

Semiannual Report to Congress

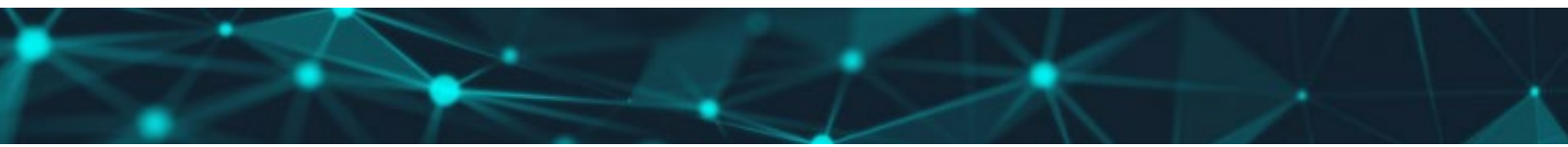
October 1, 2020 – March 31, 2021



**National Science Foundation
Office of Inspector General
NSF-OIG-SAR-64**

Table of Contents

From the Inspector General	1
Audits and Reviews	2
Audits and Reviews of NSF Programs and Operations	2
Reviews Related to COVID-19	3
Audits of NSF Award Recipients	4
Reviews of Single Audits	5
Audit Resolution.....	6
Investigations	7
Program Integrity Investigations.....	8
Actions Resulting from Previously Reported Program Integrity Investigations.....	9
Research Misconduct Investigations.....	11
NSF Management Actions on Previously Reported Research Misconduct Investigations	13
Administrative Investigations.....	14
Peer Review	15
Statistical Tables	16
Audit Data	16
Investigations Data	20



From the Inspector General

I am pleased to present our semiannual report, which summarizes our work and accomplishments during the first half of fiscal year 2021.

As this period ends, the world remains challenged by the COVID-19 pandemic. When the pandemic began more than a year ago, we transitioned to full-time remote work, which allowed us to deliver results and keep our employees safe. During these extraordinary times, our professional and dedicated staff remain focused on work that improves NSF's ability to achieve its mission and protects taxpayers.

In this reporting period, our work led to more than \$5.8 million in potential savings to taxpayers, including \$3.2 million in investigative recoveries and \$2.6 million in questioned costs. We also continued our oversight of NSF's response to the pandemic and designed our FY 2021 audit work plan to address the evolving health, economic, and societal impacts of COVID-19 on NSF and its award recipients. Just as importantly, our oversight promotes effectiveness, efficiency, and integrity in NSF programs and grants. This semiannual period, we reported on our risk assessment of NSF's award closeout process; NSF's information security program; and audits of four NSF award recipients that expended nearly \$262 million of NSF funds.

We also continue to address internal and external threats to the integrity of NSF-funded research by investigating wrongdoing involving organizations and individuals that receive awards from NSF. Notably, during this semiannual period, a former professor and his company were found jointly and severally liable to pay more than \$1.6 million in restitution for their involvement in a scheme to defraud NSF of more than \$1 million in Small Business Innovation Research/Small Business Technology Transfer funds. The former professor was also sentenced to 2 years' probation, 200 hours of community service, and a \$25,000 fine.

We appreciate the support of NSF management and staff from across the Foundation. Our partnership with NSF, the National Science Board, and Congress is a critical component to fulfilling our mission. We also look forward to continuing our work with the Council of the Inspectors General on Integrity and Efficiency on important governmentwide issues.

Allison C. Arnes

Audits and Reviews

The Office of Audits is responsible for reviewing NSF programs and operations to ensure that administrative, programmatic, and financial aspects of NSF operations are conducted effectively, efficiently, and economically. We also audit grants, contracts, and cooperative agreements funded by NSF. By providing independent and objective assessments of NSF's program and financial performance, we help NSF improve its business policies and practices to better support its mission.

Audits and Reviews of NSF Programs and Operations

FY 2020 Financial Statement Audit Results in Unmodified Opinion and No Material Weaknesses or Significant Deficiencies in Internal Controls

NSF is required to prepare annual financial statements, which must be audited by an independent entity. Kearney & Company, P.C. (Kearney), under a contract with NSF OIG, audited NSF's FY 2020 and 2019 comparative financial statements. It issued an unmodified opinion on the financial statements and identified no instances of noncompliance or other matters that are required to be reported under *Generally Accepted Government Auditing Standards*. This marks the twenty-third consecutive year NSF has received a clean opinion on its financial statements.

Audit of NSF's Information Security Program for FY 2020 Determined the Program Was Effective

NSF depends on computerized information systems to process, maintain, and report essential information. The *Federal Information Security Modernization Act of 2014* (FISMA, Pub. L. No. 113-283) requires an annual independent evaluation of NSF's Information Security Program and practices, as well as an assessment of its compliance with FISMA requirements. Under a contract with NSF OIG, Kearney performed the FY 2020 FISMA audit and rated NSF's Information Security Program as effective according to the Office of Management and Budget's (OMB) maturity model criteria. For the FY 2020 audit, the auditors issued five new and three modified repeat findings in the report with associated recommendations for NSF to address weaknesses in information technology security controls. NSF subsequently provided a corrective action plan, and all eight new recommendations have been resolved. We will evaluate the effectiveness of NSF's corrective actions as part of the FY 2021 FISMA audit.

No Outstanding Audit Recommendations Related to NSF's Charge Cards

The *Government Charge Card Abuse Prevention Act of 2012* (Pub. L. No. 112-194) and OMB M-13-21 require OIGs to report to OMB the agency's progress in implementing audit recommendations related to government charge cards. We reported that, as of September 30, 2020, there were no outstanding audit recommendations for charge cards for NSF and we were not submitting a semiannual Joint Purchase Card Violation Report. We issued our last purchase card audit report in January 2014 and our last travel card audit report in August 2015. NSF's FY 2020 purchase card and travel card activity were both less than the audit and reporting threshold of \$10 million.

Gone Act Risk Assessment Determined NSF Completed Award Closeout Timely; Audit Not Needed

As required by the *Grants Oversight and New Efficiency Act* (GONE Act, Pub. L. No. 114-117), we conducted a risk assessment to determine whether an audit or review of NSF's award closeout process was warranted. We found that for most awards in our assessment, NSF completed each phase of award closeout timely. However, we identified several risk areas in NSF's award closeout process for which the agency could strengthen its management and system controls. Specifically, NSF did not always follow its award closeout policy, which resulted in delays in the financial and administrative closeout phases. Even though NSF took steps to reduce delays in awardee submission of technical deliverables, such as final reports, this area continues to be a challenge that prolongs final closeout. Our assessment describes other risks that may be contributing to delays in award closeout, including inconsistent processes and weaknesses in NSF's Report Tracking System and communications process. Although we determined an audit was not necessary at this time, we included several suggestions intended to strengthen NSF's management and system controls to reduce risks in the award closeout process. NSF has already started making improvements to its award closeout process. We will continue to monitor this area and may conduct future risk assessments or audits as appropriate.

Reviews Related to COVID-19

In March 2020, we established an ad-hoc team to review NSF's response to the COVID-19 pandemic. During this semiannual period, we contributed to a governmentwide review, issued one review, completed two audits of award recipients (described in the following section), terminated one review, and included potential effects of COVID-19 in our FY 2021 report on [NSF's management challenges](#). Additionally, we designed our FY 2021 audit work plan to address the evolving health, economic, and societal impacts of COVID-19 on NSF and its award recipients. Later this year, we will assess NSF's spending plan related to the *American Rescue Plan Act of 2021*, which provided \$600 million to NSF to respond to COVID-19 through new and existing awards.

Top Challenges in Pandemic Relief and Response Report Updated

The *Coronavirus Aid, Relief, and Economic Security Act* (CARES Act) and other related legislation provided approximately \$2.4 trillion to address the public health and economic crises resulting from the COVID-19 pandemic. The CARES Act also established the Pandemic Response Accountability Committee within the Council of the Inspectors General on Integrity and Efficiency.

As a member the Pandemic Response Accountability Committee, we contributed to its February 3, 2021 report titled *Update: Top Challenges in Pandemic Relief and Response*. Specifically, we reported that COVID-19 contributed to challenges across the NSF, including (1) oversight of major multi-user research facilities; (2) managing the Intergovernmental Personnel Act program; (3) oversight of the Antarctic Infrastructure Modernization for Science project; (4) increasing diversity in science and engineering education and employment; (5) mitigating threats posed by foreign government talent recruitment programs; and (6) grant oversight.

NSF's Plans and Procedures for Employees' Return to Headquarters Were Reasonable and Prudent

In response to a June 15, 2020 request from the House of Representatives Committee on Oversight and Reform's Subcommittee on Government Operations, we reviewed NSF's plans for returning employees to its headquarters building during the pandemic. In November 2020, we reported NSF's plans were reasonable, prudent, and consistent with best practices, as well as federal and state guidance on reopening businesses. NSF has continued to ensure critical and essential services meet mission needs, while protecting the health and safety of its workforce. Employee feedback obtained from three surveys NSF conducted in May, June, and July 2020 indicated that staff supported NSF's approach.

Review of NSF's Strategy for Identifying and Responding to Risks and Impacts of COVID-19

In July 2020, we began a review of NSF's high-level strategy for identifying and responding to risks and impacts of the COVID-19 pandemic on NSF and its recipients. We terminated this review in February 2021 because we determined that NSF was actively working to evaluate and respond to the risks and impacts of the pandemic and no further review was warranted. Given the evolving environment, we will continue to monitor NSF's pandemic response and its efforts to effectively manage scientific and financial risks.

Audits of NSF Award Recipients

NSF Award Recipients Have Implemented Temporary Administrative Flexibilities

In October 2020, we initiated 10 audits of NSF award recipients focused on temporary administrative flexibilities authorized by the OMB.¹ Our objectives were to determine (1) whether and how each recipient implemented the temporary administrative flexibilities and (2) if costs claimed were allowable, allocable, reasonable, and in compliance with NSF award terms and conditions and applicable federal requirements. The audits included costs that the recipients filed with NSF for reimbursement between March 1, 2020, and September 30, 2020.

We issued final reports for the University of Alaska Fairbanks and the University of Kentucky Research Foundation during this semiannual period. We reported both recipients appropriately implemented the temporary flexibilities authorized by OMB. However, we identified nearly \$62,000 in questioned costs across both audits that were not related to temporary administrative flexibilities. The remaining eight audits are ongoing.

COVID-19 REPORTS OF AWARD RECIPIENTS THIS SEMIANNUAL PERIOD

Report No.	Award Recipient	Questioned Costs
21-1-005	University of Alaska Fairbanks	\$28,606
21-1-006	University of Kentucky Research Foundation	\$33,151
Total		\$61,757

Source: NSF OIG

¹ OMB M-20-17, M-20-20, and M-20-26

Audits of Award Recipients Result in Nearly \$2.6 Million of Questioned Costs

OIG staff and contractors completed audits of four NSF award recipients that expended nearly \$262 million of NSF funds during the respective audit periods.² Although the Texas A&M University and University of Florida audits included various types of grants awarded by NSF, the University of Kansas Center for Research, Inc., and University of Wyoming audits focused solely on awards related to the Established Program to Stimulate Competitive Research (EPSCoR).

The audits assessed the allowability, allocability, and reasonableness of costs charged to NSF and resulted in nearly \$2.6 million of questioned costs. The findings included unallowable costs, inadequately supported costs, and inappropriately allocated costs. The auditors recommended that NSF direct award recipients to strengthen controls over the areas that led to the questioned costs and that NSF recover the questioned costs.

REPORTS OF AWARD RECIPIENTS THIS SEMIANNUAL PERIOD*

Report No.	Award Recipient	Questioned Costs
21-1-002	Texas A&M University	\$137,558
21-1-001	University of Kansas Center for Research, Inc. - EPSCoR Awards	\$1,550,054
21-1-003	University of Wyoming - EPSCoR	\$256,351
21-1-004	University of Florida	\$640,723
Total		\$2,584,686

*Does not include COVID-19 related reports.

Source: NSF OIG

Reviews of Single Audits

*Uniform Guidance*³ requires colleges, universities, and non-profit organizations that expend \$750,000 or more a year in federal awards to obtain an annual independent financial audit, referred to as a "single audit." NSF relies on the results of single audit reports to plan its oversight efforts including site visits and other post-award monitoring. We conduct desk reviews on all single audit reporting packages for which NSF is the cognizant or oversight agency.⁴ During a desk review, we examine the audit reporting package, which includes financial statements, federal award expenditures, and auditors' reports, but not the underlying auditors' audit documentation, to determine whether it meets *Uniform Guidance*, *Generally Accepted Government Auditing Standards* (GAGAS), and American Institute of Certified Public Accountants (AICPA) audit standards.

During this period, we conducted desk reviews of 59 single audit reporting packages. The audits were conducted by 43 different independent public accounting firms and covered \$457 million in total federal expenditures, including \$262 million in NSF direct

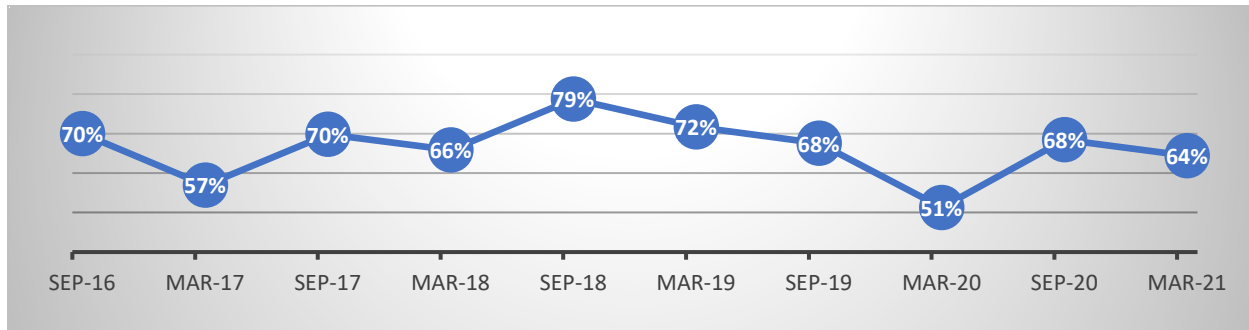
² This amount does not include funds included in the COVID-19 related audits previously described.

³ 2 CFR Pt. 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards

⁴ Generally defined as an awardee's predominant federal funding agency.

expenditures. As shown in Figure 1, 38 audit reporting packages (64 percent) fully met federal reporting requirements.

Figure 1. Percentage of Single Audits That Met Federal Reporting Requirements



Source: NSF OIG

We identified deficiencies in 21 audit reporting packages including missing report language and information needed to identify awards received from pass-through entities; incorrect identification of major programs; reporting packages submitted after required deadlines; lack of identification of cluster awards; audit report findings without the required elements; insufficient corrective action plans; and inaccurate information and identification of findings on the data collection form.

For errors that potentially impacted the reliability of the audit reporting packages, we contacted the auditors and awardees for explanations of each of the potential errors. In most cases, the auditors and awardees provided adequate explanations or additional information to demonstrate compliance with federal reporting requirements. However, in one instance, we rejected the audit reporting package because the deficiencies were significant. For all reviews, we issued a letter to the auditor and awardee informing them of the results of our review and the actions needed to improve the quality and reliability of future audits. We also provided a copy of the letter to the awardee's other federal funding agencies for their use in monitoring and oversight. In the instance where we rejected the audit, we separately referred the auditor to the AICPA Professional Ethics Division and Peer Review Program for additional review.

Audit Resolution

NSF Completes Actions to Improve Subrecipient Monitoring

We closed the final two open recommendations from our 2018 *Audit of NSF's Oversight of Subrecipient Monitoring*,⁵ which evaluated whether NSF's processes for monitoring awardees were sufficient to ensure that pass-through entities monitored subrecipients properly. NSF updated its Business System Review Guide, which, among other updated procedures, directs NSF staff to obtain and review major facilities' pre-award analysis of proposed subrecipients, including how the major facility mitigated subrecipient risks. NSF also updated its policies to address *Uniform Guidance* requirements, clarified how

⁵ OIG 18-2-005, June 21, 2018

awardees identify subrecipients in their proposed budgets, and reiterated that awardees must provide budgets and budget justifications for subrecipients.

NSF Enhanced Policies and Procedures for Evaluations and Its Evidence-Based Planning and Policymaking

We closed all recommendations from our 2020 *Audit of NSF's Evaluation and Assessment Capability Section's Use and Oversight of Contracts*.⁶ NSF established the Evidence Act and Data Governance Steering Committee to support the implementation of the *Evidence-based Policymaking Act of 2018* (Evidence Act) requirements. The NSF Evaluation Officer meets with NSF's Chief Operating Officer quarterly to provide progress reports on Evidence Act implementation. NSF developed an Evaluation Guidebook, which (1) provides background information for program staff, (2) outlines expectations for program staff participation in evaluation activities, (3) clarifies support program staff can expect to receive in interpreting findings and distilling implications of findings and recommendations for their programs, and (4) describes agency policy on the dissemination of findings and implementation of recommendations. Lastly, NSF updated its Acquisition Manual to include language encouraging contracting officers to choose acquisition strategies that utilize "Best-in-Class" and "Spend Under Management" contract vehicles.

NSF Sustains \$20,776 of Indirect Costs Erroneously Charged to Participant Support

During our audit of EPSCoR awards at the University of Wyoming, we [alerted NSF](#) that the University of Wyoming incorrectly allocated \$34,195 of indirect costs to participant support expenditures on three NSF awards (one EPSCoR and two non-EPSCoR). Of that total, \$13,419 had already been adjusted. During audit resolution, NSF sustained the remaining \$20,776. As a result of our audit, the University of Wyoming also adjusted its accounting system to remove participant support from the list of costs that receive indirect cost allocations for current and future NSF awards.

NSF Completes Actions to Address Weaknesses Identified in FISMA Audit

Our November 2019 audit⁷ of NSF's Information Security Program for FY 2019 included 23 recommendations to improve IT security. NSF updated policies and procedures, completed security assessment reviews, modified contract deliverables, and developed Program Execution Plans to address the weaknesses identified in the audit report. As of December 2020, 20 of the 23 recommendations associated with this audit report have been closed.

Investigations

The Office of Investigations is dedicated to promoting effectiveness and efficiency in NSF programs and operations. We investigate wrongdoing involving organizations or individuals that receive awards from, conduct business with, or work for NSF. We assess

⁶ OIG 20-2-005 March 23, 2020

⁷ OIG 20-2-002, November 22, 2019

the seriousness of misconduct and recommend proportionate action. We work in partnership with agencies and award recipients to resolve issues when possible.

Program Integrity Investigations

As part of our mission, we investigate allegations concerning misuse of NSF funds, false statements in documents submitted to NSF, and employee misconduct. When we identify a violation of a criminal or civil statute, we refer our investigations to the U.S. Department of Justice (DOJ) for criminal prosecution or civil action. When appropriate, we also refer matters to NSF for administrative action, such as award termination and governmentwide suspension or debarment. A brief description of case outcomes during this SAR period follows:

Professor Charged with Wire Fraud on an NSF Award

A multi-agency investigation revealed that a university professor and his small business made false statements to another agency in a Small Business Technology Transfer (STTR) proposal and misused STTR award funds. We also determined that the professor misused NSF award funds received through his university, which he used to pay for STTR award-related expenses. Later, the professor failed to properly disclose his non-university affiliations and current and pending support in an awarded NSF proposal. When interviewed, the professor made false statements to federal investigators. The professor was previously indicted on charges associated with the other agency's STTR awards. During this period, the indictment was superseded to add counts of wire fraud and false statements related to his failures to disclose in the NSF award proposal and his statements to federal investigators. The investigation is ongoing.

SBIR Company Canceled Award Following OIG Training

A Small Business Innovation Research (SBIR) awardee canceled its award after attending an NSF SBIR Phase I Grantees Workshop. At the workshop, we presented on the rules and requirements of the SBIR program and the potential consequences of breaking those rules. As a result of our presentation, the awardee company realized that it may have been out of compliance with NSF's award terms and decided to cancel its award without expending any funds, resulting in more than \$200,000 in funds put to better use.

University Returned More Than \$1.3 Million For Improper Expenditures

A university returned more than \$1.3 million to NSF after identifying misspending on four NSF awards. The university self-disclosed its findings from an internal investigation involving a PI who failed to consistently report participants to NSF and verify and document participant eligibility. The PI also paid ineligible participants and used participant support costs to pay mentors. We reviewed the university's investigative report and accepted its conclusions. The university opted to return the four NSF awards in full. The university took several actions against the PI, including a letter of reprimand, a one-year suspension without pay, a loss of endowment, reduction in compensation, ineligibility to serve as a PI on any new proposals for 3 years, and completion of research integrity training. The university also required the PI to reimburse one-third of the

misappropriated funds and appoint a co-PI with fiduciary responsibilities for all his remaining grants.

Actions Resulting from Previously Reported Program Integrity Investigations

Former University Professor and SBIR/STTR Company Sentenced in Wire Fraud Scheme

We previously reported that a husband and wife were indicted on one count each of wire fraud for a scheme to defraud NSF of more than \$1 million in SBIR/STTR funds. The husband, wife, and company were subsequently charged with mail fraud and suspended governmentwide along with three other associated entities; the husband and company each pled guilty to wire fraud.⁸ During this SAR period, the wife was sentenced to 2 years' probation on behalf of her company. The husband, who was a former university professor, was sentenced to 2 years' probation, 200 hours of community service, and a \$25,000 fine. The company and husband were also found jointly and severally liable to pay more than \$1.6 million in restitution, including nearly \$1.3 million to NSF and \$300,000 to a state's economic development corporation. DOJ's press release regarding this case can be found [here](#). The mail fraud charges against the company and husband were dismissed, and both the wire and mail fraud charges against the wife were dismissed. Per their plea agreements, the husband and company agreed to 5-year voluntary exclusions. We recommended NSF debar the wife and the three associated entities for 5 years. NSF's decision is pending.

SBIR/STTR Company Senior Scientist Sentenced in Scheme to Defraud

We previously reported that a company and its president, senior scientist, and PI were suspended governmentwide and that the senior scientist pled guilty to one count of wire fraud for a scheme to defraud multiple federal agencies.⁹ During this SAR period, the senior scientist was sentenced to 1 year of home confinement, 2 years' probation, 100 hours of community service, and a \$50,000 fine. The sentencing judge applied a two-point enhancement for obstruction of justice based on evidence that the senior scientist provided falsified financial records to us during the investigation. The company, president, and senior scientist also entered into a civil settlement agreement and paid \$700,000 in damages for *False Claims Act* violations, of which nearly \$12,000 was returned to NSF in this multi-agency investigation. Another federal agency is adjudicating the debarment of the company, president, and senior scientist.

STTR Company Settled False Claim Allegations

We previously reported that NSF suspended an award to an STTR company as the result of allegations the company misrepresented the employment status of the former PI.¹⁰ The company and company's founder agreed to pay nearly \$150,000 to settle *False Claims Act*

⁸ September 2018 Semiannual Report, p.7; September 2019 Semiannual Report, p.5; March 2020 Semiannual Report, p.8

⁹ September 2017 Semiannual Report, p.15; September 2020 Semiannual Report, p.5

¹⁰ September 2017 Semiannual Report, p. 15

allegations related to claims involving a required subaward agreement with a university. We conducted this investigation with the Naval Criminal Investigative Service. The NSF portion of returned funds was more than \$54,000. DOJ's press release about this case can be found [here](#).

SBIR Company Pleaded Guilty to False Statements

We previously reported that NSF terminated an SBIR Phase II award and recovered more than \$400,000 after our investigation found that the company used a full-time student as the award's PI, in violation of the SBIR program's rule that the PI be primarily employed with the company.¹¹ The multi-agency investigation found that the company submitted false statements and claims related to the PI's primary employment, failed to expend grant funds in accordance with approved budgets, and proposed individuals as company employees without their permission. During this semiannual period, the company pleaded guilty to two counts of false statements. Sentencing is scheduled for June 2021.

SBIR Company Founder and CEO Charged with Wire Fraud and False Statements

We previously reported that NSF withheld a final payment to an SBIR company based on evidence that the company misrepresented the employment status of its PI and its use of award funds.¹² During this reporting period, the company's founder and CEO was charged by criminal complaint with wire fraud and making and transmitting false documents to NSF. NSF agreed with our recommendation to suspend the CEO, the company, and a second, related company governmentwide. Our investigation is ongoing.

SBIR Company President and University Professor Returned Nearly \$130,000

We previously reported that NSF permanently withheld the final award payment to an SBIR company that had an ineligible PI, who was also a university professor and the company's president.¹³ During this period, the company president returned nearly \$130,000 to NSF pursuant to a non-prosecution agreement with the U.S. Attorney's Office in the district where the company is located.

Former University PI Debarred for 3 Years

We previously reported that NSF suspended awards under a PI who was involved with a foreign government talent recruitment program and may have had additional overseas employment.¹⁴ The PI left the U.S. and resigned from the university during our investigation and was subsequently replaced on the university's awards. We found evidence that the former PI failed to provide all responsive documentation related to the foreign government talent recruitment program and overseas employment in response to a subpoena. During this semiannual period, NSF agreed with our recommendation to debar the former PI for 3 years.

¹¹ March 2019 SAR, p. 13

¹² September 2018 Semiannual Report, p.10

¹³ March 2018 Semiannual Report, p.9

¹⁴ September 2019 Semiannual Report, p.2

Professor Debarred after Guilty Plea

We previously reported that a tenured professor pleaded guilty to providing materially false statements in a scheme to defraud NSF and was sentenced to 10 months of probation and 2 months of home confinement.¹⁵ During this reporting period, NSF debarred the professor for 3 years, consistent with our recommendation.

Research Corporation, Former CFO, and President/CEO Suspended Governmentwide

We previously reported that more than \$1 million in NSF funds were put to better use as part of an investigation into allegations that a non-profit research corporation could not account for a significant amount of NSF funds and used federal funds to purchase a certificate of deposit.¹⁶ During this reporting period, NSF agreed with our recommendation to suspend the research corporation, its former chief financial officer, and its president/ chief executive officer governmentwide. Our ongoing investigation is being conducted with the U.S. Attorney's Office in the district where the research corporation is located.

Research Misconduct Investigations

Research misconduct damages the scientific enterprise, is a potential misuse of taxpayer dollars, and undermines the trust of citizens in government-funded research. It is imperative to the integrity of research that NSF-funded researchers carry out their projects with the highest ethical standards. Pursuing allegations of research misconduct — plagiarism, fabrication, and falsification — continues to be a focus of our investigative work. NSF takes research misconduct seriously, as do NSF's awardee institutions. For each case described in this section, we recommended that NSF take appropriate actions against the individuals. Unless otherwise specified, NSF's decisions are pending.

Graduate Student Plagiarized from a Manuscript He Reviewed for a Journal

A graduate student plagiarized material from a confidential manuscript he reviewed for a journal and published that material in a conference paper under his own name. The graduate student initially submitted his paper to the conference with one citation to the journal manuscript. However, he removed the citation before his conference paper was published because the journal manuscript was rejected for publication.

After the graduate student's paper was published, the journal manuscript authors confronted him about the plagiarism. The graduate student claimed that his student was responsible for the plagiarism, although he had no students. He further suggested that instead of retracting the paper, he could add the authors of the manuscript as co-authors on another paper he had written that further developed their method.

The university investigation found that the graduate student committed plagiarism, and the paper was retracted during the investigation. The graduate student was enrolled in two departments at the university, and the university removed him from the department

¹⁵ March 2020 Semiannual Report, p. 7; September 2020 Semiannual Report, p. 5

¹⁶ September 2020 Semiannual Report, pp.2-3

associated with the misconduct. He remained at the university in the other department until he graduated.

The university's report neither explained the investigation committee's reasoning for its finding nor referred to specific evidence in making its determination. In response to our request for more information, the university provided a detailed comparison of the graduate student's paper and the manuscript he reviewed, which showed that they were nearly identical. Because the university did not offer any further analysis, we reviewed all the documents it provided. We determined that the single citation to the manuscript, which the graduate student removed before publication, did not convey the extent to which he copied from the manuscript. Despite the graduate student's claims of ignorance, we found he had received training in proper citation and peer review confidentiality. Ultimately, we concurred with the university that the graduate student plagiarized, and noted several aggravating factors, including his refusal to acknowledge any wrongdoing, lack of candor, and violation of the peer review process.

In response to our draft report, the graduate student contended that NSF had no jurisdiction because it did not fund the research in question. The graduate student said he only acknowledged NSF in his paper because his advisor told him to do so and that the work presented was not related to his role on his advisor's NSF grant. According to the graduate student's advisor, an acknowledgement of NSF support was appropriate because the paper's topic aligned with the graduate student's role on the grant. Therefore, we concluded NSF does have jurisdiction, and recommended that NSF:

- Make a finding of research misconduct;
- Issue a letter of reprimand;
- Debar the graduate student for 2 years;
- Require completion of interactive responsible conduct of research training; and
- For 5 years:
 - Bar the graduate student from NSF participation as peer reviewer, advisor, or consultant; and
 - Require contemporaneous certifications that any proposals or reports he submits to NSF do not contain plagiarized, falsified, or fabricated material (certifications); and
 - Require contemporaneous assurances by a responsible official of his employer that any proposals or reports he submits to NSF do not contain plagiarized, falsified, or fabricated material (assurances).

Former Student Fabricated Research Data and Evidence

A university investigated a recent Ph.D. graduate for data fabrication and falsification after his former mentor could not find the underlying data for more than a dozen figures in his NSF-funded dissertation. After manual and forensics reviews turned up no evidence, the university found that the graduate committed research misconduct and rescinded his doctoral degree.

As the investigation was being finalized, the graduate copied files on a flash drive, renamed them as the missing data files, and deleted them, in hopes a new forensic review would uncover them. He also registered a web domain with a name similar to a real IT

forensics firm and used this domain to email a forged letter with fake letterhead to the university official conducting the investigation. After university IT specialists uncovered the deception, the graduate confessed in a letter to the university. We accepted the university's report and concurred with its findings. Based on the evidence, we recommended NSF:

- Make a finding of research misconduct;
- Issue a letter of reprimand;
- Debar the graduate for 3 years;
- Require completion of interactive responsible conduct of research training; and
- For 4 years (concurrent with the debarment plus 1 year afterward):
 - Require certifications and assurances,
 - Bar the former student from NSF participation as a peer reviewer, advisor, or consultant, and
 - Require a data management plan for any NSF proposal on which the graduate is a participant.

NSF Management Actions on Previously Reported Research Misconduct Investigations

Based on our recommendations, NSF adjudicated seven research misconduct investigations reported in previous semiannual reports. Except where noted, each case resulted in NSF making a finding of research misconduct, issuing a letter of reprimand, and requiring responsible conduct of research training. NSF also took additional significant actions in response to our recommendations, as summarized below:

- In the case of a PI who obtained another researcher's proposal through the *Freedom of Information Act* and used it as a template,¹⁷ NSF required that the PI submit certifications and assurances for 3 years and barred the PI from participating as an NSF peer reviewer, advisor, or consultant for 3 years.
- In the case of a PI who plagiarized text from three sources into three NSF proposals,¹⁸ NSF required that the PI submit certifications and assurances for 1 year and barred the PI from serving as an NSF reviewer, advisor, or consultant for 1 year.
- In the case of a former associate professor who engaged in 11 instances of falsification in 2 papers supported by NSF funding,¹⁹ NSF required that the professor submit certifications, assurances, and a data management plan for 6 years. NSF also barred him from serving as an NSF reviewer, advisor, or consultant for 6 years. NSF did not accept our recommendation to debar the professor for 3 years.
- In the case of a PI who claimed a figure he copied into an NSF proposal as his own,²⁰ NSF required that the PI submit certifications and assurances for 2 years and barred

¹⁷ September 2020 SAR, p. 7

¹⁸ September 2020 SAR, p. 6

¹⁹ March 2020 SAR, p. 9

²⁰ September 2020 SAR, p. 8

him from serving as an NSF reviewer, advisor, or consultant for 2 years. The PI subsequently appealed, and NSF's final adjudication is pending.

- In the case of a postdoctoral researcher (postdoc) who falsified data in a published paper and then left the university,²¹ NSF debarred the postdoc for 3 years. Additionally, NSF required, for 5 years, that the postdoc submit a data management plan, certifications, and assurances; and barred him from serving as an NSF reviewer, advisor, or consultant for 5 years.

Administrative Investigations

Our office investigates a variety of allegations that are not pursued as criminal or civil matters or do not meet the strict definition of research misconduct. These cases, which are resolved administratively, include allegations such as misallocation of grant funds, violations of human and animal subjects' regulations, violations of peer review confidentiality, conflicts of interest, or employee misconduct.

Site Visit Reviewer Failed to Disclose Business Negotiations With NSF-Funded Center

We received allegations that a peer reviewer participating in a site visit of an NSF-funded center did not disclose that her company had been negotiating with the center to sell it equipment until one workday before the site visit began. When asked to participate in the site visit, the reviewer asked the program director about her potential conflicts because she was familiar with the project and was concerned that it was not using the optimum equipment. She also stated her research could be viewed as competing with the center's. The program director responded that having a challenge could be constructive, so his invitation stood. Before the site visit, the reviewer completed a Conflict-of-Interests and Confidentiality Statement (NSF Form 1230P). The reviewer made four disclosures on the form. Three were about potential research conflicts discussed with the program director, and the fourth was that her husband had a spin-off company that delivered equipment to researchers.

Additionally, the program director asked the review panel at least twice before the site visit to disclose anything that would affect their impartiality to conduct the site visit review. The reviewer made no further disclosures.

We reviewed the company's webpage and found the reviewer was listed as a co-founder and board member of the company. We also identified evidence that others involved with the company had been negotiating with the center to sell it equipment, until their bids were declined the Friday before the site visit was to start on Monday. We interviewed the PI who confirmed the company's interactions with the center. The reviewer said she asked her husband about any bids just before leaving town for the site visit. The reviewer never disclosed her role as co-founder or board member of the company, nor did she disclose that the company was negotiating an equipment sale with the center.

We concluded the reviewer failed to disclose on her NSF Form 1230P, and to the program director leading the site visit, her full connection to a company in which she has a financial

²¹ September 2020 SAR, p. 6

interest, and that the company was engaged in discussions with the center to sell it equipment. Based on the evidence, we recommended NSF take appropriate action and inform us of the outcome. NSF's final decision is pending.

Peer Review

During this semiannual period, our Office of Audits successfully passed external peer review for the year ending September 30, 2020. The review was conducted by the Railroad Retirement Board OIG, which found that the Office's quality control system provided reasonable assurance that it complied with professional standards and applicable legal and regulatory requirements.

Federal audit organizations performing work in accordance with Government Auditing Standards must have an external peer review by reviewers independent of the organization every 3 years. The reviews are conducted in accordance with guidelines established by the Council of the Inspectors General on Integrity and Efficiency and focus on the audit organization's quality control system. A quality control system includes the office's organizational structure as well as policies and procedures that facilitate compliance *with Generally Accepted Government Auditing Standards*. On external peer reviews, audit organizations can receive a rating of pass, pass with deficiencies, or fail. The Office of Audits received a rating of pass. A copy of the final peer review report is posted on our [website](#).

The scheduled peer review for our Office of Investigations has been delayed due to the pandemic and is expected to begin in spring 2022.

Statistical Tables

Audit Data

Table 1. Audit Reports Issued with Recommendations for Better Use of Funds

		Dollar Value
A.	For which no management decision has been made by the commencement of the reporting period	\$0
B.	Recommendations that were issued during the reporting period	\$0
C.	Adjustments related to prior recommendations	\$0
Subtotal of A+B+C		\$0
D.	For which a management decision was made during the reporting period	\$0
	i. Dollar value of management decisions that were consistent with OIG recommendations	\$0
	ii. Dollar value of recommendations that were not agreed to by management	\$0
E.	For which no management decision had been made by the end of the reporting period	\$0
F.	For which no management decision was made within 6 months of issuance	\$0

Table 2. Audit Reports Issued with Questioned Costs²²

		Number of Reports	Questioned Costs	Unsupported Costs
A.	For which no management decision has been made by the commencement of the reporting period	13	\$3,909,439	\$472,059
B.	That were issued during the reporting period	6	\$2,646,443	\$1,126,512
C.	Adjustment related to prior recommendations	0	\$0	\$0
Subtotal of A+B+C		19	\$6,555,882	\$1,598,571
D.	For which a management decision was made during the reporting period	1	\$20,776	\$0
	i. Dollar value of disallowed costs		\$20,776	N/A
	ii. Dollar value of costs not disallowed		\$0	N/A
E.	For which no management decision had been made by the end of the reporting period	18	\$6,535,106	\$1,598,571
F.	For which no management decision was made within 6 months of issuance	12	\$3,888,663	\$472,059

²² Unsupported costs are a subset of questioned costs.

Table 3. Reports Issued (by OIG and Independent Public Accounting Firms)

Report No./ Date Issued	Title	Questioned Costs	Un-supported Costs	Better Use of Funds	No. of Recs.
21-1-001 01/07/21	<i>Performance Audit of Incurred Costs on EPSCoR Awards - University of Kansas Research Center, Inc.</i>	\$1,550,054	\$897,971	\$0	11
21-1-002 12/17/20	<i>Performance Audit of Incurred Costs - Texas A&M University</i>	\$137,558	\$0	\$0	24
21-1-003 1/13/21	<i>Performance Audit of Incurred Costs on EPSCoR Awards - University of Wyoming</i>	\$256,351	\$213,577	\$0	15
21-1-004 1/15/21	<i>Performance Audit of Incurred Costs - University of Florida</i>	\$640,723	\$0	\$0	17
21-1-005 3/31/21	<i>Performance Audit of the Implementation of OMB COVID-19 Flexibilities - University of Alaska Fairbanks</i>	\$28,606	\$14,964	\$0	10
21-1-006 3/31/21	<i>Performance Audit of the Implementation of OMB COVID-19 Flexibilities - University of Kentucky Research Foundation</i>	\$33,151	\$0	\$0	2
21-2-001 11/13/20	<i>Audit of the National Science Foundation's Fiscal Years 2020 and 2019 Financial Statements</i>	\$0	\$0	\$0	0
21-2-002 11/20/20	<i>Performance Audit of the National Science Foundation's Information Security Program for FY 2020</i>	\$0	\$0	\$0	8
21-6-001 11/20/20	<i>Report No. OIG 21-6-001, Review of NSF's Plans and Procedures for Employees' Return to Headquarters</i>	\$0	\$0	\$0	0
21-6-002 3/23/21	<i>GONE Act Risk Assessment: NSF's Grant Closeout Process</i>	\$0	\$0	\$0	0
Unnum-bered 2/11/21	<i>Government Charge Card Letter from NSF OIG</i>	\$0	\$0	\$0	0
Total	11 Reports	\$2,646,443	\$1,126,512	\$0	87

Table 4. Reports Issued before October 1, 2020²³ with Unimplemented Recommendations as of March 31, 2021 (Summary Table)

Year	Number of Reports with Unimplemented Recommendations	Number of Unimplemented Recommendations	Dollar Value of Aggregate Potential Cost Savings ²⁴
2017	1	1	N/A
2019	9	113	\$1,964,008
2020	13	195	\$1,945,431
Total	23	309	\$3,909,439

Table 5. Reports Issued before October 1, 2020, for Which No Management Decision Has Been Made by March 31, 2021, Including the Aggregate Potential Cost Savings of Those Recommendations (Detailed Table)²⁵

Report No./ Date Issued	Topic/Type of Audit	No. of Recs without Mgmt. Decision	Why Mgmt. Decision Has Not Been Made	Desired Timetable for Mgmt. Decision	Aggregate Potential Cost Savings
19-1-008 4/17/19	University of Utah Incurred Cost Audit	12	Resolution delayed - awaiting further awardee response.	9/30/2021	\$42,157
19-1-010 5/2/19	University of Maryland College Park Incurred Cost Audit	19	Resolution delayed - awaiting completion of a priority indirect cost rate negotiation.	6/30/2021	\$357,108
19-1-011 4/30/19	University of Delaware Incurred Cost Audit	12	Draft management decisions require additional review before finalizing.	9/30/2021	\$426,667
19-1-013 5/1/19	University of Pennsylvania Incurred Cost Audit	18	Resolution delayed due to University non-responsiveness.	6/30/2021	\$265,957

²³ NSF has commented on all reports within 60 days of receipt.

²⁴ Aggregate potential savings are "questioned costs" if the recommendations have not been resolved, and "sustained costs" if the recommendations have been resolved.

²⁵ This table shows only recommendations that are unimplemented because they are unresolved, either because NSF has not provided corrective action plans, or NSF and OIG have not agreed on the adequacy of the proposed corrective actions. Table 4 includes additional reports/recommendations because it includes the reports with unresolved recommendations shown in Table 5, plus reports with resolved recommendations that have not yet been implemented.

19-1-016 8/8/19	Ohio State University Incurred Cost Audit	22	Resolution delayed – awaiting completion of a priority indirect cost rate negotiation.	6/30/2021	\$502,587
19-1-017 9/13/19	Oregon State University Incurred Cost Audit	24	Draft management decisions require additional review before finalizing.	9/30/2021	\$369,532
20-1-001 1/10/20	University of Colorado Boulder Incurred Cost Audit	15	Resolution delayed by diminished capacity and transition of staff during pandemic.	9/30/21	\$79,831
20-1-004 7/13/20	University of North Carolina at Chapel Hill Incurred Cost Audit	43	Resolution delayed by diminished capacity and transition of staff during pandemic.	9/30/21	\$744,671
20-1-005 7/23/20	University of Houston Incurred Cost Audit	30	Resolution delayed by diminished capacity and transition of staff during pandemic.	9/30/21	\$133,305
20-1-006 8/5/20	Temple University Performance Audit	4	Resolution delayed by diminished capacity and transition of staff during pandemic.	6/30/21	\$5,969
20-1-007 8/11/20	Yale University Incurred Cost Audit	36	Resolution delayed by diminished capacity and transition of staff during pandemic.	9/30/21	\$251,973
20-1-008 8/31/20	Duke University Incurred Cost Audit	48	Resolution delayed by diminished capacity and transition of staff during pandemic.	9/30/21	\$708,906
Total	12 reports	283			\$3,888,663

Investigations Data

Table 6. Investigative Case Activities²⁶

Referrals to DOJ Criminal Prosecutors (individuals and entities counted separately for all referrals)	9
Referrals to Criminal State/Local Authorities	0
Indictments/Criminal Information	3
Arrests	0
Criminal Convictions/Pleas	2
Referrals to DOJ Civil Prosecutors	
Referrals to DOJ Civil Prosecutors	3
Referrals to Civil State/Local Authorities	0
Civil Settlements/Judgements/Compliance Plans	2
Investigative Reports Issued to NSF Management for Action	
Investigative Reports Issued to NSF Management for Action	15
Research Misconduct Findings Issued by NSF	5
Governmentwide Suspensions/Debarments/Voluntary Exclusions ²⁷	9
Administrative Actions taken by NSF (Includes sanctions related to findings of research misconduct, suspension/termination of awards or employee misconduct)	32
Total Investigative Recoveries (includes funds returned to NSF, restitution, fees, proceeds from civil settlements and funds put to better use)	
Total Investigative Recoveries (includes funds returned to NSF, restitution, fees, proceeds from civil settlements and funds put to better use)	\$3,206,020
Substantiated Whistleblower Retaliation	
Substantiated Whistleblower Retaliation	0
Substantiated Agency Interference	
Substantiated Agency Interference	0

Table 7. Investigative Case Statistics²⁸

	Preliminaries	Investigations
Cases Active at Beginning of Period	3	138
Cases Opened this Period	6	31
Cases Closed this Period	7	38
Cases Active at End of Period	2	131

²⁶ For "Investigative Reports Issued to NSF Management for Action" we count only investigative reports issued to NSF that include recommendations for administrative action (e.g. findings of research misconduct, imposition of governmentwide suspension or debarment, or suspension/terminations of awards). We count recommendations for each individual and entity separately.

²⁷ In one case, NSF debarred an individual during this semiannual period, but the debarment effective date was in a prior semiannual period.

²⁸ Research misconduct statistics will be reported on our website.

About the National Science Foundation

NSF is an independent federal agency created by Congress in 1950 “[t]o promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes” (Pub. L. No. 81-507). NSF leadership has two major components: a director who provides oversight of NSF staff and management responsible for program creation and administration, merit review, planning, budget, and day-to-day operations; and a 24-member National Science Board to establish the overall policies of the Foundation.

With a budget of approximately \$8.3 billion (FY 2020), NSF is the funding source for approximately 25 percent of all federally supported basic research conducted by America’s colleges and universities. Each year, NSF supports an average of about 200,000 scientists, engineers, educators, and students at universities, laboratories, and field sites throughout the United States and the world.

About the NSF Office of Inspector General

The NSF Office of Inspector General promotes effectiveness, efficiency, and economy in administering the Foundation’s programs; detects and prevents fraud, waste, abuse, and whistleblower reprisal within NSF or by individuals who receive NSF funding; and identifies and helps to resolve cases of research misconduct. 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 NSB and Congress, the Office is organizationally independent from the Foundation.

Connect with Us

For more information or questions, please contact us at oigpublicaffairs@nsf.gov. Follow us on Twitter at [@nsfoig](https://twitter.com/nsfoig). Visit our website at oig.nsf.gov.

Report Fraud, Waste, Abuse, or Whistleblower Reprisal

- File an online report: <https://www.nsf.gov/oig/report-fraud/form.jsp>
- Email: oig@nsf.gov
- Anonymous Hotline: 1.800.428.2189
- Mail: 2415 Eisenhower Avenue, Alexandria, VA 22314 ATTN: OIG HOTLINE

Photo Credit

Front cover image: QtraxDzn/Shutterstock.com