



U.S. National  
Science Foundation

# Scientific Integrity Policy

NSF 24-007

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**U.S. National Science Foundation (NSF)****Scientific Integrity Policy****NSF 24-007**

January 12, 2024

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## **Abbreviations and Acronyms**

COI – Conflict(s) of Interest

COV – Committee of Visitors

DEIA – Diversity, Equity, Inclusivity and Accessibility

EAC – Evaluation and Assessment Capability

FAC – Federal Advisory Committee

FTAC – Fast Track Action Committee

HRM – Division of Human Resource Management

IPA – Intergovernmental Personnel Act

IR/D – Independent Research/Development

NCSES – National Center for Science and Engineering Statistics

NSB – National Science Board

NSF – National Science Foundation

NSTC – National Science and Technology Council

OECR – Office of Equity and Civil Rights

OGC – Office of General Counsel

OIA – Office of Integrated Activities

OIG – Office of Inspector General

OLPA – Office of Legislative and Public Affairs

OSTP – Office of Science and Technology Policy

PAM – Proposal and Award Manual

PAPPG – Proposal and Award Policies and Procedures Guide

RGE – Regular Government Employee

SGE – Special Government Employee

SI – Scientific Integrity

SIO – Scientific Integrity Official

SOSI – Subcommittee for Scientific Integrity

STEM – Science, Technology, Engineering and Mathematics

VSEE – Visiting Scientist, Engineer and Educator

## A. Purpose

The purpose of this policy is to reaffirm the National Science Foundation's (NSF) commitment, and to enhance and promote a continuing positive culture of Scientific Integrity. This policy aims to ensure the integrity of all aspects of scientific activities, including proposing, reviewing, conducting, managing, and communicating about science and scientific activities, and using the results of science. This policy establishes the expectations and procedures required to maintain and enhance Scientific Integrity at NSF. This policy applies to all core NSF activities, including but not limited to merit review and award decision-making processes, post-award oversight, basic and applied research performed as part of approved Independent Research and Development (IR/D) plans and studies performed to support the U.S. and the NSF core activities.

## B. Background

The “National Science Foundation Act of 1950” (Public Law 81-507) set forth NSF's mission and purpose: *To promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense....*” Consistent with this mission, the highest standard of Scientific Integrity, as defined by NSF and by the U.S. Federal Government, has been the hallmark of the Foundation’s culture and key to successful leadership and support for the advancement of science, engineering, and STEM education in the U.S.

Scientific and technological information, data, and evidence are central to the development and iterative improvement of sound policies, and to the delivery of equitable services and programs, across every area of the government. The 2022 NSTC Report of the SI-FTAC (2021 Task Force), *Protecting the Integrity of Government Science*,<sup>1</sup> found that strong Scientific Integrity policies and practices bolster the ability of Federal agencies to protect government science.

The Task Force Report summarizes recent foundational Executive branch actions on Scientific Integrity, including the 2009 Presidential Memorandum,<sup>2</sup> the 2010 Office of Science and Technology Policy (OSTP) Memorandum,<sup>3</sup> and the 2021 Presidential Memorandum.<sup>4</sup> The requirements of this current policy are derived from these foundational actions, the collective experience of Federal agencies, and the informed engagement of stakeholders both inside and outside of government.

## C. Definition of Scientific Integrity and Scientific Integrity Official

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<sup>1</sup> A Report by the Scientific Integrity Fast-Track Action Committee of the National Science and Technology Council. “[Protecting the Integrity of Government Science](#).” January 11, 2022.

<sup>2</sup> [Presidential Memorandum for the Heads of Executive Departments and Agencies on Scientific Integrity](#). March 9, 2009. The White House.

<sup>3</sup> [Memorandum for the Heads of Executive Departments and Agencies on Scientific Integrity](#). December 17, 2010. Office of Science and Technology Policy.

<sup>4</sup> [Presidential Memorandum on Restoring Trust in Government Through Scientific Integrity and Evidence-Based Policy Making](#). January 27, 2021.

The NSF shall adopt the following Official Definition<sup>5</sup> of Scientific Integrity (SI):

*Scientific Integrity is 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.*

Although the responsibility for upholding Scientific Integrity lies with all NSF employees and covered individuals (as defined in this Policy), NSF has “designated a senior career employee as the agency’s lead Scientific Integrity Official (SIO) to oversee implementation and iterative improvement of Scientific Integrity policies and processes.”<sup>6</sup>

The SIO is empowered to advocate for upholding principles of SI and to be the steward of the existing positive culture of SI at NSF, including education, training, and consultations to continue to elevate SI throughout the Agency. The SIO is also empowered with the independence necessary to gather and protect information to support the review and assessment of Scientific Integrity concerns, as well as to address the implementation of corrective actions and to coordinate with appropriate agency authorities to enforce corrective and administrative actions. The SIO will also manage and coordinate actions to prevent any potential failure to adhere to Scientific Integrity Policy. The Scientific Integrity Official, in conjunction with the Chief Science Officer, shall also advocate for appropriate engagement of scientific leadership in decision-making.<sup>7</sup>

#### **D. Effective Date and Policy Amendments**

This policy is effective when adopted. This policy shall be reviewed and updated by NSF every two years, or earlier as appropriate. Amendments to this policy shall be overseen by the SIO and communicated to the Director of OSTP no later than 30 days after adoption.

Policy effective January 12, 2024

#### **E. Applicability & Scope**

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<sup>5</sup> <https://www.whitehouse.gov/wp-content/uploads/2023/01/01-2023-Framework-for-Federal-Scientific-Integrity-Policy-and-Practice.pdf>

<sup>6</sup> [Presidential Memorandum on Restoring Trust in Government Through Scientific Integrity and Evidence-Based Policy Making](#). January 27, 2021.

<sup>7</sup> A Report by the Scientific Integrity Fast-Track Action Committee of the National Science and Technology Council. [“Protecting the Integrity of Government Science.”](#) January 11, 2022.

Scientific Integrity is the responsibility of the entire NSF workforce. Covered individuals who must adhere to the requirements of this policy include all NSF staff (including federal employees, IPAs, VSEEs, temporary federal employees, contractors, Senate-confirmed Presidential appointees, fellows, trainees, interns, ad-hoc reviewers, detailees, volunteers, and special government employees, such as advisory committee members, merit review panelists, members of Committees of Visitors, and site visitors) when they propose, review, or conduct science or communicate about science and scientific activities, and all levels of employees who manage or supervise scientific activities and use scientific information in decision-making.

All collaborators and partners who engage or assist in scientific activities are expected to uphold the principles of Scientific Integrity established by this policy. Express requirements will be set forth in individual agreements, contracts, statements of work, memoranda of understanding, etc.; they may also be established via issuance of a separate rule or other policy.

## F. Authorities

Pursuant to the 2021 [Presidential Memorandum on Restoring Trust in Government Through Scientific Integrity and Evidence-Based Policymaking](#), and consistent with the 2009 [Presidential Memorandum on Scientific Integrity](#) and the 2010 [Memorandum from the White House Office of Science and Technology Policy on Scientific Integrity](#), all Federal agencies must establish a Scientific Integrity policy. This policy is established in accordance with:

1. The “America COMPETES ACT of 2022.”
2. 42 USC § 1861 *et seq.*, “National Science Foundation Act of 1950,” as amended.
3. 5 CFR § 2635, Standards of Ethical Conduct for Employees of the Executive Branch, as amended.
4. 5 CFR § 735, Employee Responsibilities and Conduct.
5. 45 CFR § 680, NSF Rules of Practice.
6. 45 CFR § 689, National Science Foundation Policy on Research Misconduct.
7. The “Whistleblower Protection Act” (WPA) of 1989, as amended, Pub. L. No. 101-12.
8. PPD 19, Protecting Whistleblowers with Access to Classified Information, Oct. 10, 2012.
9. 41 USC § 4712, The National Defense Authorization.
10. The “Federal Advisory Committee Act of 1972,” Pub. L. No. 92-463, §1, Oct. 6, 1972, 86 Stat. 770.
11. 45 CFR § 690, Federal Policy for the Protection of Human Subjects.
12. 45 CFR § 46, The Common Rule, as amended.
13. 7 USC §§ 2131-2156, “Animal Welfare Act,” as amended.
14. OMB Memorandum M-20-12, Phase 4 Implementation of the Foundations for Evidence-Based Policymaking Act of 2018: Program Evaluation Standards and Practices.
15. 48 CFR § 3, Federal Acquisition Regulation.
16. The “Foundations for Evidenced-based Policymaking Act of 2018.”
17. The “Information Quality Act of 2000,” Pub. L. No. 106-554.

## G. Exceptions

None.

## H. Definitions

For the purpose of this policy, the following definitions are adopted:

**Scientific Integrity** is 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.<sup>8</sup>

**Scientific activities** refer to activities that involve the application of well-accepted scientific methods and theories in a systematic manner, and includes, but is not limited to, data collection, inventorying, monitoring, statistical analysis, surveying, observations, experimentation, interpretation, study, research, integration, economic analysis, forecasting, predictive analytics, modeling, simulation, technology development, scientific assessment, and science-based or science-informed decision-making. Scientific activities at NSF (“NSF Scientific Activity”) include but are not limited to Merit Review processes, award decision-making processes, post-award oversight, studies based on established scientific methodologies and conclusions executed by NSF staff or through contracts, such as NCSES and OIA/EAC studies and evaluations, and research as part of NSF-approved Independent Research and Development (IR/D) activities.<sup>9</sup>

**Scientific Integrity Official (SIO)** refers to a senior career employee designated as an agency’s lead to oversee implementation and iterative improvement of Scientific Integrity policies and processes consistent with the provisions of the 2021 Presidential Memorandum.<sup>3</sup>

**Scientific Staff** refers to the Agency’s staff who propose, conduct, or review science or communicate about science and scientific activities, and who manage or supervise scientific activities and use scientific information in decision-making.

Additional relevant definitions are included in Appendix A

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<sup>8</sup> <https://www.whitehouse.gov/wp-content/uploads/2023/01/01-2023-Framework-for-Federal-Scientific-Integrity-Policy-and-Practice.pdf>

<sup>9</sup> NSF has an Independent Research/Development (IR/D) program that permits individuals with approved IR/D plans to maintain involvement with their professional research. <https://new.nsf.gov/careers/rotator-programs> at “May I continue my research while at NSF.”

## I. Promoting a Culture of Scientific Integrity at NSF

NSF's mission is to promote the progress of science, advance the national health, prosperity and welfare, and secure the national defense, chiefly by making grants. To fulfill this mission, NSF leadership at all levels recognizes, supports, and promotes this policy and its underlying principles, as well as model behavior exemplary of a strong culture of Scientific Integrity.

NSF has always promoted and will continue to promote a culture of Scientific Integrity. This means both creating and maintaining an environment that is conducive to innovation and progress and protecting the scientific staff, the public and the process of science. "Science, and public trust in science, thrives in an environment that shields scientific data and analyses and their use in policymaking from political interference or inappropriate influence."<sup>10</sup> Scientific Integrity is essential for the advancement of science, engineering, and STEM education. Scientific activities, findings and products must not be suppressed, delayed, or altered for political or special interest purposes and must not be subjected to inappropriate influence.

A strong culture of Scientific Integrity begins with ensuring a professional environment that is safe, equitable, and inclusive of all scientific staff, engineers, and educators. Multicultural competence is an integral component of the entire scientific process, and when leveraged, can improve representativeness, organizational effectiveness, and eminence of the scientific workforce while fostering innovation in the conduct and use of science, and broaden opportunities and participation in science. The responsible and ethical conduct of scientific activities requires an environment that is equitable, inclusive, safe, and free from harassment and discrimination.<sup>11</sup>

To instill and enhance a culture of Scientific Integrity, NSF will post this policy on its website, develop and deliver the required SI trainings, provide individual consultations, and organize outreach and community input activities, such as agency townhalls, webinars, listening sessions, and written and oral communications. NSF will educate all Agency employees and other covered individuals, as well as contractors who perform scientific activities for NSF, on their rights and responsibilities related to Scientific Integrity.<sup>12</sup> All employees and other covered individuals will receive Scientific Integrity information and training as new employees to make them aware of their responsibilities under this Scientific Integrity policy within six months of their date of hire. NSF will also provide biennial training for those who propose, review, conduct, manage, and use the results of and communicate about science and scientific activities. Training will be tracked to ensure covered individuals have received appropriate training.

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<sup>10</sup> Memorandum for the Heads of Executive Departments and Agencies on Scientific Integrity. December 17, 2010. Office of Science and Technology Policy.

<sup>11</sup> Presidential Memorandum on Restoring Trust in Government Through Scientific Integrity and Evidence-Based Policy Making. January 27, 2021; and <https://www.nsf.gov/od/recr.jsp>

<sup>12</sup> *ibid.*



To promote Scientific Integrity at NSF, this policy outlines seven specific areas:

- I. Protecting Scientific Processes.
- II. Ensuring the Free Flow of Scientific Information.
- III. Supporting Decision-Making Processes.
- IV. Ensuring Accountability.
- V. Protecting Scientific staff.
- VI. Professional Development for Government Scientific staff.
- VII. Federal Advisory Committees.

### *I. Protecting Scientific Processes*

Scientific Integrity fosters “honest scientific investigation, open discussion, refined understanding, and a firm commitment to evidence.”<sup>13</sup> It also enables consideration and documentation of differing scientific opinions and includes peer review. Science, science-based and science-informed decision-making to support STEM research and education, and public trust in science and related activities, thrive in an environment that shields scientific data and analyses, and their use in policymaking, from political interference or inappropriate influence.

It is the policy of this agency to:

1. Prohibit political interference or inappropriate influence on scientific activities and the use of scientific information.
2. Prohibit inappropriate restrictions on resources and capacity that limit and reduce the availability of science and scientific products outside of normal budgetary or priority-setting processes without scientific or policy justification.
3. Require that the leadership and management ensure that employees and other covered individuals engaged in scientific activities conduct their work free from reprisal or concern for reprisal.
4. Require that all employees and other covered individuals (as defined in this this Policy) ensure the accuracy of the scientific record and correct identified inaccuracies that pertain to their contribution to any scientific records.
5. Require that all employees and other covered individuals ensure that the authorship of the documents they develop, accurately reflects the scientific contributions of those involved.

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<sup>13</sup> [Memorandum for the Heads of Executive Departments and Agencies on Scientific Integrity](#). December 17, 2010. Office of Science and Technology Policy.

6. When relevant and appropriate, require that Scientific Integrity will be ensured through independent and unbiased review of scientific activities and scientific research infrastructure, according to established NSF procedures.
7. Require that all NSF employees and other covered individuals comply with agency policies and procedures for planning and conducting scientific activities and show appropriate diligence toward protecting and conserving Federal research resources, such as equipment and other property, and records of data and results that are entrusted to them.
8. Continue to prohibit research misconduct and detrimental research practices to ensure the integrity of scientific activities.
9. Require that all NSF employees during proposal review and routine assessment report any research security-related concerns to the Office of the Chief of Research Security Strategy and Policy.
10. Require that all NSF employees disclose affiliations to their Conflicts of Interest (COI) official or other appropriate agency official(s) for conflict determination and appropriate action.
11. Require that all research and education activities, including those involving human subjects or live vertebrate animals, comply with pertinent laws, regulations, and ethical considerations.

## *II. Ensuring the Free Flow of Scientific Information*

Open and timely communication of NSF science plays a valuable role in building public trust and understanding of NSF work. NSF shall facilitate the free flow of scientific and technological information and support Scientific Integrity in the communication of scientific activities, findings, and products. Scientific and technological information will be disseminated to the extent allowed by, and consistent with, privacy and classification standards, responsible communication of scientific information, and applicable laws and policies.

It is the policy of NSF to:

1. Facilitate the free flow of scientific and technological information in accordance with privacy and classification standards, as well as NSF's policies. Consistent with Open Government requirements, NSF shall expand and promote access to scientific and technological information by making it available freely to the public in an online digital format,<sup>14</sup> consistent with applicable laws and policies.
2. Require that NSF leadership, supervisors, and clearance officials will not suppress, delay, or alter findings and products of scientific activities by NSF employees and other covered individuals for political purposes or influenced by special interests.

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<sup>14</sup> <https://www.whitehouse.gov/wp-content/uploads/2023/01/01-2023-Framework-for-Federal-Scientific-Integrity-Policy-and-Practice.pdf>

3. Support and encourage scientific staff to seek advice and work closely with NSF- trained career communications experts in OLPA to communicate with the media.
4. Provide scientific communication training and communications support to agency scientific staff to enable their ability to communicate clearly their findings to both policy makers within their agencies and the public and stakeholders more broadly.
5. Develop and communicate procedures to resolve disputes that arise from decisions to proceed or not to proceed with proposed interactions with news media, including interviews or other releases of public information or related activities.
6. Ensure that the work and conclusions of NSF scientific staff and the work and conclusions of work funded/supported by the federal government are accurately represented in agency communications. If documents significantly rely on a scientist's research, identify them as an author, or represent their scientific opinion, the scientist(s) shall be given the option to review the scientific content of proposed documents.
7. Ensure that agency scientific staff may communicate their scientific activities objectively without political interference or inappropriate influence, while complying with agency policies and procedures for planning and conducting scientific activities, reporting scientific findings, and reviewing and releasing scientific products. Scientific products (e.g., manuscripts for scientific journals and presentations for workshops, conferences, and symposia) shall adhere to agency technical review procedures.
8. Allow NSF employees and other covered individuals to report their scientific findings and communicate with the media or the public in their official capacities at NSF, subject to any applicable nondisclosure laws, regulations, orders, and policies. NSF scientific staff shall refrain from making or publishing statements that could be construed as being judgments of or recommendations on NSF or any other Federal Government policy unless they have secured appropriate prior approval to do so. Such communications shall remain within the bounds of their scientific or technological findings, unless specifically otherwise authorized.
9. Allow scientific staff to communicate with the media or the public in their personal capacities subject to limitations of government ethics rules. NSF scientific staff may express their personal views and opinions; however, they should not claim to officially represent the agency or its policies or use the agency or other U.S. Government seals or logos. Employees and other covered individuals shall use appropriate written or oral disclaimers for personal activities (i.e., "*The views I am expressing are my personal views. They do not represent the views of the National Science Foundation or the U.S. government.*")
10. Require that agency officials, including public affairs officers, shall not alter nor direct agency scientific staff and technology experts to alter scientific and technological research findings or to alter a presentation of the scientific findings in a manner that would knowingly compromise the

objectivity or accurate representation of those findings, nor affect a change in presentation without concurrence of the principal agency scientist or technology expert.

11. Require that in response to media requests about scientific or technological aspects of the work, NSF's Office of Legislative and Public Affairs (OLPA) will offer knowledgeable spokespersons who can, in an objective and nonpartisan fashion, describe these dimensions (OSTP 2010). This does not include describing the policy implications of their work, which requires separate permission.
12. Require that technical review and clearance processes include provisions for timely clearance and expressly forbid censorship, unreasonable delay, and suppression of objective communication of data and results without scientific or policy justification.
13. Ensure that scientific information is accurately represented in responses to Congressional briefings, inquiries, testimony, and other requests.
14. Require that NSF official accurately represent the work and conclusions of agency scientific staff in agency social media communications and that agency scientific staff are appropriately guided on the use of social, which includes but is not limited to blogs, social networks, online forums, and micro blogs.
  - a. If employees and other covered individuals choose to disclose their NSF affiliation on their personal social media, a disclaimer clarifying that the account or communication represents personal views may be appropriate. (i.e., "*The views I am expressing are my personal views. They do not represent the views of the U.S. National Science Foundation or the U.S. government.*")
  - b. NSF will periodically examine its social media regulations to ensure that they are not overly restrictive.
  - c. OLPA's social media managers are responsible for correcting any errors identified by scientific staff whose work is represented in NSF social media.

### ***III. Supporting Decision-Making Processes***

It is the policy of NSF to:

1. Ensure appropriate decision-making processes, consistent with applicable laws and policies. This includes decision-making in core NSF scientific activities, such as merit review process and award decision-making according to established NSF policies.



2. Ensure the quality, accuracy, and transparency of scientific information used to support policy and decision-making, including:
3. When peer review is relevant and appropriate, ensure that scientific data and research used to support policy decisions undergo review by qualified experts, where feasible and appropriate, and are consistent with law and NSF policy. When independent peer reviews of scientific data and research are conducted by NSF employees, contractors, and special government employees (SGE), conflicts of interest and ethics rules review shall be conducted for all reviewers and such reviews shall adhere to the Office of Management and Budget “Final Information Quality Bulletin for Peer Review” and applicable laws and policies.
  - a. Reflect scientific information appropriately and accurately and ensure that it is free of misinformation.
  - b. Make scientific findings or conclusions considered or relied on in policy decisions publicly available online and in open formats, to the extent practicable.
4. Where legally permissible and appropriate, enable scientific staff to directly participate in policy and management decisions for which they are the agency subject matter expert to ensure that the science is accurately represented and interpreted.
5. Ensure the accuracy of communication of the science on which a policy decision is based.
6. Develop a transparent mechanism for agency employees and other covered individuals to express and document differing scientific opinions, including the resolution. If differing scientific opinions are not resolved during internal deliberations, they can be part of the agency’s peer review process. The differing opinions will be represented in the agency deliberative documents for the decision maker’s consideration.

#### *IV. Ensuring Accountability*

It is the policy of NSF to:

1. Enforce administrative actions when allegations of a failure to adhere to Scientific Integrity Policy are substantiated and to implement appropriate policies and procedures to prevent similar Scientific Integrity issues in the future, whether real or apparent.
2. Encourage and facilitate early informal or formal consultation with the Scientific Integrity Official to seek advice on preventing failure to adhere to NSF’s Scientific Integrity Policy.
3. Require that allegations or potential allegations of failure to adhere to NSF’s Scientific Integrity Policy shall be formally and confidentially reported to the Scientific Integrity Official through email, anonymous reporting webpage, in person, video conferencing, or by telephone. The Scientific Integrity Official is available for confidential consultations related to concerns about failures to adhere to NSF’s Scientific Integrity policy. When appropriate, allegations should also be reported to relevant bodies such as the Division of Human Resource Management (HRM), the Office of Equity and Civil Rights (OECR) and/or the Office of Inspector General (OIG).

4. The Scientific Integrity Official shall publish procedures to respond to allegations of compromised Scientific Integrity in a timely, objective, and thorough manner. These procedures shall include the following steps and the expected timeline for each step in the following order: an initial assessment and review; when appropriate, make referral to another office that handles the type of allegation or initiate the administrative process with HRM; a fact-finding process; an agency adjudication or determination of an appropriate remedy and appeals process; methods for follow-up to track implementation of remedies; and reporting. The procedures will document the necessary elements for each step of the process, including establishing whether the allegation has substance, the requisite burden of proof, any necessary determination of intent, and proper channels and expectations for reporting. The procedures should also detail the roles of the Scientific Integrity Official and other related NSF officials in the process.

### *V. Protections*

To assure the protection of government scientific staff and, as appropriate, other covered individuals from retribution, retaliation, or reprisal, it is the policy of NSF to:

1. Select and retain candidates for scientific and technical positions based on the candidate's scientific and technical knowledge, credentials, experience, and integrity, and hold them and their supervisors to the highest standards of professional and scientific ethics.
2. Continue to promote diversity, equity, inclusion, and accessibility in the scientific workforce and to create safe workspaces that are free from harassment and discrimination.
3. Reports or allegations regarding failures to adhere to Scientific Integrity principles<sup>15</sup> such as discrimination, harassment, and research misconduct, may be referred to the appropriate offices such as the Office of Equity and Civil Rights and Office of the Inspector General, as appropriate.
4. Prevent supervisors, managers, and other agency leaders from intimidating or coercing scientific staff to alter scientific or scientific activity-related data, findings, or professional opinions, or inappropriately influencing scientific advisory boards.
5. Reports of allegations regarding whistleblower reprisal by NSF staff and panelists may be made to the Office of Inspector General. Reports of allegations regarding whistleblower reprisal by NSF awardees and contractors also may be made to the Office of Inspector General. Information about whistleblower protection is available at <https://www.whistleblowers.gov>. NSF will comply with whistleblower protections; specifically:
  - a. By protecting employees from prohibited personnel practices (as defined in 5 U.S.C. 2302(b)), especially those who uncover and report allegations of loss of Scientific Integrity

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<sup>15</sup> See the [White House Office of Science and Technology Policy Scientific Integrity Task Force Report](#).

in good faith, as well as those NSF employees alleged to have compromised Scientific Integrity in the absence of a finding that the individual compromised Scientific Integrity.

- b. The requirements of the "Whistleblower Protection Act of 1989" and its expanded protections enacted by PL 103-424 and the "Whistleblower Protection Enhancement Act of 2012."
- c. The expansion in the "National Defense Authorization Act" of certain whistleblower protections for employees of federal government contractors, subcontractors, and grant recipients (41 U.S.C. 4712).
- d. Presidential Policy Directive 19, which prohibits supervisors from taking, failing to take, or threatening to take or fail to take any action affecting an employee's eligibility for access to classified information in reprisal for making a protected disclosure.

## *VI. Professional Development for Government Scientific Staff*

It is the policy of the agency to encourage agency scientific staff and other agency employees involved in agency scientific activities to interact with the broader scientific community in a manner that is consistent with NSF policies, Federal rules of ethics, job responsibilities, and to the extent that is practicable given the availability of funding to support such interactions. This includes:

1. Encouraging timely publication of research, such as in peer-reviewed, professional, scholarly journals; NSF technical reports and publications; or other appropriate outlets.
2. Encouraging the sharing of scientific activities, findings, and materials through appropriate avenues including on digital repositories.
3. Encouraging attendance and presentation of research at professional meetings including workshops, conferences, and symposia.
4. Permitting service on editorial boards, as peer reviewers, or as editors of professional or scholarly journals, consistent with Federal Ethics laws and NSF policies.
5. Permitting participation on professional societies' committees, task forces, and other specialized bodies, including removing barriers to serving as officers or on governing boards of such societies, to the extent allowed by law.
6. Permitting government scientific staff to receive honors and awards for contributions to scientific activities and discoveries to the extent allowed by law and to accrue the professional recognition of such honors or awards.

7. Encouraging scientific staff to perform outreach and engagement activities, such as speaking to community and student groups and relevant international groups as appropriate, as part of their official duties.

## *VII. Federal Advisory Committees (FACs)*

Federal Advisory Committees are an important tool within NSF for ensuring the credibility, quality, and transparency of agency science. NSF shall adhere to the "Federal Advisory Committee Act," Pub. L. 92-463, and develop policies in coordination with the General Services Administration and consistent with the guidance on lobbyists serving on Federal Advisory Committees (FACs), for convening FACs tasked with giving scientific advice, consistent with the following:

1. The recruitment process for new FAC members is intended to be as transparent as practicable. NSF announces FAC member vacancies widely, including notification in the Federal Register with an invitation for the public to recommend individuals for consideration and for self-nominations to be submitted.<sup>16</sup>
2. Information for appointed committee members will be made widely available to the public, subject to "Privacy Act" and other statutory/regulatory and policy considerations.<sup>17</sup>
3. The selection of members to serve on a scientific or technical FAC is based on the following criteria, as laid out in publicly available Member Balance Plans:

*Primary considerations are:*

- Special knowledge of the science subfields involved in the proposals to be reviewed to evaluate competence, intellectual merit, and utility of the proposed activity. Within reasonable limits, reviewers' fields of specialty should be complementary within a reviewer group.
- Broader or more generalized knowledge of the subfields involved in the proposals to be reviewed to evaluate the broader impacts of the proposed activity. Reviewers with broad expertise are required for proposals involving substantial size or complexity, broad disciplinary or multidisciplinary content, or significant national or international implications.

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<sup>16</sup> <https://www.nsf.gov/od/ogc/faca.jsp> and [https://www.nsf.gov/about/performance/dir\\_advisory.jsp](https://www.nsf.gov/about/performance/dir_advisory.jsp)

<sup>17</sup> E.g., NSF Merit Review Digest; NSF Committee of Visitors (CoV) - <https://www.nsf.gov/od/oia/activities/cov/>; "Federal Advisory Committee Act" (FACA) – <https://www.nsf.gov/od/ogc/faca.jsp>



- Broad knowledge of the infrastructure of the specific scientific area under review and its educational activities, to evaluate contributions to societal goals, scientific and engineering personnel, and distribution of resources to organizations and geographical areas.

*To the extent practicable, other factors considered are:*

- Qualified individuals reflecting small, medium, and large organizations, as well as public and private organizations.
  - Qualified individuals reflecting underrepresented groups, such as ethnic minorities, women, and individuals with disabilities.
  - Qualified individuals reflecting range of ages.
  - Qualified individuals reflecting different geographical area.
4. The selection process is to be overseen by NSF officials with appropriate expertise.
  5. NSF intends to engage members of scientific and technical FACs as Special Government Employees (SGEs), Regular Government Employees (RGEs) and/or Representatives, as appropriate, to further transparency goals and accomplish the work of the FAC.

All reports, recommendations, and products produced by FACs are to be treated as solely the findings of such committees rather than of the U.S. Government. They will not be subject to intra- or interagency revision except where appropriate to comply with applicable laws and policy.

#### **J. Scientific Integrity Working Group**

NSF established a Scientific Integrity Working Group comprising senior agency career employees and chaired by the Scientific Integrity Official to provide oversight for the implementation of the Scientific Integrity Policy at NSF; act as liaisons for their respective agency units; assist with training and policy assessment, updates and amendments; and to be available to address any questions or concerns regarding this policy. The Scientific Integrity Working Group was formally charged by the Chief Operating Officer (COO) outlining the group's responsibilities, criteria for selection as a member, other duties of members, and the frequency of meetings.

#### **K. Procedures**

The Scientific Integrity Official, in conjunction with other NSF career officials, will:

- Update the NSF SI Policy webpage and make it prominently available. It will be posted in the NSF's main page under "Resources" and it will have an easily identifiable URL: [www.nsf.gov/scientific-integrity](http://www.nsf.gov/scientific-integrity).
- The Webpage will include the most current SI Policy as well as links to all related NSF and other federal policies and guidelines.
- Instructions to submit SI concerns as well as SIO contact information.
- Within one year from the date of release of this Policy, NSF will develop and prominently post on NSF's website the procedure to address Scientific Integrity concerns.
- NSF will prioritize and develop additional procedures as appropriate. Some procedures under consideration include but are not limited to handling differing scientific opinions, updated process for clearance of scientific products that include non-public information or NSF's business data, scientific communications, authorship and attribution.

## **L. Roles and Responsibilities**

Scientific Integrity is everyone's responsibility. The following have specific Scientific Integrity roles and responsibilities:

### **NSF Director**

1. Provides leadership for the agency on Scientific Integrity such as leading through example, upholding Scientific Integrity principles and regularly communicating the importance of Scientific Integrity.
2. Ensures that all agency activities associated with scientific and technological processes are conducted in accordance with the policy.
3. Ensures all supervisors and managers comply with the Scientific Integrity policy and ensures accountability for those who do not.
4. Ensures that violations of Scientific Integrity policies are taken as seriously as violations of government ethics rules and that appropriate administrative actions are taken.
5. Designates the Chief Operating Officer, who is a senior agency employee with agency-appropriate qualifications and well-known scientific credentials for the role of Chief Science Officer and support as advisor on scientific issues.

6. Ensures that the scientific-integrity policy considers, supplements, and supports agency plans for forming evidence-based policies, including the evidence-building plans required by 5 U.S.C. 312(a) and the annual evaluation plans required by 5 U.S.C. 312(b).
7. Provides adequate resources and funding to implement this policy including staffing, monitoring, evaluation, reporting, and training.
8. Supports and respects the Scientific Integrity official's independence, recommendations and designation of and agency compliance with corrective scientific actions when violations of this policy are substantiated.

#### **Chief Science Officer (CSO)**

1. The Director will designate the position carrying out the programmatic duties of the Chief Operating Officer as NSF's Chief Science Officer (CSO)
2. The CSO serves as the principal advisor to the Director on scientific issues and ensures that the agency's scientific activities are scientifically and technologically well-founded and conducted with integrity.
3. In cooperation with the Scientific Integrity Official, oversees the implementation and iterative improvement of policies and processes affecting the integrity of research funded, conducted, or overseen by the agency, as well as policies affecting the federal and non-federal scientific staff who support the scientific activities of the agency, including scientific integrity policies.
4. Supports the Scientific Integrity Official's designation of and agency compliance with corrective actions when violations of this policy are substantiated. Assistance may be sought from the National Science and Technology Council Subcommittee on Scientific Integrity in cases of disagreement.
5. Ensures that NSF establishes necessary clear administrative actions for substantiated violations of Scientific Integrity policies, designating responsibility for each aspect of accountability.

#### **Scientific Integrity Official (SIO)**

1. Is a designated, full-time equivalent, career employee who has agency appropriate scientific credentials appointed at a senior level; for example, as a Senior Advisor, Senior Staff Associate or in the Senior Executive Service (SES).
2. Oversees implementation and iterative improvement of scientific integrity policies and processes providing leadership, acting to champion Scientific Integrity, and serving as the primary agency-level contact for questions regarding Scientific Integrity and ensuring Scientific Integrity activities and outcomes are appropriately monitored and evaluated.

3. Promotes a positive culture of Scientific Integrity in the agency.
4. Leads training and outreach initiatives to facilitate employee awareness and understanding of this policy.
5. Serves as a neutral point of contact for receiving Scientific Integrity questions and concerns and allegations of compromised Scientific Integrity.
6. Conducts or coordinates an initial assessment of allegations and submitted materials, following established procedures, to determine whether the allegations pertain to compromised Scientific Integrity and the appropriate handling of said allegations. Provides independent oversight of agency responses to allegations of compromised Scientific Integrity referred for an inquiry or investigation, including:
  7. Reviews agency-submitted reports of allegations and their disposition.
  8. Maintains a status report of responses to allegations as a means of monitoring the progress toward resolution.
  9. Leads efforts to update this policy and any accompanying guidance, as appropriate.
10. Reports to the Chief Science Officer on matters involving Scientific Integrity.
11. Coordinates with the Office of the General Counsel (OGC), Office of Inspector General (OIG), the Office of Equity and Civil Rights (OECR), the Office of Legislative and Public Affairs, (OLPA), the Office of Human Resources Management (HRM), Office of Integrative Activities (OIA), and the Office of the Chief Information Officer and other offices, as necessary.
12. Reports and coordinates actions as the result of allegation of compromised Scientific Integrity involving NSF Scientific Staff, as appropriate, with HRM.
13. Reports of any alleged discrimination or harassment that is uncovered during the course of responding to an allegation of compromised Scientific Integrity to OECR, which will coordinate with OGC and/or HRM as appropriate.
14. Reports any potentially criminal behavior, such as research misconduct, fraud, waste, abuse, plagiarism, data fabrications, etc., that is uncovered during the course of responding to an allegation of compromised Scientific Integrity, to OIG. The SIO and the OIG should coordinate the follow-up activities as appropriate.
15. Reports any alleged retaliation due to scientific disagreements or whistleblower to HRM that is uncovered while responding to an allegation of compromised Scientific Integrity and coordinate as appropriate related to the referral provided to HRM.



16. Keeps the Chief Science Officer and the NSF Director informed on the status of the implementation of this policy and any compliance concerns, as warranted.
17. Publishes an annual Scientific Integrity report as described below.
18. Leads efforts, in cooperation with other appropriate offices and federal government agencies, to recognize and develop new SI policies and procedures in response to the evolution as NSF and other Federal Government agencies develop and use new technologies, such as artificial intelligence and machine learning, to provide for equity, efficacy, and accountability in the context of their specific use in NSF's business practices and by the scientific community supported by NSF.
19. Leads efforts for the iterative improvement of this policy and Scientific Integrity initiatives overall including development and implementation of an evaluation plan to regularly monitor and evaluate ongoing Scientific Integrity activities and outcomes.
20. To the extent possible, be involved in high-level discussions and strategic planning on the recruitment, retention, development, and advancement of scientific staff—especially scientific staff from underrepresented communities—to help ensure that Scientific Integrity is appropriately and carefully considered.

#### **Scientific Integrity Working Group**

1. Under the coordination of the Scientific Integrity Official, oversees implementation and iterative improvement of Scientific Integrity policies and processes.
2. Coordinates with the agency's Scientific Integrity Official in implementing the agency's scientific-integrity policies and processes.
3. Provides oversight for the implementation of the Scientific Integrity Policy at NSF.
4. Acts as liaisons for their respective agency units.
5. Encourages a positive culture of Scientific Integrity in the agency.
6. Assists with training and policy assessment, updates, and amendments.
7. Is available to address any questions or concerns regarding this policy.
8. Establishes a process to screen and adjudicate alleged failures of adherence to Scientific Integrity Policy.

9. Performs other duties as delegated.

### **Leadership and Management**

1. Complies with and ensures agency and employee compliance with the Scientific Integrity Policy to listen, advise, and report allegations of compromised Scientific Integrity and act as appropriate.
2. Is aware of and upholds the principles contained in this policy. Lead through example by upholding Scientific Integrity principles and communicating the importance of doing so.
3. Reports any knowledge of potential failures of adherence to Scientific Integrity Policy to the SIO.
4. Advises employees to consult with the SIO as appropriate.
5. Refrains from committing prohibited personnel practices (as defined in 5 U.S.C. 2302(b)) against all agency employees and other covered individuals including those who uncover and report allegations of compromised Scientific Integrity in good faith, as well as those agency employees alleged to have compromised Scientific Integrity.
6. Consults as appropriate, depending upon the nature of the allegation, with the SIO, human resources officer, contracting and grant personnel, ethics officer, OIG, OGC, and OECR.

### **Employees and Other Covered Individuals**

1. Should be aware of the principles contained in this policy and how the policy applies to their duties.
2. Comply with this policy.
3. Abide by the Code of Ethics and adhere to accepted professional values and practices of the relevant research/scientific communities to ensure Scientific Integrity.
4. Are encouraged to report to the Scientific Integrity Official any knowledge of a failure to adhere to Scientific Integrity Policy.
5. Complete the required Scientific Integrity trainings.

### **M. Monitoring and Evaluating Scientific Integrity Activities and Outcomes**

NSF will develop and implement an evaluation plan to regularly measure, monitor, and evaluate ongoing Scientific Integrity activities and outcomes. The plan will include a roadmap of activities and expected outcomes; the steps and methods needed to assess the processes and outcomes; the methods and metrics used to evaluate the activities and outcomes; and how the data will be analyzed on a regular basis and used for ongoing improvement of SI processes, procedures, and policies. The plan shall include at a minimum, the metrics for agencies to collect and report as identified in Chapter 2, subpart *Metrics and Measurement Methods for Scientific Integrity Activities and Outcomes*, and Chapter 3, *Critical Metrics for Regular Assessment and Iterative Improvement of Agency Scientific Integrity Policy Implementation of the NSTC Scientific Integrity Framework*.<sup>18</sup>

The plan shall also include a timeline for implementation and frequency of data collection, analysis, review, recommendations, and implementing recommendations. Monitoring and evaluation results, recommendations, and policy/procedure changes based on results will be reported to agency leadership and will be made available to agency staff and the public in a timely manner.

## **N. Reporting**

### *Annual Reporting*

The Scientific Integrity Official with the Scientific Integrity Working Group is responsible for generating and making prominently available on the agency's public facing website an annual report to NSF leadership on the status of Scientific Integrity within NSF, per the January 27, 2021, Presidential Memorandum. The report shall highlight Scientific Integrity successes, accomplishments, or progress across NSF, such as any new Scientific Integrity hires, training, enhancements to Scientific Integrity policies, etc.; identify areas for improvement; and develop a plan for addressing critical weaknesses in the agency's policy, if any. It shall report on progress toward achieving the critical metrics<sup>19</sup> identified in Chapters 2 and 3, including comparisons to the same metrics from prior years to show trends over time, whenever feasible. It will also include the number of formal administrative investigations, informal requests for assistance, inquiries and appeals involving alleged or actual deviations from the Scientific Integrity policy, and the number of investigations and pending appeals. Annual reporting will also include anonymized individual closed Scientific Integrity case summaries. These summaries may be posted in a timely manner after completion of inquiries and/or incorporated into the annual report. The identities of complainants, respondents, witnesses and others involved in the investigations shall be protected.

## **O. Scientific Integrity Policy Intersections with Related and Supporting Policies**

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<sup>18</sup> A Framework for Federal Scientific Integrity Policy and Practice - <https://www.whitehouse.gov/wp-content/uploads/2023/01/01-2023-Framework-for-Federal-Scientific-Integrity-Policy-and-Practice.pdf>

<sup>19</sup> The metrics may be collected every other year.

Scientific Integrity officials should have an awareness of policies and programs that intersect with the development of the culture of Scientific Integrity within the agency. Scientific integrity officials, where possible, shall be involved in the development or revision of the broader set of policies and practices that affect the culture and applicability of Scientific Integrity within NSF.

### *Related Policies and Guidelines that Support the Scientific Integrity Policy*

- [“Federal Advisory Committee Act” \(FACA\)](#)
- [“Federal Advisory Committee Act” \(FACA\) Management Overview](#)
- [“Hatch Act”](#)
- National Center for Science and Engineering Statistics ([NCSES](#)) Information Quality and Transparency
- National Policy on the Transfer of Scientific, Technical, and Engineering Information: National Security Decision Directive-189 ([NSDD-189](#))
- Presidential Memorandum on United States Government – Supported Research and Development National Security: National Security Presidential Memorandum – 33 ([NSPM-33](#))
- [Guidance](#) for Implementing NSPM-33
- “No Fear Act” [Notice](#)
- NSF Committee of Visitors ([CoV](#))
- NSF Conflicts of Interest ([COI](#))
- NSF Conflicts of Interest and Standards of Ethical Conduct ([NSF Manual 15](#))
- NSF Directorate and Office Advisory Committees ([AC](#))
- NSF Evaluation and Assessment Capability ([OIA/EAC](#))
- NSF Merit Review [Digest](#)
- NSF Research Misconduct (OIG [Page](#))
- NSF Research Misconduct Regulation ([45 C.F.R. Part 689](#))
- [NSF Public Access Initiative \(PAI\)](#)
- NSF Social Media: Comment Policy, Disclaimer, Privacy, Copyright Social Media [policies](#))
- “Research Involving [Human Subjects](#)”
- “Research Involving Live Vertebrate Animals” (NSF [PAPPG](#))

### *Related Policies that Intersect with Scientific Integrity*

#### **Diversity, Equity, Inclusion, and Accessibility (DEIA) in Addressing and Strengthening Scientific Integrity and the Disproportional Impact of Scientific Integrity Policy Violations on Underrepresented Groups.**

Policies, practices, and culture intelligence that promote diversity, equity, inclusion, and accessibility in the scientific workforce and Federal workforce at large and that create safe workspaces free from harassment and discrimination are foundational for achieving a culture of Scientific Integrity. In an effort to identify and reduce disparities, develop mechanisms to integrate organizational change principles to ensure DEIA and merit principles work in harmony without compromising one for the other. Similarly, Scientific Integrity entails greater transparency into research processes and policy-making outcomes. The agency will review and address

potential Scientific Integrity policy violations that have a disproportionate impact on underrepresented groups or have weakened the equitable delivery of agency programs.

### **Dual Use Research of Concern.**

[The United States Policy for Oversight of Life Sciences Dual Use Research of Concern](#) stipulates that additional review is required for scientific research that could be directly misapplied, posing a significant threat with broad potential consequences to public health and safety, agricultural crops and other plants, animals, the environment, materiel, or national security.

### **“Foundations for Evidence-Based Policymaking Act” (“[Evidence Act](#)”).**

Scientific Integrity is a foundational component of Federal policies and data infrastructure investments supporting information quality, access, protection, and evidence building and use. The “Evidence Act,” also anchored in Scientific Integrity, calls on agencies to strategically plan and organize evidence building, data management, and data access functions to ensure an integrated and direct connection to data and evidence needs. Title II of the Act — the “OPEN Government Data Act” — requires federal agencies to make public data assets available online, using open standards, machine-readable, open formats, and without restrictions (other than intellectual property rights) that may impede use. The metadata associated with open government data assets is made available through the Federal Data Catalogue at [data.gov](#). Title III – the “Confidential Information Protection and Statistical Efficiency Act” (CIPSEA) of 2018 - requires agencies to enable statistical agencies to uphold their fundamental responsibilities to provide timely, relevant, credible, and objective data and statistics, and to maintain public trust. Agencies should consult OMB’s implementing guidance (including OMB M-19-23, OMB M-20-12, and OMB M-21-27, and Statistical Policy Directive 1) to ensure that Scientific Integrity policies and procedures complement and reinforce related requirements of the “Evidence Act.” Agency Learning Agendas and Annual Evaluation Plans, required by the “Evidence Act,” are posted on agency websites and linked at [Evaluation.gov](#).

### **Human and Animal Subject Protections.**

For the protection of human subjects of research and clinical investigations, requirements for Federal departments or agencies (conducting or supporting), as applicable, are provided in the Federal Policy for Protection of Human Research Subjects (the Common Rule) outlined in 45 C.F.R. §§ 46.101-46.124 and the FDA Policy for the Protection of Human Subjects outlined in 21 C.F.R. §§ 50, 56, 312 and 812.

To protect the welfare of animals used in research or other activities conducted or supported by federal departments or agencies, compliance with the Federal regulations and policies governing animal care and use is required, including regulated species under the United States Department of Agriculture “[Animal Welfare Act](#)” (AWA) and regulations (AWAR), the [Public Health Service Policy on Humane Care and Use of Laboratory Animals](#) (PHS Policy) administered by the National Institutes of Health, Office of Laboratory Animal Welfare and the [Guide for the Care and Use of Laboratory Animals](#).

**“Notification and Federal Employee Antidiscrimination and Retaliation Act” (“No FEAR Act”).** Federal agencies are required to be held accountable for violations of antidiscrimination and whistleblower protection laws. Under the “No FEAR Act,” agencies must pay for settlements, awards or judgments against them in whistleblower and discrimination cases out of their own budgets.

#### **Public Access.**

Policies and practices help to ensure that publications, data, and other outputs of government-funded research are equitably and publicly available to other researchers, innovators, students, and the broader public, including underserved communities, consistent with the [2022 OSTP Memorandum on Ensuring Free, Immediate, and Equitable Access to Federally Funded Research](#).

#### **Research Security.**

Scientific staff are encouraged to interact with the broader scientific community as well as to engage with collaborators with a commitment to a shared research environment of openness, transparency, honesty, equity, fair competition, objectivity, and democratic values. However, some foreign governments are working vigorously in contradiction with these values to acquire, through both licit and illicit means, U.S. research and technology. Research security policies, such as the [National Security Presidential Memorandum 33 \(NSPM-33\)](#) and subsequent *Guidance for Implementing NSPM-33*, must harmonize with Scientific Integrity policies by guarding against both foreign government interference and misappropriation, while ensuring that scientific staff maintain honest, objective, transparent, professional, and ethical behaviors.



## Appendix A: Additional Definitions

**Allegation** refers to a formal accusation of a suspected failure to adhere to the Scientific Integrity Policy.

**Administrative record** refers to the set of documents that the decision-maker considers, directly or indirectly, in making a final decision. The record should include all the factual, technical, and scientific material or data considered in making the decision, whether or not those materials or data support the decision.

**Conduct of science** refers to the formulation of hypotheses, study design, testing, data collection, systematic review, statistical analysis, interpretation, findings, conclusions, or peer review.

**Covered individuals** refers to those persons who must adhere to the requirements of this policy, including all NSF staff (federal employees, IPAs, VSEEs, temporary federal employees), contractors, (Senate-confirmed) Presidential appointees, fellows, trainees, interns, ad-hoc reviewers, detailees, volunteers, and special government employees (such as advisory committee members, merit review panelists, members of Committees of Visitors, and site visitors) when proposing, reviewing, or conducting science or communicating about science and scientific activities. It also refers to all levels of employees who manage or supervise scientific activities and use scientific information in decision-making. All contractors and partners who engage or assist in NSF's scientific activities are expected to uphold the principles of Scientific Integrity established by this policy.

**Decision-making/policymaking** refers to the (1) development of policies or making determinations about policy or management; (2) making determinations about expenditures of Federal agency funds; (3) implementing or managing activities that involve, or rely on, scientific activities.<sup>20</sup>

**Diversity** refers to the unique combination of characteristics, attributes and experiences resulting from social structures of society that everyone brings to the bear. It is multi-dimensional and may be comprised of a combination of internal, external, organizational, and world view characteristics. Internal diversity characteristics are those that an individual is born with. External diversity characteristics are things an individual is not born with related to aspects of a person's life which they have some control over, and which may change over time. In some cases, external characteristics may be difficult to identify. They are the outcomes of one's life choices or their decisions.

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<sup>20</sup> This definition is consistent with that used in the Report "Protecting the Integrity of Government Science," and was adapted from the definition of "Decision-makers" in NOAA's Scientific Integrity policy.

**Equity** refers to consistent and systematic fair, just, and impartial treatment of all individuals, including individuals who belong to underserved communities that have been denied such treatment<sup>21</sup>

**Ethical behavior** refers to activities that reflect norms, such as honesty, lawfulness, equity, and professionalism, for conduct that distinguish between acceptable and unacceptable behavior.

**Federal agency** refers to an Executive department, a Government corporation, and an independent establishment.<sup>22,23</sup>

**Federal science** refers to science conducted by Federal scientific staff.<sup>15</sup>

**Federal science agency** refers to a Federal agency that conducts intramural research and/or funds extramural research activities.<sup>24</sup>

**Federal scientist** refers to a scientist who is a Federal employee or Federal contractor.

**Inclusivity** refers to the recognition, appreciation, and use of the talents and skills of employees of all backgrounds (cite EO 13985 and EO 14035).

**Inappropriate influence** refers to the attempt to shape or interfere in scientific activities or the communication about, or use of scientific activities or findings against well-accepted scientific methods and theories without scientific justification.<sup>25,26</sup>

**Inappropriate interference** refers to scientifically unjustified intervention in the conduct, management, communication, or use of science without proper policy justification. It includes censorship, suppression, or distortion of scientific or technological findings, data, information, or conclusions; inhibiting scientific independence during clearance and review; scientifically unjustified intervention in research and data collection; and

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<sup>21</sup> [EO 13985; EO 14035](#)

<sup>22</sup> 5 USC § 105

<sup>23</sup> <https://www.whitehouse.gov/wp-content/uploads/2023/01/01-2023-Framework-for-Federal-Scientific-Integrity-Policy-and-Practice.pdf>

<sup>24</sup> <https://www.whitehouse.gov/wp-content/uploads/2023/01/01-2023-Framework-for-Federal-Scientific-Integrity-Policy-and-Practice.pdf>

<sup>25</sup> Examples may include 1) suppressing a decision maker's ability to offer the best judgment based on scientific information; 2) preventing the use of best available science; 3) insisting on preclearance of a scientific product for purposes other than providing advance notification or opportunity to review for technical merit; 4) suppressing, altering, or delaying the release of a scientific product for any reason other than technical merit or providing advance notification; 5) removing or reassigning scientific personnel for the purposes of undermining the science; 6) using scientific products that are not representative of the current state of scientific knowledge and research (for example because of a lack of appropriate peer review, poor methodology, or flawed analyses) to inform decision-making and policy formulation; or 7) misrepresenting the underlying assumptions, uncertainties, or probabilities of scientific products. This is not intended to be an exhaustive list.

<sup>26</sup> Differences of scientific opinion are not inappropriate influence.

improper engagement or participation in peer-review processes or on Federal advisory committees.

**Failure to adhere to scientific integrity** refers to non-compliance with the Scientific Integrity Policy or to not adhering to the principles of honesty, objectivity, and transparency; professional practices; and ethical behavior when conducting, managing, using the results of and communicating about, science and scientific activities.

**Misinformation** refers to incorrect, misleading, or misattributed information.

**Objectivity** refers to the quality of being unbiased, honest, and impartial.

**Policy** refers to laws, regulations, procedures, administrative actions, incentives, or voluntary practices of governments and other institutions.<sup>27</sup>

**Political interference** refers to interference by political officials or motivated by political considerations.

**Professional practices** refers to conducting oneself with qualities that are characterized by skill, competence, ethics, and courtesy.

**Quality assurance** refers to the systematic monitoring and evaluation of scientific activities to ensure that standards of quality, information security, and research integrity are being met.

**Research** refers to both basic and applied research.

**Basic Research** refers to experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts. Basic research may include activities with broad or general applications in mind, such as the study of how plant genomes change, but should exclude research directed towards a specific application or requirement, such as the optimization of the genome of a specific crop species.<sup>28</sup>

**Applied research** refers to original investigation undertaken to acquire new knowledge. Applied research is, however, directed primarily towards a specific practical aim or objective.<sup>29</sup>

**Research misconduct** means fabrication, falsification, or plagiarism in proposing or performing research funded by NSF, in reviewing research proposals submitted to NSF, or in reporting research results funded by NSF (45 CFR. part 689).

(1) Fabrication means making up data or results and recording or reporting them.

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<sup>27</sup> This definition is consistent with that used by the CDC. See <https://www.cdc.gov/policy/paeo/process/definition.html>

<sup>28</sup> OMB Circular No. A-11: <https://www.whitehouse.gov/wp-content/uploads/2018/06/a11.pdf>

<sup>29</sup> OMB Circular No. A-11: <https://www.whitehouse.gov/wp-content/uploads/2018/06/a11.pdf>

- (2) Falsification means manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record.
- (3) Plagiarism means the appropriation of another person's ideas, processes, results or words without giving appropriate credit.
- (4) Research, for the purpose of defining research misconduct, includes proposals submitted to NSF in all fields of science, technology, engineering, mathematics, and education, and results from such proposals.

Research misconduct does not include honest errors or differences of opinion.

**Research security** refers to safeguarding the research enterprise against the misappropriation of research and development to the detriment of national or economic security, related violations of research integrity, and foreign government interference.<sup>30</sup>

**Retaliation** refers to, per 5 U.S.C. § 2302(b)(8), taking or failing to take, or threatening to take, personnel action with respect to any employee or applicant for employment because of any disclosure of information that the employee or applicant reasonably believes evidences violation of any law, rule, or regulation or gross mismanagement, a gross waste of funds, an abuse of authority, or a substantial and specific danger to public health or safety, providing that such disclosure is not specifically prohibited by law and if such information is not specifically required by Executive Order to be kept secret in the interest of national defense or the conduct of foreign affairs (per Pub. L. 112-199 § 110).

**Science** refers to the systematic study of the structure and behavior of the physical and natural world through observation, experimentation, and the testing of theories against the evidence obtained.<sup>31</sup>

**Scientific activities** refers to activities that involve the application of well-accepted scientific methods and theories in a systematic manner, and includes, but is not limited to, data collection, inventorying, monitoring, statistical analysis, surveying, observations, experimentation, interpretation, study, research, integration, economic analysis, forecasting, predictive analytics, modeling, simulation, technology development, scientific assessment, and science-based or science-informed decision-making. Scientific activities at NSF ("NSF Scientific Activity") includes, but is not limited to, Merit Review process, award decision-making process, award post-award oversight, studies based on established scientific methodologies and conclusions executed by NSF staff or through contracts, such as NCSES and OIA/EAC studies and evaluations, and research as part of NSF-approved Independent Research and Development (IR/D) activities.

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<sup>30</sup> <https://www.dni.gov/index.php/safeguarding-science/research-security>

<sup>31</sup> Oxford Dictionary

**Scientific Integrity** is 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.

**Scientific Integrity Official** refers to a senior career employee designated as an agency's lead to oversee implementation and iterative improvement of Scientific Integrity policies and processes consistent with the provisions of the 2021 Presidential Memorandum.<sup>32</sup>

**Scientific Staff** refers to the agency's staff who propose, conduct, or review science or communicate about science and scientific activities, and who manage or supervise scientific activities and use scientific information in decision-making.

**Scientist** refers to an individual whose responsibilities include collection, generation, use, or evaluation of scientific and technical data, analyses, or products. This includes, but is not limited to, Federal employees, contractors, and trainees. It does not refer to individuals with scientific and technical training whose primary job functions are in non-scientific roles (e.g., policymakers, communicators).<sup>33</sup>

**Special Government Employee** refers to an officer or employee who is retained, designated, appointed, or employed by the Government to perform temporary duties, with or without compensation, for not more than 130 days during any period of 365 consecutive days.<sup>34</sup> The following are examples of persons that are often appointed as a special government employee when the person is not a regular federal employee: panelists, advisory committee members, committee of visitor members, and NSB members.

**Transparency** refers to ensuring all relevant data and information used to inform a decision made or action taken is visible, accessible, and consumable by affected or interested parties, to the extent allowable by law.

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<sup>32</sup> [Presidential Memorandum on Restoring Trust in Government Through Scientific Integrity and Evidence-Based Policy Making](#). January 27, 2021.

<sup>33</sup> <https://www.whitehouse.gov/wp-content/uploads/2023/01/01-2023-Framework-for-Federal-Scientific-Integrity-Policy-and-Practice.pdf>

<sup>34</sup> As defined at 18 U.S.C. § 202