. The assessment and approval process also reinforced a commitment to greater consistency across agency scientific integrity policies, which is essential to promoting a shared culture of scientific integrity across the federal government.

Following OSTP’s approval of all submitted agency scientific integrity policies, agencies sought stakeholder feedback on their policies with agency staff and contractors, as well as key external communities, to gain insights into how their policies could be further improved. Agencies solicited feedback through a number of mechanisms, including through RFIs accompanied by their draft approved scientific integrity policies, listening sessions with agency staff and/or members of the public, presentations made to agency management and leadership, Tribal consultation, and union negotiations with government workers. In addition, OSTP and the Subcommittee hosted two listening sessions in September 2023 to hear recommendations, issues, and concerns related to federal agency

implementation of the Framework from members of the public, with a special emphasis on the model policy to inform finalization of agency scientific integrity policies.¹⁴

As of the September 2024 publication of this report, new or updated scientific integrity policies have been finalized for over half (19 out of 28) of the federal agencies that submitted policies to OSTP. The remaining 9 agencies have OSTP-approved policies that are still undergoing review and approval within their agencies. 7 of these agencies have pre-existing policies that are currently in effect, which were responsive to the 2010 OSTP Memorandum; two of these seven have publicly posted their draft scientific integrity policies that were approved by OSTP for public comment. As agencies continue to finalize and post their scientific integrity policies, OSTP and the Subcommittee will coordinate with CENDI, an interagency group working to improve productivity of federal research and development efforts, to update the Scientific Integrity page on Science.gov, which serves as a centralized resource for the public to access information on federal scientific integrity policy and practice.¹⁵

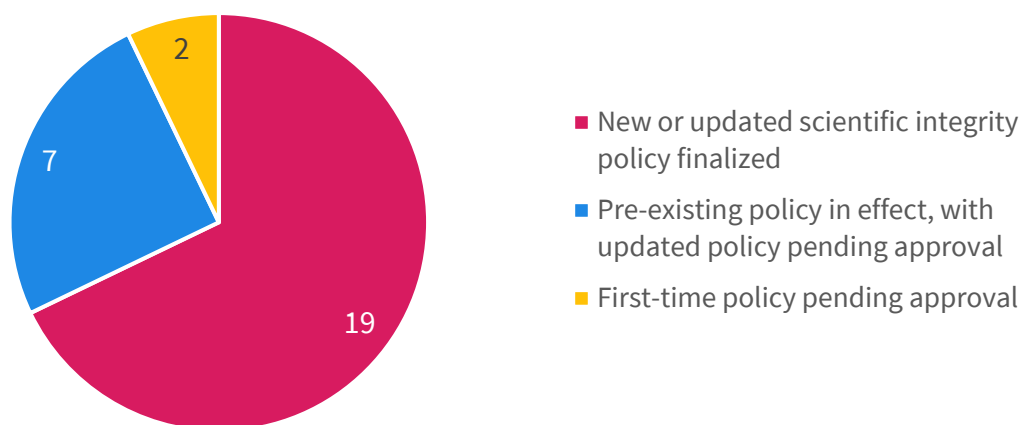


Figure 1. The status of scientific integrity policies across 28 U.S. federal agencies, as of the publishing of this report (September 2024). Two of the seven agencies that have a pre-existing policy in effect, with an updated policy pending approval, have publicly posted their updated draft scientific integrity policies for public comment.

In addition to requiring scientific integrity policies, the 2021 Presidential Memorandum tasked heads of federal agencies with developing and publishing procedures for implementing those policies. The Framework reinforced this requirement in the model policy and associated critical features. Specifically, the model policy states that within one year of the release of the agency’s scientific integrity policy, the SIO shall draft and post the following procedures: addressing scientific integrity concerns, handling differing scientific opinions, clearance of scientific products, scientific communications, authorship and attribution, and other topics as needed.⁶ Agencies were therefore asked to share the development status of these associated procedures, which is shown in Figure 2. Agencies that have yet to finalize associated procedures noted that these procedures are either

¹⁴ National Science Foundation. “Notice of Public Listening Sessions on Federal Agency Implementation of the National Science and Technology Council Framework for Federal Scientific Integrity Policy and Practice.” Federal Register Doc. 2023-19094. Available at: <https://www.federalregister.gov/documents/2023/09/05/2023-19094/notice-of-public-listening-sessions-on-federal-agency-implementation-of-the-national-science-and>

¹⁵ See: <https://science.gov/Scientific-Integrity.html>

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currently under development or will be developed once their scientific integrity policies are finalized and have gone into effect.

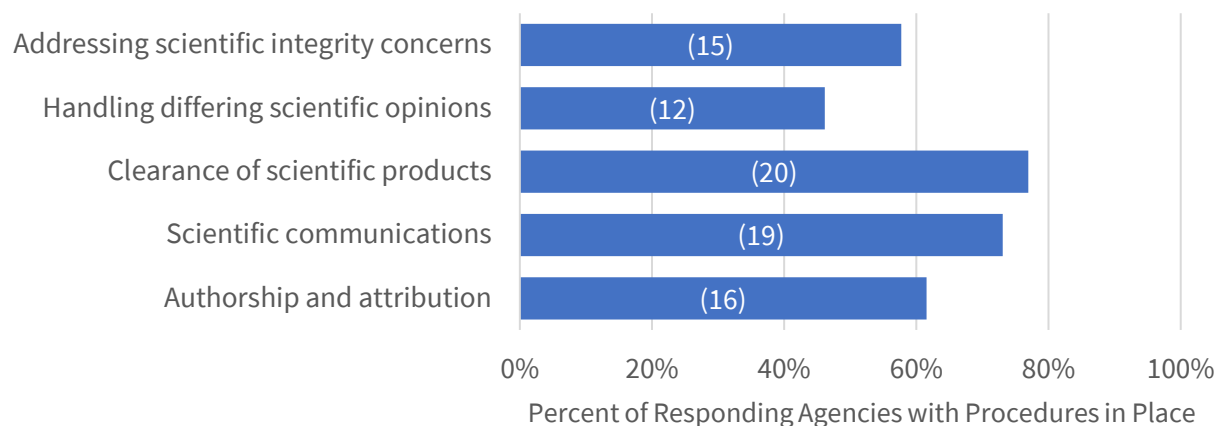


Figure 2. The share of the 26 federal agencies that responded to OSTP’s data call with finalized procedures associated with scientific integrity policies that are currently in effect or under development. The five categories for procedures shown in the graph above correspond to procedures required by the Framework. Parentheticals within each bar represent the number of responding agencies with each procedure in place.

Agency procedures to address scientific integrity concerns include those for reporting, investigating, and appealing allegations of scientific integrity violations. OSTP therefore asked agencies to share their processes for reporting such violations. Approximately 35 percent of responding agencies noted that their reporting procedures are still under development. All agencies with reporting procedures in place indicated that allegations of lapses in scientific integrity can be directly reported to the agency’s SIO or Scientific Integrity Council by email or a phone call. Other agencies have referral processes in place, whereby reports can be made to, for example, managers or ombuds, who then report to the SIO. In addition, some agencies are developing online reporting systems in an effort to streamline processes. In their responses to OSTP, some agencies specified that they allow complaints to be made anonymously and others noted that they offer consultative services to those who have concerns about scientific integrity, but are not yet at the point of filing a formal complaint.

Agencies are also required by the 2021 Presidential Memorandum to publish an annual report on the agency’s website that includes the number of administrative investigations and appeals involving alleged deviations from the scientific integrity policy.¹ This requirement is reinforced by the model policy and critical policy features outlined in the Framework.⁶ Of the 26 responding agencies, 14 have existing websites where such reports will be published, while eight noted that they will develop a page in the future for publishing such reports. Four agencies responded that they have yet to determine a process for developing and publishing these reports, indicating an area of opportunity for the Subcommittee to provide more support to agencies developing their reporting procedures for the first time.

4. Mechanisms for Socializing and Promoting a Culture of Scientific Integrity across Federal Agencies

Workforce education and maintaining the visibility of scientific integrity policies, practices, and culture are a key component of both the 2021 Presidential Memorandum and the Framework.^{1,6} Specific provisions around increasing the visibility of agency scientific integrity policies and requiring scientific integrity training are included in both the model scientific integrity policy and the critical policy features for assessment. As a result, OSTP asked agencies to share their progress towards implementing these features to promote a culture of scientific integrity across the federal government.

All agencies have mechanisms for communicating scientific integrity policies and practices. The process by which information about scientific integrity is communicated varies by agency, as shown in Figure 3. The most common form of communication across agencies is leveraging the agency’s intranet to share information about scientific integrity with staff and contractors, followed by information conveyed through trainings, then webinars, newsletters, and leadership emails to all staff. Agencies that responded they utilized other forms of communication shared strategies that included:

- Presentations and briefings to leadership related to scientific integrity processes, reporting procedures and outcomes, and other key policy and implementation developments;
- Developing training opportunities by request for key stakeholders tailored to their needs;
- Incorporating scientific integrity policies and resources into staff onboarding processes;
- Presenting on scientific integrity developments and achievements at annual meetings and conferences to external stakeholder communities; and
- Incorporating scientific integrity concepts into trainings for agency researchers to place these concepts in the context of researcher activities.

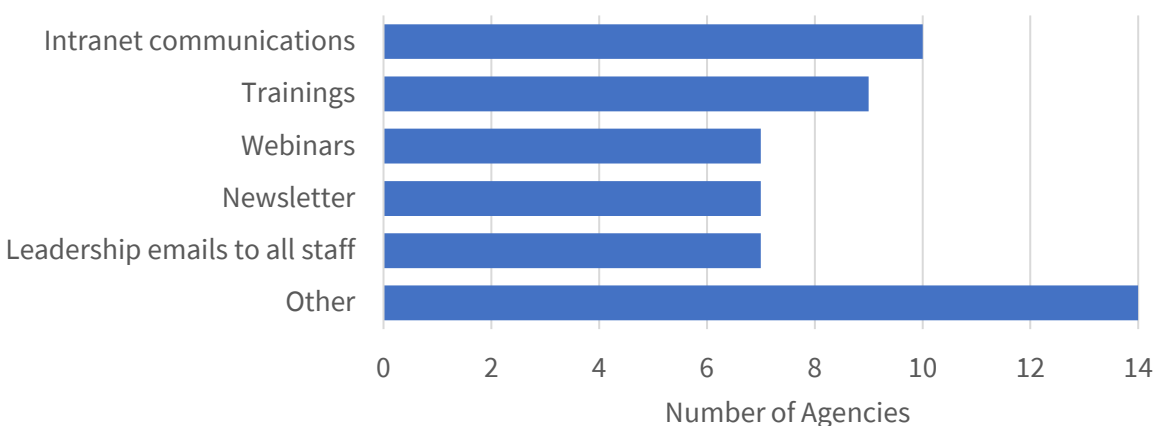


Figure 3. Methods of scientific integrity communications currently utilized by federal departments and agencies.

Scientific integrity policies developed in accordance with the Framework articulate scientific integrity training requirements and the cadence at which trainings will be taken. While only nine agencies reported that they currently have trainings in place for agency staff, most responding agencies (61%) are in various stages of training development or deployment (Figure 4). Agencies that reported they have started, but not yet completed development of their training materials tended to be agencies

under larger departments that are coordinating across their departments. Agencies that have training materials predating the release of the Framework noted that they are in the process of or have completed updating trainings to align with the critical policy features of the Framework. These updates should be completed and deployed to staff within the next year.

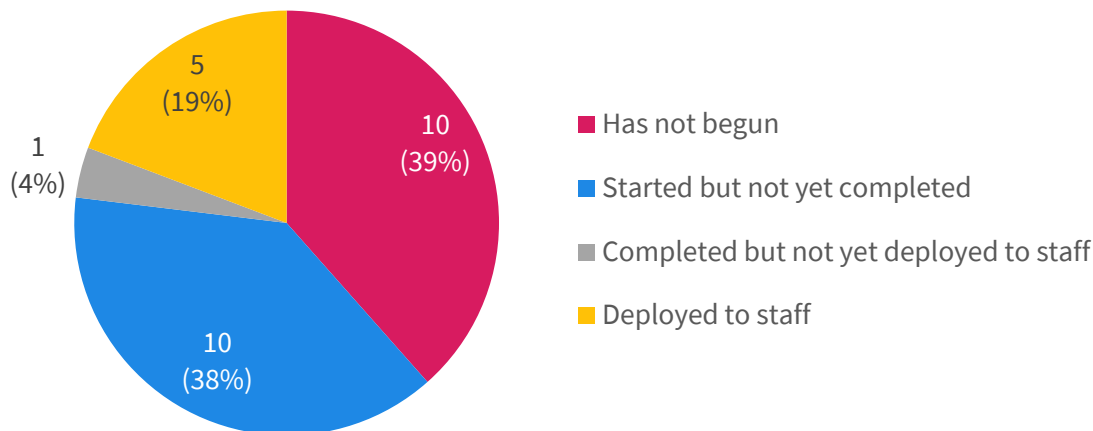


Figure 4. Agencies reported the status of their scientific integrity training development efforts, with the majority of agencies (61%) responding the training development process is underway.

To support the remaining 39% of agencies, as well as agency efforts to continue improving and refining their existing training opportunities, the Subcommittee established an IWG on Training. The IWG has been tasked with identifying and organizing training resources and good practices to support federal agencies’ development and delivery of timely, accurate, and accessible scientific integrity training. These trainings may be targeted to different audiences at agencies, such as general training for all staff, advanced training for agency scientists, and tailored training for SIOs, individuals who work with scientific data, policymakers, and communications specialists.

5. Development Status of Evaluation Plans to Assess and Improve Agency Scientific Integrity Policies and Practices

The 2021 Presidential Memorandum commits the U.S. government to iterative improvement of scientific integrity policy and practice. Mechanisms to monitor and evaluate the implementation and outcomes of these policies and practices are essential to realizing that commitment. To assist agencies in developing and implementing an evaluation plan to regularly measure, monitor, evaluate, and learn from scientific integrity activities and outcomes, the Framework outlined a program roadmap.⁶ The roadmap outlines four core activities related to advancing a culture of scientific integrity: (1) establish and implement scientific integrity policies and practices; (2) demonstrate engaged and supportive leadership; (3) promote transparent and free flow of scientific information; and (4) ensure accountability. These activities are mapped to metrics and measurement methods, identifying short- and intermediate-term outcomes that lead to ultimate aspirations for each of the activities.

OSTP asked agencies to share their status for developing an evaluation plan based on the Framework’s roadmap (Figure 5). One-third of agencies responded they have evaluation plans in some stage of development and deployment. These agencies already have a well-established scientific integrity

program. Other agencies responded they are developing or have developed a draft evaluation plan, but have not yet begun implementing it.

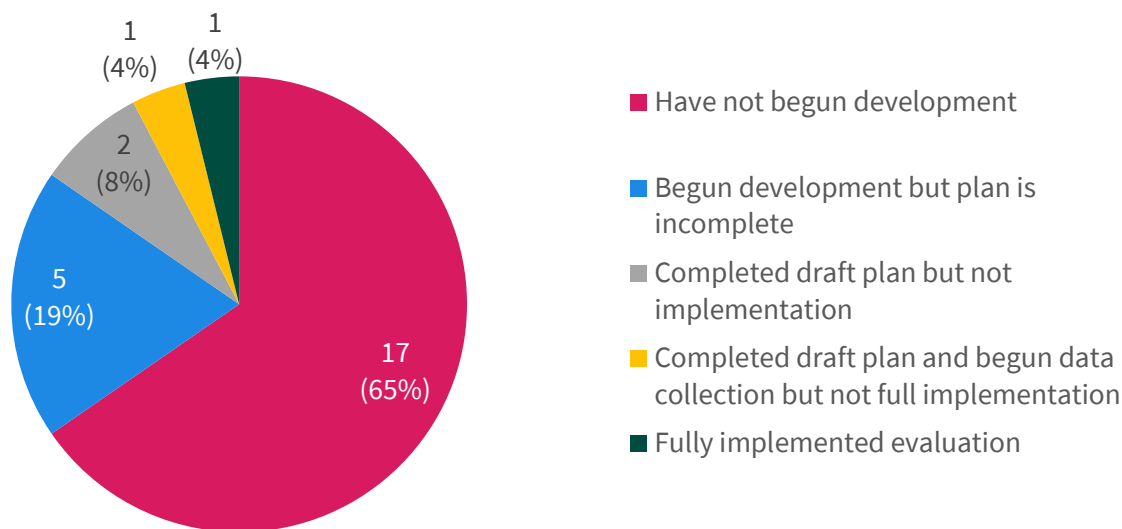


Figure 5. Agencies reported the status of their efforts to develop and implement evaluation plans to assess and improve scientific integrity policies and practices.

The remaining two-thirds of responding agencies noted that they have not yet begun developing their evaluation plans. Some agencies noted that they will begin developing their evaluation plans once they have procedures and training materials associated with their updated or newly developed scientific integrity policies in place. The Subcommittee is currently developing a set of standardized survey questions that map to priority areas of the Framework and can be used by agencies to regularly assess scientific integrity implementation efforts. In addition, the Subcommittee is creating a system to phase in evaluations based on the Framework’s critical metrics for assessment. These efforts will not only assist agencies in developing and implementing evaluation programs for scientific integrity, but also serve to promote greater consistency across the government in how policies and practices are evaluated and improved.

6. Good Practices, Opportunities, and Challenges in Continuing to Advance a Culture of Scientific Integrity

In addition to providing a benchmark against which subsequent progress may be measured, the data call that informed development of this report reinforced several leading practices as agencies continue to refine and implement their scientific integrity policies. These include:

- Public or internal feedback forums for scientific integrity policies.** In the 2023 OSTP Memorandum, OSTP instructed agencies to engage with their stakeholders to gain feedback on their updated or newly developed scientific integrity policies, as described in Section 3. Agencies shared that these venues have also served to raise awareness around agency scientific integrity commitments, as well as the processes and procedures associated with updated or newly developed policies. This awareness has helped agency staff and contractors appreciate their roles and responsibilities in advancing a culture of scientific integrity and understand

reporting procedures, as well as promote transparency and accountability in enforcement of policies across the agency and among external stakeholders.

- **Leadership support.** Some responding agencies shared the importance of leadership support in advancing a culture of scientific integrity, which they report has been central to updating scientific integrity programs to align with the Framework in a timely fashion.
- **Forums for discussing scientific integrity policy implementation and enforcement.** Agencies spoke to the value of communities of practice and shared expertise to discuss scientific integrity. These forums include Scientific Integrity Councils and Committees within agencies, as well as the work of the Subcommittee in providing an interagency venue for exchanging leading practices, training opportunities, existing challenges, processes for adjudicating allegations of scientific integrity violations, and more.

The data call also uncovered challenges in policy implementation, including those originally outlined in Section 2 of the 2022 NSTC Report.⁸ These include a need for adequate resourcing within agencies to implement a robust scientific integrity program, including to support development and deployment of role-specific training opportunities tailored to the needs of different staff members across the agency, as well as an evaluation plan. Some agencies also shared that administering surveys needed to effectively measure agency progress in advancing core scientific integrity activities identified in the Framework remains a challenge. Not all agencies have access to platforms to systematically administer such surveys. One agency recommended adopting a unified, agency-wide approach to administering at least a subset of survey questions that broadly apply to all agencies, regardless of their mission, such as through the annual Federal Employee Viewpoint Survey (FEVS). Finally, some agencies have shared the need to more firmly distinguish the roles and lines of communication between SIOs, Chief Science Officers, and political appointees to the needed independence; where these roles are positioned within a given agency can help delineate these lines, as recommended in Section 7 of the 2022 NSTC Report.⁸

Collectively, the practices and challenges shared by agencies through the data call have created opportunities for further discussion and refinement of policies and practices that may be facilitated through OSTP in coordination with the Subcommittee in the coming year. Agencies also shared their own near-term priorities, which include finalizing policies and associated procedures, identifying and appointing a full-time SIO, increasing staffing and capacity within their agency's scientific integrity programs, rolling out scientific integrity training opportunities across their agency, and developing and implementing an evaluation plan and associated survey tools to monitor and assess the progress of policy implementation.

7. Conclusion

This report represents progress made since the release of the 2021 Presidential Memorandum to strengthen and advance a culture of scientific integrity across the federal government. The achievements discussed throughout this report reflect a whole-of-government commitment to safeguarding science against inappropriate interference, including preventing political interference in the conduct, management, communication, and use of science. OSTP and its partners across the federal agencies remain dedicated, committed, and engaged in further advancing these steps to

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support a trustworthy federal science system that can continue serve the American people through evidence-based decision making using the best available science.

Appendix A. Federal Agencies with Scientific Integrity Policies

Below is a listing of links to scientific integrity policies for federal departments, independent agencies, distinct agencies within departments, and offices (collectively referred to as ‘agencies’) with policy status as of September 2024. OSTP and the NSTC Subcommittee on Scientific Integrity have worked with CENDI to establish a web page that compiles and keeps up-to-date links to scientific integrity policies, which can be accessed at: <https://science.gov/Scientific-Integrity.html>.

Agency or Department	Policy Status	Link
Consumer Product Safety Commission	New policy in effect.	https://www.cpsc.gov/s3fs-public/Directive-0630-Scientific-Integrity-Directive.pdf?VersionId=v.TxDF9DafvH06eH072dP1N7IGWvc9J
Department of Commerce (DOC)	Previous policy still in effect. Updated policy pending clearance.	https://2010-2014.commerce.gov/sites/default/files/documents/2012/april/scientific_integrity_memorandum_dtd_2011-12-16.pdf
National Institute of Standards and Technology (NIST/DOC)	New policy in effect.	https://www.nist.gov/system/files/documents/2024/04/05/final-o-5101-ver-3%202024.pdf
National Oceanic and Atmospheric Administration (NOAA/DOC)	New policy in effect.	https://www.noaa.gov/organization/administration/nao-202-735d-2-scientific-integrity
Department of Defense	Previous policy still in effect. Updated policy pending clearance.	https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/320012p.pdf
Department of Education	Previous policy still in effect. Updated policy pending clearance.	https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/320012p.pdf
Department of Energy	New policy in effect.	https://www.directives.doe.gov/directives-documents/400-series/0411.2-apolicy-b
Department of Health and Human Services (HHS)	New policy posted and will go into effect October 16, 2024.	https://www.hhs.gov/programs/research/scientificintegrity/index.html ; https://www.hhs.gov/sites/default/files/hhs-scientific-integrity-policy.pdf
Centers for Disease Control and Prevention (CDC/HHS)	Previous policy still in effect. Updated policy pending clearance.	https://www.cdc.gov/os/integrity/docs/CDCSIGuide_042516.pdf
Food and Drug Administration (FDA/HHS)	New policy in effect.	https://www.fda.gov/media/82932/download
National Institutes of Health (NIH/HHS)	New policy posted and will go into effect December 30, 2024.	https://osp.od.nih.gov/wp-content/uploads/2024/09/Final-NIH-Scientific-Integrity-Policy.pdf

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Agency or Department	Policy Status	Link
Department of Homeland Security	New policy in effect.	https://www.dhs.gov/sites/default/files/2024-09/24_0926_mgmt_scientific-integrity-revision-01.pdf
Department of the Interior	New policy in effect.	https://www.doi.gov/document-library/departmental-manual/305-dm-3-integrity-scientific-and-scholarly-activities-0
Department of Justice	New policy in effect.	https://www.justice.gov/open/doj-scientific-integrity-policy
Department of Labor	New policy in effect.	https://www.dol.gov/sites/dolgov/files/OASP/evaluation/pdf/DOL-Scientific-Integrity-Policy-Final-1-24.pdf
Department of State	Previous policy still in effect. Updated policy pending clearance.	https://fam.state.gov/FAM/11FAM/11FAM0820.html
Department of Transportation	New policy in effect.	https://www.transportation.gov/sites/dot.gov/files/2024-02/DOT%20Scientific%20Integrity%20Policy%20Final%20508.pdf
Department of Veterans Affairs	New policy in effect.	https://www.va.gov/vapubs/viewPublication.asp?Pub_ID=1472&FTYPE=2
Environmental Protection Agency	Previous policy still in effect. Updated policy pending clearance. Draft policy available at: https://www.federalregister.gov/documents/2024/01/24/2024-01313/scientific-integrity-policy-draft-for-public-comment	https://www.epa.gov/scientific-integrity/policies-and-practices#SI%20Policy%20(2012)
General Services Administration	New policy pending clearance.	
Marine Mammal Commission	New policy in effect.	https://www.mmc.gov/wp-content/uploads/MMC-sci_integrity_policy-final-19Dec23.pdf
National Aeronautics and Space Administration	New policy in effect.	https://nodis3.gsfc.nasa.gov/OPD_Docs/NAll_1920_1_.pdf
National Science Foundation	New policy in effect.	https://www.nsf.gov/pubs/2024/nsf24007/nsf24007.pdf
Railroad Retirement Board	New policy pending clearance.	
Social Security Administration	New policy in effect.	https://www.ssa.gov/evidence/documents/SSA-2023-0048-0002_Scientific%20Integrity%20Policy%20Final%20050624.pdf

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Agency or Department	Policy Status	Link
United States Agency for International Development	Previous policy still in effect. Updated policy pending clearance.	https://www.usaid.gov/sites/default/files/2022-05/integrity.pdf
United States Department of Agriculture	New policy in effect.	https://www.usda.gov/directives/dr-1074-001
White House Office of Science and Technology Policy	New policy in effect.	https://www.whitehouse.gov/wp-content/uploads/2023/06/OSTP-SCIENTIFIC-INTEGRITY-POLICY.pdf