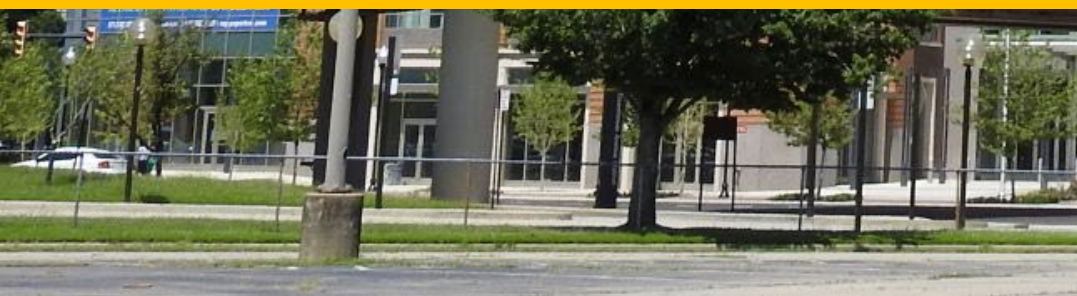




National Science Foundation
Office of Inspector General



Office of Audits Annual Work Plan Fiscal Year 2022



AT A GLANCE

Office of Audits Annual Work Plan Fiscal Year 2022
November 15, 2021

WHY WE CREATED THIS WORK PLAN

The *Inspector General Act of 1978*, as amended, authorizes an Office of Inspector General for the National Science Foundation. By statute, we conduct and supervise independent audits and investigations relating to agency programs and operations and recommend policies that promote effectiveness and efficiency and prevent and detect fraud, waste, and abuse. This work plan lists our required and planned discretionary projects for fiscal year 2022. However, we may modify the plan to address higher priority issues that may arise or to respond to requests from Congress or other stakeholders.

PLANNED AUDITS

Required projects for FY 2022 include:

- Audit of NSF's financial statements
- Audit of compliance with the *Federal Information Modernization Security Act of 2014*
- Audit of NSF's compliance with the *Payment Integrity Information Act of 2019*

Ongoing or planned discretionary projects for FY 2022 include:

- Audit of NSF's controls over Graduate Research Fellowship Program funding
- Inspection of NSF's process to ensure compliance with international telework requirements
- Audit of NSF's divestment of major facilities
- Audit of NSF's oversight of purchase card use
- Audits of NSF's management of a hybrid workforce and potential expansion
- Audits of NSF's oversight of its contracts
- Audit(s) of NSF's oversight of awardee compliance with harassment policies
- Audit of mid-scale projects
- Audit of NSF's oversight of public-private partnerships
- Audit of conflicts of interest for merit review panelists
- Audit of NSF's oversight of Industry-University Cooperative Research Centers

We will also conduct audits of NSF award recipients and reviews of the quality of single audits. Additionally, we will monitor projects as potential future audits.

FOR MORE INFORMATION, PLEASE CONTACT US AT OIGPUBLICAFFAIRS@NSF.GOV.

ABOUT THE OFFICE OF INSPECTOR GENERAL

We provide independent oversight of the National Science Foundation to improve the effectiveness, efficiency, and economy of its programs and operations and to prevent and detect fraud, waste, and abuse. NSF OIG was established in 1989, in compliance with *the Inspector General Act of 1978*, as amended. Because the Inspector General reports directly to the National Science Board and Congress, the Office is organizationally independent from the National Science Foundation.

Our work is divided into two functional areas: 1) audits, which assess the functionality of systems, determine compliance with financial standards and grant requirements, and identify ways to improve systems and operations; and 2) investigations, which address allegations of serious wrongdoing, such as violations of criminal or civil law or fabrication of data and plagiarism in NSF-funded research.

ABOUT THIS PLAN

We perform audits and other engagements mandated by legislation, as well as discretionary, risk-based engagements of NSF's contracts, cooperative agreements, and grants to universities and other institutions. We also conduct internal engagements of NSF's programs to identify ways to improve systems and operations. These engagements help ensure that financial, administrative, and programmatic activities are conducted effectively, efficiently, and in compliance with applicable laws, rules, and regulations. This work plan lists our required and planned discretionary projects for fiscal year 2022.

REQUIRED AUDITS AND REVIEWS

We are required by statute to conduct the following audits in FY 2022:

- Audit of NSF's financial statements
- Audit of compliance with the *Federal Information Security Modernization Act of 2014* (FISMA, Pub L. No. 113-283)
- Audit of NSF's compliance with the *Payment Integrity Information Act of 2019* (PIIA, Pub. L. No. 116-117)

DISCRETIONARY AUDITS AND REVIEWS

Our discretionary plan is flexible, and we may need to modify it to address higher priority issues that arise during the year or to respond to requests from Congress or other stakeholders. Our planned audits focus both internally on NSF management and programs and externally on how award recipients, including institutions and researchers, use NSF funds. Based on risk, we have selected the following discretionary audits, inspections, or reviews for FY 2022, some of which we have already begun.

Audit of NSF's Controls over Graduate Research Fellowship Program Funding *(in progress)*

The Graduate Research Fellowship Program (GRFP) supports outstanding graduate students in NSF-supported STEM disciplines who are pursuing research-based master's and doctoral degrees at accredited institutions. NSF provides funding for the institutions to pay each fellow a 3-year annual stipend of \$34,000. In addition, the sponsoring institutions receive annual allowances of \$12,000 from NSF to cover each fellow's tuition and fees. Our audit is determining whether NSF properly distributes, monitors, and accounts for GRFP funding. We also are reviewing GRFP administration at three institutions to examine implementation of program policies at the recipient level.

Inspection of NSF's Process to Ensure Compliance with International Telework Requirements *(in progress)*

As an independent federal agency, NSF must comply with the Department of State's June 7, 2016, *Requirements for Executive Branch Employees Teleworking in Foreign Locations*. This policy states that federal employees may not telework from a foreign location without an approved Domestic Employee Teleworking Overseas arrangement. In addition, NSF must comply with other telework requirements, such as policy promulgated by the Office of Personnel Management in 2010. NSF's telework policy states that due to increased security concerns and costs, employees are not permitted to telework in a foreign country. Because the pandemic has dramatically increased the numbers of NSF staff who are teleworking, some personnel may not be following these policies. We plan to determine whether NSF has adequate controls to detect prohibited international telework and ensure compliance with applicable policies and requirements.

Audit of NSF's Divestment of Major Facilities *(in progress)*

NSF funds the construction, management, and operation of major multi-user research facilities (major facilities), which are shared-use infrastructure accessible to a broad community of researchers and educators. Total construction costs for NSF's major facilities typically range from one hundred to several hundred million dollars. Once the award recipient completes construction, NSF facilities may operate for 20 to 40 years with annual operations and maintenance budgets ranging between 6 and 10 percent of the original construction cost. The *American Innovation and Competitiveness Act* (Pub. L. No. 114-329) requires NSF to address divestment as part of the lifecycle plans for its major facilities. We are assessing the adequacy of NSF's processes for prioritizing, planning for, and managing divestment of its major facilities.

Audit of NSF's Oversight of Purchase Card Use *(in progress)*

The Government Charge Card Abuse Prevention Act of 2012 (Pub. L. No 112-194) and Office of Management and Budget Memorandum 13-21 require inspectors general (IGs) to assess the risk of fraud and agencies' improper use of purchase cards. The Act also requires IGs and agency heads to jointly report violations of the Act to the Office of Management and Budget when agencies' purchase card spending exceeds \$10 million annually. Our last audit of NSF's purchase card program was issued in 2014. This audit is reviewing recent purchase card transactions to help ensure that NSF has effective controls in place when spending exceeds the threshold, which could

occur in FY 2022. The audit is also reviewing the adequacy of controls over purchase cards in a hybrid workforce environment, where some card holders may be working remotely, and it might be more difficult for NSF to oversee purchases.

Audits of NSF's Management of a Hybrid Workforce and Potential Expansion

In FY 2022, NSF will likely be implementing and managing a hybrid workforce, which will require support for on-site and multiple off-site employees. NSF's budget could also increase in FY 2022, and a new directorate could be added. We plan to examine the overall challenges that result from the use of a hybrid workforce and the agency's possible expansion, which present new individual and collective risks to NSF management. We envision a body of work on topics such as the adequacy of NSF's information technology infrastructure; use of space at NSF's Alexandria, Virginia headquarters; management of personnel hiring, supervision, and retention; structure and location of merit review panels; controls related to a new directorate, if applicable; and controls over the award lifecycle and NSF's assets. As NSF begins planning and implementation, we will focus on the most relevant areas.

Audits of NSF's Oversight of its Contracts

Contract oversight is essential to NSF's management of its award portfolio, and we envision conducting audits to determine if that oversight is adequate. One area we plan to audit is NSF's oversight of its contract with Leidos to manage the United States Antarctic Program. The \$2.3 billion Leidos contract, which is active through March 2025, is NSF's largest and most visible contract. It requires a strong monitoring program that includes cost monitoring policies and procedures; processes to ensure adherence to deliverable and deadline requirements; and appropriate identification and consideration of risks. We plan to determine if NSF has implemented an appropriate monitoring program over the contract. We also plan to audit some of NSF's more than 30 cloud-based applications, which include commercial off-the-shelf products as well as custom-built systems. We will look at the contracts/purchase agreements NSF used to acquire and use these applications to determine if the agreements include adequate IT security clauses and if NSF is ensuring compliance with those clauses. In addition, we may audit NSF's contracts for a variety of programs and products. Prior audits of some contracts have found that NSF did not always maintain key documents or coordinate effectively with contractors, and we plan to see if these issues continue, and, if they do, if they are systemic. The specific audits we perform in FY 2022 will depend on the availability of staff with expertise in these different areas.

Audit(s) of NSF's Oversight of Awardee Compliance with Harassment Policies

NSF added an award term and condition, effective October 22, 2018, requiring award recipients to notify the agency of any findings/determinations of sexual harassment, other forms of harassment, or sexual assault regarding an NSF-funded Principal Investigator (PI) or co-PI. Recipients must also tell NSF if the PI or co-PI is placed on administrative leave or if the awardee has taken administrative action against the PI or co-PI relating to a finding/determination or an investigation of an alleged violation of awardee policies or codes of conduct, statutes, regulations, or executive orders relating to sexual harassment, other forms of harassment, or sexual assault. NSF estimated in August 2021

that it received about 1.5 notifications a month. NSF's Office of Equity and Civil Rights receives the notifications and works with NSF staff to determine the appropriate course of action. According to its 2021 *Proposal and Awards Policies and Procedures Guide*, "NSF expects all research organizations to establish and maintain clear and unambiguous standards of behavior to ensure harassment-free workplaces wherever science is conducted." Our audit will evaluate NSF's harassment policies and its oversight over institutions. We may conduct additional audit work, such as testing compliance at selected awardees.

Audits of Mid-Scale Projects

In its FY 2022 Budget Request, NSF requested more than \$179 million for mid-scale projects costing between \$6 and \$100 million. These projects include research instrumentation, equipment, and upgrades to major research facilities or other research infrastructure investments. In FY 2022, we may review management requirements in mid-scale solicitations, controls for mid-scale projects, and training and experience of NSF staff responsible for making and overseeing mid-scale awards.

Audit of NSF's Oversight of Public-Private Partnerships

NSF plans to increase public-private partnerships agency wide. Some of these partnerships share the following characteristics: industry review or participation in part of the merit review process; joint (but separate) funding by NSF and industry; and industry funders' participation as advisors and fellow researchers at awardee universities. Potential risks of these partnerships include conflicts of interest; proposals tailored to accommodate specific companies' needs; cultural differences; reputational damage; and inadequate controls over company employees working with university researchers. This audit will evaluate how such public-private partnership awards operate at selected universities and will determine if NSF's oversight is effective.

Audit of Conflicts of Interest for Merit Review Panelists

NSF uses outside experts, called panel reviewers, to help decide which proposals to fund. Program Officers use information from reviewers to recommend awarding or declining a proposal. NSF selects reviewers in multiple ways, including proposers' requests. Using NSF Form 1230P, Program Officers are to ensure that panel reviewers do not have conflicts of interest. Our audit will assess if NSF's process for vetting merit review panelists sufficiently prevents and detects potential conflicts of interest. Additionally, we will examine what NSF does if they identify a possible conflict.

Audit of NSF's Oversight of Industry-University Cooperative Research Centers

In 1973 NSF created the Industry–University Cooperative Research Centers (IUCRC) program to foster long-term partnerships among industry, academia, and government. The program is primarily funded by the Computer and Information Science and Engineering directorate and the Engineering directorate. In June 2021, NSF had 257 active IUCRC awards; for FY 2022, NSF has requested \$23.50 million for the program. The audit of this relatively small public-private partnership program is an initial step in assessing NSF's management of public-private partnerships, which are a high priority for NSF.

Audits of NSF Award Recipients

We will continue to audit NSF award recipients at various universities, non-profits, and for-profit entities to detect improper spending or noncompliance with federal and NSF requirements. We will conduct some of the audits, and independent public accounting firms with whom we contract will conduct the rest. The audits may focus on areas like internal controls, accounting systems, or incurred costs. We will also continue to expand our oversight of smaller entities through targeted audits focused on grant management capabilities.

Reviews of the Quality of Single Audits

Award recipients that spend \$750,000 or more of federal funds in a year must obtain a single audit, which is an important oversight tool. We will continue to review the quality of single audits of NSF award recipients for which NSF has audit cognizance or oversight — defined generally as those institutions that receive the majority of their federal funding from NSF. We will also review other award recipients when we have concerns about the NSF-related information contained in their single audit reports. Our reviews determine if the audits comply with federal requirements and professional audit standards. In FY 2022, we plan to conduct desk reviews of approximately 100 single audit report packages and conduct quality control reviews of 3 single audits.

PROJECTS WE ARE MONITORING

Pending additional background research and resource availability, we will monitor the following projects as potential future audits.

Major Facilities

NSF reports five major facilities are under construction:

- Antarctic Infrastructure Modernization for Science
- Daniel K. Inouye Solar Telescope
- High-Luminosity Large Hadron Collider
- Regional Class Research Vessel
- Vera C. Rubin Observatory (formerly the Large Synoptic Survey Telescope)

Due to COVID-19, NSF will either extend or completely re-baseline all five projects. In FY 2022, we plan to monitor construction activities, including changes to schedule and costs, as NSF manages these projects during the pandemic.

Decommissioning of Telescope at Arecibo Observatory

Since August 2020, we have monitored NSF's response to unexpected cable breaks that damaged the 57-year-old telescope at Arecibo Observatory in Puerto Rico. In November 2020, NSF authorized decommissioning the telescope. On December 1, 2020, the 305-meter telescope collapsed. In March 2021, NSF reported to Congress that preliminary analysis indicated that clean-up costs could range from \$30 to \$50 million over FYs 2021 and 2022 and that future plans for the observatory were still to be determined. In FY 2022 we will continue monitoring NSF's decommissioning of the telescope and future plans for the site.

National Center for Atmospheric Research

The National Center for Atmospheric Research (NCAR) is a Federally Funded Research and Development Center sponsored by NSF and managed by the University Corporation for Atmospheric Research. NSF funds the management and operation of NCAR with a cooperative support agreement issued in 2008, which was extended to March 31, 2022. NSF issued a successor award, effective October 1, 2018. As of September 2021, \$3.5 million remained on the 2008 award. We will continue to monitor the spend down of that award.



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