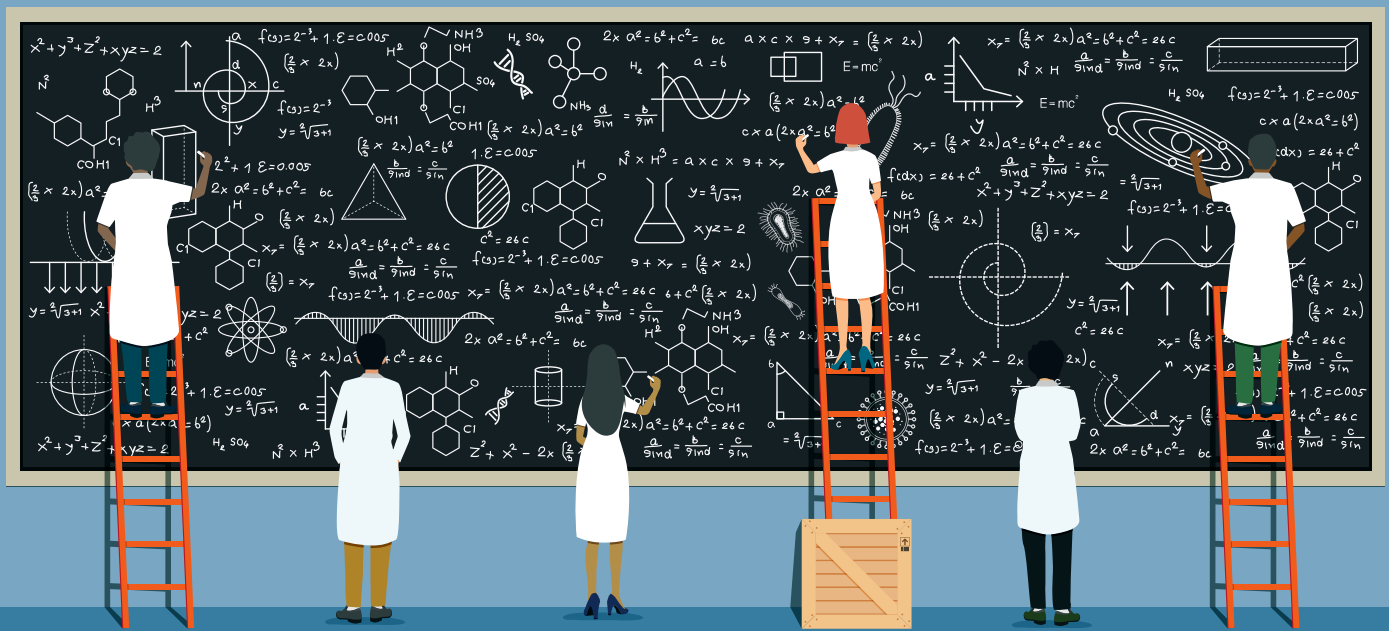
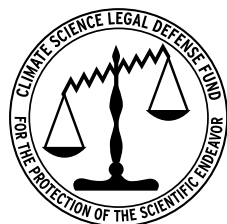




A QUICK GUIDE TO THE SCIENTIFIC INTEGRITY POLICY AT THE

National Science Foundation (NSF)



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the Climate Science
Legal Defense Fund

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A Quick Guide to the NSF Scientific Integrity Policy

Scientific integrity principles are indispensable to the missions and the functions of scientific federal agencies in the United States. Conducting sound and unbiased scientific research is essential to maintaining public trust in these agencies. For scientists employed at these agencies, understanding these principles—both how to abide by them, and what to do if they are violated—is a core job function.

Many scientific agencies adopted scientific integrity policies following a 2009 memorandum issued by President Obama, and a subsequent memorandum issued in 2010 by the White House Office of Science and Technology Policy. These policies clarify how individual agencies interpret scientific integrity. In many cases, a policy also describes how a scientist should report a loss of scientific integrity, how the agency will investigate such claims, and the rights of both a complainant and a person alleged to have committed a violation.

This guide examines the National Science Foundation (NSF) scientific integrity policy. The guide is designed to help scientists working for or funded by NSF understand how the policy applies to them, what rights they have under the policy, and how they can avail themselves of these.

The NSF policy could be significantly strengthened and expanded to provide more detail and guidance for scientists working at the agency. But it is still crucial for agency scientists to know their rights and responsibilities in respect to scientific integrity, as well as the strengths and weaknesses of the policy.

While this guide helps NSF scientists understand the agency's scientific integrity policy, it is not a substitute for legal advice regarding a particular situation. The Climate Science Legal Defense Fund offers **free, confidential consultations to scientists** with questions about scientific integrity.

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SUMMARY

The National Science Foundation (NSF) [scientific integrity policy](#) (referred to as the policy and SIP in this guide) focuses on research misconduct and producing objective scientific data that is free from conflicts of interest. The policy emphasizes ensuring transparency of scientific data, details procedures for investigating research misconduct claims, and describes specific penalties when misconduct is found to have occurred. The policy also discusses the use of Federal Advisory Committees.

However, the policy fails to address the broader concept of scientific integrity. The procedures for investigating research misconduct, while detailed, do not address what happens for any other type of scientific integrity violation. The policy also contains links to other policies rather than describing them in the policy; these links are only in footnotes which makes them easy to overlook or ignore.

At only two pages, the NSF policy is far shorter than the policies for most other agencies and fails to address science communication beyond the concept of making data publicly available. While transparency is key, providing no guidance on how scientists should communicate their work beyond making data available leaves a lot of room for misunderstanding. The policy would be stronger if it provided guidance for scientists on communicating with the press, using social media, and making public opinion statements.

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WHAT DOES THE POLICY GOVERN?

Research Misconduct

According to the policy, NSF awardees should adhere to high standards of ethical conduct; a policy footnote links to the Code of Federal Regulations section that addresses research misconduct at NSF (45 C.F.R. §689.5). This section defines research misconduct as fabrication, falsification, or plagiarism in proposing or performing research funded by NSF, reviewing research proposals submitted to NSF, or in reporting research results funded by NSF. Misconduct does not include honest errors and differences of opinion. The footnotes also link to an NSF web page that details how to report fraud, waste, or abuse.

Conflicts of Interest

The policy addresses the fact that NSF has internal procedures that reflect various government conflict rules and provide clear standards regarding conflict of interest. A footnote to the policy links to NSF Manual 15 “Conflicts of Interest and Standards of Ethical Conduct” but does not describe what type of information the manual contains.

Political Interference

The policy states that scientific and technological findings should not be suppressed or altered by political officials; it does not expand any further on this subject (SIP I).

Threats and Intimidation

The policy does not address threats, intimidation, or other interference with research as violations of scientific integrity.

Use of Science in Agency Decision-Making

The policy does not include requirements about how science should be used in agency decision-making.

Science Communication

The NSF policy references the importance of the free flow of scientific and technological information as well as the importance of open communication. NSF participates in the Open Government Initiative and maintains an [Open Government](#) plan. The plan describes how NSF ensures open science but does not provide any sort of framework to guide scientists. NSF also promotes science communication by maintaining the website [Research.gov](#) which provides information on research spending and results.

Timeliness: The NSF policy does not address timeliness of science communication.

Press: The NSF policy does not address communication between scientists and the press as part of scientific integrity at the agency. A footnote links to NSF's Open Government Plan 4.0; this discusses how NSF uses the press to communicate its work but it does not provide any guidance for agency scientists.

Social media: The policy does not address social media. Scientists should be aware that NSF has a separate [Policy for Social Media Use](#).

Testifying before Congress: While the policy does not specifically state whether scientists have the right to testify before Congress, that right is protected elsewhere in federal law.

Right of scientists to review and/or correct agency communications: The NSF policy does not address whether scientists have the right to review agency communications that rely on their work or attribute them as authors, or to correct inaccuracies in such agency communications.

Publishing and lecturing: NSF considers the professional development of scientists to be a key part of scientific integrity. The policy permits staff (including scientists and engineers) to pursue research and development activities related to NSF's mission and goals, such as attending or giving presentations at conferences or involvement in committees on government time (SIP III).

Scientific Societies: NSF allows staff to participate in research or educational institutions, scientific societies or professional association or editorial boards provided written permission is obtained from a supervisor and ethics counselor (SIP III).

Opinion statements: The policy does not address scientists' right to make public statements of personal opinion.

Hiring Practices

The policy states that candidates for scientific and technical positions are selected on the basis of their knowledge, credentials, experiences, and integrity (SIP I).

Federal Advisory Committees

NSF operates scientific advisory committees pursuant to the Federal Advisory Committee Act of 1972. These committees provide advice and recommendations to NSF concerning science research and education (SIP II). Suggestions for advisory committee membership can be made on the NSF website. NSF also issues Federal Register notices that provide contact information for specific committees for those interested in becoming a member or nominating someone to become a member. NSF provides biographical information for all committee members. Selection of committee members is based on expertise, knowledge, and contribution to the relevant subject area.

The policy also details the disclaimer language to be used on all advisory committee reports, recommendations, and products. This language reads as follows:

The function of Federal advisory committees is advisory only. Any opinions, findings, conclusions, or recommendations expressed in this material are those of the Advisory Committee, and do not necessarily reflect the view of the National Science Foundation.

Whistleblower Protections

The policy states that NSF staff who report potential violations of rules and regulations are protected from retaliation (SIP I); a footnote links to the No Fear Act Notice on the NSF website. This page provides general information on whistleblower protection but does not detail any NSF specific provisions or protections. NSF does not appear to provide any additional protections for whistleblowers beyond those offered by existing federal laws.

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WHO DOES THE POLICY GOVERN?

The policy introduction states that it applies to all civil service employees; visiting scientists, engineers and educators; fellows, students and intermittent experts; those working at NSF under the Intergovernmental Personnel Act; and political appointees.

This policy does not appear to include NSF awardees. However, the policy does state that NSF awardees, whether current or prospective, are expected to adhere to high standards of ethical conduct (SIP I). Federal regulations prohibiting research misconduct at NSF, 45 C.F.R. § 689, discussed more below, also explicitly apply to NSF grantee organizations and individual awardees.

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WHAT IS THE PROCESS FOR FILING A COMPLAINT?

This guide is not a substitute for legal advice about any specific situation. If you are considering filing a scientific integrity complaint, or are the subject of a complaint, please contact the Climate Science Legal Defense Fund or another attorney for advice about your particular circumstances. Nonetheless, we will provide below general information about what the process may entail.

The NSF policy does not provide any details on the process of filing a complaint regarding a loss of scientific integrity, a significant omission. The closest it comes is referencing the rules regarding research misconduct, which are detailed in 45 C.F.R. § 689. However, these rules are specific to research misconduct and do not address scientific integrity violations more broadly. The scientific integrity policy does not summarize or discuss these rules. It merely states that allegations of research misconduct should be reported in accordance with NSF policy and provides a footnote linking this statutory section. It is therefore not clear to what extent the rules regarding research misconduct would be applied to a scientific integrity complaint.

The rules in the C.F.R. aren't easy to understand, inviting considerable confusion for scientists about how to file a scientific integrity complaint. Below we discuss the processes for filing and addressing claims of research misconduct at NSF, as detailed in 45 C.F.R. § 689, since these provide insight into how claims of scientific integrity violations are handled.

Who can make a claim under the policy?

The provisions for handling a claim of research misconduct do not specify who may make a claim.

Where and how can a scientist make a claim?

The policy states that allegations of research misconduct should be reported to the Office of the Inspector General (OIG). Additionally, the policy provides an email address for comments or questions regarding scientific integrity: scientificintegrity@nsf.gov.

What should a complaint contain?

The provisions do not specify what a complaint should contain.

Is there a deadline for filing a complaint?

The provisions do not specify how long the person making the complaint (known as the complainant) has after learning of the alleged research misconduct to file a complaint.

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WHAT HAPPENS AFTER A COMPLAINT IS FILED?

Who investigates?

Due to the nature of research conducted by NSF, recipients of NSF grants bear primary responsibility for preventing and detecting research misconduct and for the inquiry, investigation, and adjudication of any alleged misconduct. When NSF becomes aware of misconduct at an awardee institution, NSF should inform that institution of the allegation. If the OIG determines that alleged research misconduct involves potential civil or criminal violations, the OIG may refer the matter to the Department of Justice.

In most cases, NSF will rely on awardee institutions to initiate an inquiry and, if necessary, an investigation. NSF may also defer to investigations of the matter by another federal agency or NSF may choose to proceed with its own inquiry.

When an awardee institution conducts its own inquiry, it should inform NSF if that inquiry determines that an investigation is warranted, keep NSF updated on the status of the investigation, and provide NSF with the final investigation report (45 C.F.R. § 689.4).

While NSF encourages institutions to conduct their own inquiries/investigations, they must promptly notify the OIG should they become aware during an inquiry or investigation that:

1. Public health or safety is at risk.
2. NSF's resources, reputation, or other interests need protecting.
3. There is reasonable indication of possible violations of civil or criminal law.
4. Research activities should be suspended.
5. Federal action may be needed to protect the interests of a subject of the investigation or of others potentially affected.
6. The scientific community or the public should be informed.

An inquiry consists of preliminary information-gathering and preliminary fact-finding to determine whether an allegation or apparent instance of research misconduct has substance and if an investigation is warranted. An investigation must be undertaken if the inquiry determines the allegation or apparent instance of research misconduct has substance. An investigation is the formal development, examination, and evaluation of a factual record to determine whether research misconduct has taken place, to assess its extent and consequences, and to evaluate appropriate action (45 C.F.R. § 689.2(b)).

In some instances, after an inquiry or during an external or NSF investigation, the Deputy Director may order that interim actions be taken to protect federal resources or guard against continuation of any suspected or alleged research misconduct (examples of interim actions include suspending an existing reward, proscribing or restricting particular research activities, and restricting or suspending participation as an NSF reviewer, advisor, or consultant (45 C.F.R. §689.3(c))).

When NSF handles the claim of research misconduct, the OIG oversees the process and conducts inquiries and investigations (45 C.F.R. § 689.2(f)).

Is the confidentiality of the parties protected?

To the extent possible, the identity of sources who wish to remain anonymous are to be kept confidential, and files are to be treated in a way that exempts them from disclosure under the Freedom of Information Act (45 C.F.R. § 689.5).

How long will the investigation take?

When an awardee institution chooses to conduct an inquiry, the process and decision about whether an investigation is warranted should be completed within 90 days. An investigation and disposition should be completed within 180 days. If the OIG does not receive the results of this investigation within the 180 days, NSF may launch its own investigation.

If the OIG proceeds with its own inquiry it should complete the inquiry within 90 days and, if an investigation is warranted, complete the investigation within 180 days of initiating it.

Do the parties have a right to a hearing?

If the OIG initiates a formal investigation into alleged research misconduct, that investigation may include “an opportunity for the respondent to be heard.” Such an opportunity does not appear to be guaranteed; there is no provision for an opportunity for the complainant to be heard (45 C.F.R. § 689.6(d)(6)).

Do the parties have a right to respond to the findings of the investigation?

Upon an investigation finding of no research misconduct, the OIG will notify the subject of the investigation and, if appropriate, the informant of this finding.

If misconduct is found, the OIG should provide the subject of the investigation with the investigation report and invite them to submit comments or rebuttal. Comments or rebuttal submitted within the period allowed, normally 30 days, will receive full consideration and may lead to revision of the report or of a recommended disposition (45 C.F.R. § 689.9(c)(2)(i)).

The NSF investigation report (or a report from a satisfactory external investigation) must be sent to the Deputy Director within 45 days of completion of the NSF investigation or receiving the report from a satisfactory external investigation. The OIG will submit the investigation report to the Deputy Director together with any comments or rebuttal from the subject of the investigation as well as the recommended disposition. The recommended disposition will propose any final actions to be taken by NSF (45 C.F.R. § 689.9(c)(2)(ii)).

Prior to issuing a disposition, the Deputy Director may initiate further hearings or investigation. Within 120 days after receiving the OIG's recommendations or after completion of any further proceedings, the Deputy Director will send the affected individual or institution a written disposition, specifying actions to be taken. The decision will include instructions on how to pursue an appeal to the Director (45 C.F.R. § 689.9(c)(2)(iii)).

If a loss of scientific integrity is found, who decides what the resolution/remedy should be?

The Deputy Director decides the resolution (if debarment is determined to be the appropriate resolution then the procedures for determining the remedy are set forth in 45 C.F.R. § 620).

Do the parties have the right to appeal if initial decision is not in their favor?

An affected individual or institution may appeal to the Director in writing within 30 days after receiving the Deputy Director's written decision. The Director may appoint an uninvolved NSF officer or employee to review an appeal and make recommendations. The Director will normally inform the appellant of a final decision within 60 days after receiving the appeal. That decision will be the final administrative action of NSF (45 C.F.R. § 689.10).

What are the penalties for misconduct?

45 C.F.R. § 689.3 lists different categories of final actions to be taken in the event that research misconduct is found. These are categorized as Group I, Group II, and Group III actions with Group I being minimal restrictions and Group III being the most severe restrictions. When considering the action to take, NSF officials should consider how serious the misconduct was; the degree to which the misconduct was knowing, intentional, or reckless; whether it was an isolated event or part of a pattern; whether it had a significant impact on the research record, research subjects, other researchers, institutions, or the public welfare; and; any other relevant circumstances.

The penalties imposed may include:

- Group I actions
 - » Send a letter of reprimand to the individual or institution.
 - » Require as a condition of an award that for a specified period an individual or institution obtain special prior approval of particular activities from NSF.

- » Require for a specific period that an institutional official other than those guilty of misconduct certify the accuracy of reports generated under an award or provide assurance of compliance with particular policies, regulations, guidelines, or special terms and conditions.

➤ Group II actions

- » Totally or partially suspend an active award, or restrict for a specified period designated activities or expenditures under an active award.
- » Require for a specified period special reviews of all requests for funding from an affected individual or institution to ensure that steps have been taken to prevent repetition of the misconduct.
- » Require a correction to the research record.

➤ Group III actions

- » Terminate an active award.
- » Prohibit participation of an individual as an NSF reviewer, advisor, or consultant for a specified period.
- » Debar or suspend an individual or institution from participation in Federal programs for a specified period after further proceedings

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ADDITIONAL RELEVANT POLICIES AND RESOURCES

- NSF Manual 15: [Conflicts of Interest and Standards of Ethical Conduct](#)
- NSF Research Misconduct [45 CFR Part 689](#)
- NSF [Open Government site](#) (contains [NSF Open Government Plan 4.0](#))
- [Research.gov](#)
- NSF [Award and Administration Guide, Chapter II](#)

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REPRESENTATIVE CASES AND OUTCOMES

While NSF does not address violations of scientific integrity beyond research misconduct, it does make anonymized summaries of claims of research misconduct publicly available in OIG's Semiannual Report to Congress ([found here](#)). The following examples demonstrate trends gleaned from the summaries.

Falsifying examples to support conclusions is considered an act of research misconduct. For example, an NSF-funded graduate student falsified examples to support conclusions in a paper submitted to a conference. Following an investigation by the student's university that found misconduct, the NSF OIG conducted an independent investigation and found that the university's finding of misconduct was correct and discovered additional likely examples of falsification. The student received a letter of reprimand from NSF, in addition to the university's decision to implement a 6-month suspension.

Fabricating data is research misconduct. For example, a university professor funded by NSF altered data in a manuscript to show a desired result and during the investigation blamed students for not properly analyzing the data and also attributed some data to a colleague who did not exist. The university terminated his employment and NSF debarred him for 3 years and imposed additional restrictions following the end of the debarment.

Falsifying letters of support and plagiarizing proposals is research misconduct. For example, a principal investigator (PI) falsified letters of support and included plagiarized material in proposals. NSF found that the actions constituted research misconduct and barred the PI from serving as an NSF reviewer, advisor, or consultant for 3 years.

Plagiarizing from a declined NSF proposal may not constitute research misconduct. For example, a former NSF program officer was initially found to have committed research misconduct in plagiarizing content from a declined NSF proposal. However, on appeal NSF vacated the finding but required him to be subject to certain other restrictions including agreeing that for six years he would not seek employment with NSF in any capacity, would not serve as an Intergovernmental Personnel Act assignee to NSF, and would not participate as an NSF peer reviewer, advisor, or consultant.

While this guide helps NSF scientists understand the agency's scientific integrity policy, it is not a substitute for legal advice regarding a particular situation. The Climate Science Legal Defense Fund offers **free, confidential consultations to scientists** with questions about scientific integrity.

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NOTES

The Climate Science Legal Defense Fund produced this guide to help scientists understand their rights under federal agency scientific integrity policies. This guide concerns only U.S. laws, and nothing in it should be construed as legal advice for your individual situation.

CSLDF provides free counsel to scientists with legal questions pertaining to their work. Contact us at **(646) 801-0853** or email **lawyer@csldf.org** to arrange a free and confidential consultation with an attorney.



The Climate Science Legal Defense Fund (CSLDF) works to protect the scientific endeavor by helping defend climate scientists against politically and ideologically motivated attacks. CSLDF is a non-profit organization under section 501(c)(3) of the Internal Revenue Code.

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