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Semiannual Report to Congress



National Science Foundation
Office of Inspector General
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About the National Science Foundation

The National Science Foundation (NSF) is an independent Federal agency created by Congress in 1950 “to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense....” NSF leadership has two major components: a director who oversees NSF staff and management responsible for program creation and administration, merit review, planning, budget, and day-to-day operations; and a 25-member National Science Board (NSB) to establish the overall policies of the foundation.

With a budget of approximately \$8.1 billion (Fiscal Year 2019), NSF is the funding source for approximately 27 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 (OIG) promotes effectiveness, efficiency, and economy in administering the Foundation’s programs; detects and prevents fraud, waste, and abuse within NSF or by individuals who receive NSF funding; and identifies and helps to resolve cases of research misconduct. 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.

Credit:

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From the Inspector General

I am pleased to present our semiannual report, which summarizes the work and accomplishments of our office during the second half of fiscal year 2019.

In this report, we focus on the impact of our work on the Foundation and how our findings have inspired action to improve the Foundation's efforts to promote the progress of science; to advance the national health, prosperity, and welfare; and to secure the national defense.

Our work continues to reflect our commitment to helping NSF be an effective steward of taxpayer dollars. For example, during this reporting period, our work led to nearly \$6 million in potential savings to taxpayers, including \$3.9 million in questioned costs and \$1.9 million in investigative recoveries.

Equally important, our oversight work promotes effectiveness, efficiency, and integrity in NSF programs and grants. For example, as a result of our report on NSF's controls to prevent misallocation of major facility expenses, NSF agreed to strengthen its oversight activities, including requiring major facility recipients with ongoing construction to create segregation of funding plans.

Notably, during this reporting period, a former professor and founder of two Small Business Innovation Research companies was sentenced to time served (a combined 3 months in jail and 2 years home confinement), and 2 years supervised release. Following a bench trial in September 2018, the founder was convicted of conspiracy and three counts of false statements for submitting proposals to NSF for research he knew had already been done in China. (He intended to use the grant funds for other company projects.) He was also convicted of obstruction for providing falsified timesheets during the investigation. The founder and his companies were suspended Government-wide.

We appreciate the support of NSF management and staff from across the Foundation and look forward to our continued partnership with NSF, the National Science Board, and Congress to fulfill our mission. We also look forward to continuing our work with the Council of the Inspectors General on Integrity and Efficiency on important issues that cut across the Government in the years to come.

Allison C. Lerner

Investigations

The Office of Investigations is dedicated to promoting efficiency and effectiveness 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 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 Government-wide suspension or debarment.

FORMER PROFESSOR INDICTED FOR EMBEZZLEMENT

We received information that a university professor was inappropriately directing NSF award funds to his wife's company. Our investigation revealed that NSF funds were paid to a media company, which was directed to develop websites for the university's NSF-funded center and for the professor's wife's company. The professor resigned his university position and was subsequently charged by the local prosecutor's office with one felony count of embezzlement. Our investigation is ongoing.

COMPANY AGREED TO PAY MORE THAN \$30,000 TO SETTLE FALSE CLAIMS ACT LITIGATION

We investigated a company that received an NSF award through the Small Business Technology Transfer (STTR) Program. The principal investigator (PI) on the award violated the program's primary employment requirement by not disclosing full-time employment as an associate professor at a university. The company entered into a civil settlement with DOJ and agreed to pay more than \$30,000 to resolve the allegations.

NSF SUSPENDED AWARDS; PI LEFT COUNTRY AND RESIGNED FROM UNIVERSITY

We learned that a PI at a university was involved in a foreign government talent recruitment program and may have additional overseas employment. We subpoenaed the PI for information related to positions of employment or consulting outside of the university. The PI only provided an application related to a foreign government talent recruitment program, despite open source information suggesting the PI was already a program member and was employed overseas. Based on our recommendation, NSF suspended the PI's awards pending the outcome of our investigation. Subsequent to the award suspension, the PI left the U.S. and resigned from the university. Our investigation is ongoing.

NSF TERMINATED AWARDS TO PI WHO FAILED TO DISCLOSE FOREIGN AFFILIATIONS

We interviewed a PI as a part of an investigation and subsequently determined that the PI had been untruthful in the interview regarding his affiliation with a foreign government talent recruitment program and institutions outside of his U.S. university. The PI also failed to disclose his position at a foreign institution in his NSF proposals. During the course of our investigation, the PI resigned from his position at his U.S. university for a position overseas. Based on our recommendation, NSF terminated the PI's active awards, resulting in more than \$500,000 in funds put to better use.¹

NSF SUSPENDED AWARDS PENDING FURTHER INVESTIGATION

An NSF PI was indicted on charges of wire fraud and program fraud for an alleged scheme to defraud NSF, another Federal agency, and a U.S. research university. The PI received Federal grant money, including salary, while he was employed by an overseas research university, an alleged conflict of interest that was not disclosed to the U.S. research university. Based on our recommendation, NSF suspended three awards involving the PI, pending completion of our investigation.

NSF SUSPENDED AWARD TO PI WHO SUBMITTED FALSIFIED RECORDS

We investigated allegations of irregularities at an NSF-funded center at a university. During an interview, the PI admitted to submitting falsified records to NSF as part of the annual project report, which served as the basis for releasing the next funding increment. Based on our recommendations, NSF suspended the award until the conclusion of our investigation and prohibited the PI from serving as an NSF reviewer, panelist, or advisor for 3 years. The case has been accepted by a U.S. Attorney's Office for criminal prosecution and civil action.

SENIOR NSF EMPLOYEE TARGET OF PHISHING SCAM

We investigated a phishing scam where an individual purporting to be an NSF employee sent fabricated information to NSF resulting in the diversion of the paycheck of a senior NSF employee into an unauthorized account. We located the holder of the unauthorized account and learned that the account holder allowed someone else to use her account and was unaware of the phishing scam. We coordinated recovery efforts, and the account holder returned more than \$2,500, nearly half of the diverted funds, to NSF.

NSF FINDS NO PROHIBITED REPRISAL RELATED TO RECOVERY ACT FUNDS

An employee of an NSF awardee alleged that the awardee denied him access to his laboratory and to adequate office space in reprisal for reporting misuse of NSF award funds made with American Recovery and Reinvestment Act (ARRA) funds. We investigated the allegation under an ARRA provision that protects employees from reprisals for reporting misuse of ARRA funds, and grants investigative authority to the awarding agency's Office of Inspector General. The employee disclosed to the awardee and to NSF

¹ As used here, "funds put to better use" is consistent with the definition in 5 USC app. 3 § (f)(4)(B) (pertaining to more efficient use of funds through de-obligation, which frees them up for other uses).

that ARRA-funded construction violated local building ordinances. More than a year and a half after the disclosures, the awardee closed the employee's laboratory for health and safety violations and locked the employee out of the lab for more than 2 years. As required by ARRA, we submitted a report of investigation to NSF management. We received 2 extensions from the employee to the original 180-day time period to complete our investigation — one for 180 days and a second for 30 days. NSF did not find a sufficient basis to conclude that the employee had been subjected to a prohibited reprisal.

EMPLOYEE OF NSF AWARDEE ALLEGES REPRISAL FOR WHISTLEBLOWING

We investigated an allegation of reprisal under 41 U.S.C. 4712, which protects employees from reprisals for reporting misuse of Federal award funds and grants investigative authority to the awarding agency's Office of Inspector General. Specifically, we investigated an allegation that an NSF awardee terminated an employee for reporting errors in the calculation of the awardee's indirect cost rate. The employee alleged that she reported to her supervisors deficiencies in how the awardee's software tracked certain expenses and personnel locations, which were used to calculate the indirect cost rate paid to the awardee on all its Federal awards. Within a few days of her alleged disclosures, the awardee terminated the employee following verbal altercations with her supervisor and another employee. As required by the statute, we submitted a report of investigation to NSF management. NSF's determination is pending.

PROCUREMENT INVESTIGATION IDENTIFIED AGENCY RISKS

We investigated an allegation that a Government contractor received non-public information from NSF staff and consequently gained an unfair advantage during a procurement for an NSF contract. Our investigation revealed that although some non-public information may have been shared, procurement-sensitive information was not provided to the contractor. We found that some NSF employees were unsure about the type of information that may be disclosed to contractors during the various stages of a procurement. Some employees were also unsure about the type of information that may be disclosed when an outside entity, including a contractor, is benchmarking NSF. In our report to NSF, we concluded that this lack of certainty creates risks for NSF and for NSF employees. NSF is considering actions to mitigate the risks we identified.

Actions Resulting from Previously Reported Program Integrity Investigations

SBIR/STTR COMPANY FOUNDER AND FORMER UNIVERSITY PROFESSOR SENTENCED

We previously reported that a former university professor and founder of two Small Business Innovation Research (SBIR)/STTR companies was arrested and charged with conspiracy and indicted on charges including false statements, false claims, wire fraud, conspiracy, and obstruction. The founder and his companies were ultimately suspended Government wide. After a 4-day bench trial, the founder was convicted of conspiracy and three counts of false statements for submitting NSF proposals for which the work was already completed (the intended funds would be used for other purposes) and for

obstruction for providing falsified timesheets during the investigation.² During this reporting period, the founder was sentenced to time served (a combined 3 months in jail and 2 years home confinement), and 2 years supervised release. DOJ's press release regarding this case can be found [here](#).

PI PLEAD GUILTY TO WIRE FRAUD AND NSF TERMINATED AWARDS

We previously reported³ NSF's decision to prohibit a PI from serving as a reviewer based on evidence that the PI, who held positions at a university and an SBIR company, submitted false statements about award expenditures and about the eligibility of company PIs on SBIR awards from NSF and the U.S. Department of Health and Human Services. The PI also failed to disclose his position and funding at the SBIR company when submitting proposals through the university and created timesheets in response to an IG subpoena. During this period, the PI pled guilty to one count of wire fraud and accepted a Government-wide voluntary exclusion of 3 years as part of his plea agreement. The PI paid restitution of more than \$35,000, of which almost \$20,000 was returned to NSF. Based on our recommendation, NSF terminated the PI's university and SBIR awards, resulting in more than \$900,000 in funds put to better use. DOJ's press release regarding this case can be found [here](#).

SBIR PI SENTENCED FOR CONVERSION

We previously reported a PI's indictment on four counts of wire fraud and subsequent plea to conversion of Federal funds to personal use, followed by his payment of restitution.⁴ During this period, the PI was sentenced to 3 months imprisonment followed by 1 year of supervised release. DOJ's press release regarding this case can be found [here](#).

HUSBAND, WIFE, AND THEIR COMPANY INDICTED FOR WIRE AND MAIL FRAUD SCHEME

We previously reported⁵ that a husband and wife were indicted on one count of wire fraud for a scheme to defraud NSF of more than \$1 million in SBIR/STTR funds made to their company. Based on our recommendation, NSF suspended Government wide the husband and wife, their SBIR/STTR company, and three other companies or entities associated with them. During this reporting period, the husband, wife, and their company were charged by superseding indictment with an additional count of mail fraud for alleged false information they caused to be mailed in response to an IG subpoena. The investigation is ongoing, and trial is scheduled for October 2019.

NSF PROHIBITED PI FROM SERVING AS NSF PANELIST OR REVIEWER

We previously reported⁶ that a university voluntarily agreed to terminate an award and return funds in response to our recommendation to suspend NSF awards. The matter concerned a PI who took two extended overseas absences without providing the required advanced notice to NSF and held concurrent employment overseas without disclosing the

² September 2017 Semiannual Report (SAR), p. 13; March 2018 SAR, p. 11; March 2019 SAR, pp. 9-10

³ September 2018 SAR, pp. 9-10

⁴ March 2016 SAR, p. 21; September 2018 SAR, p. 11; March 2019 SAR, p. 11

⁵ September 2018 SAR, p. 7

⁶ September 2018 SAR, p. 10

overseas position to NSF. We subpoenaed the PI for documentation related to the overseas position, which appeared to be connected to a foreign government talent recruitment program, but the PI failed to provide any responsive documentation. We learned the PI served as an NSF reviewer between the two extended overseas absences. Although the PI is no longer employed by the university, we recommended the PI be barred from serving as an NSF panelist or reviewer for 3 years. NSF concurred with our recommendation and also barred the PI from serving as a consultant for NSF.

SBIR/STTR COMPANIES AND PRINCIPALS DEBARRED

In previous semiannual reports, we described a joint investigation that found three SBIR/STTR awardee companies received duplicate funding from multiple Federal agencies for the same work, and misrepresented their locations, facilities, and equipment, among other items. We previously reported the termination of awards to the companies involved and the guilty pleas entered by the owner of one of the companies to one count of wire fraud, and three of the companies to conspiracy to commit wire fraud. We also previously reported the sentencing of the parties and a civil complaint seeking damages from the company principals beyond what they previously paid as restitution in the criminal case.⁷ During this period, based on our recommendation, NSF debarred the three companies and three of their principals for 5 years each.

NSF DEBARS SBIR COMPANY AND OWNER FOR MISREPRESENTATIONS

We previously reported⁸ NSF's decision to cancel the final payment of \$200,000 to an SBIR company because the company and its owner made false representations about the identity of the PI in an SBIR proposal and in subsequent communications with NSF after the SBIR grant was awarded. This reporting period, based on our recommendation, NSF debarred the company and its owner for 3 years.

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. During this reporting period, institutions took actions against individuals who committed research misconduct, including termination of employment and the dismissal of a Ph.D. student. 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.

⁷ March 2016 SAR, p. 21; September 2018 SAR, pp. 10-11; September 2019 SAR, pp. 10-11

⁸ September 2018 Semiannual Report, p. 9; March 2019 Semiannual Report, p.14

GRADUATE STUDENT FALSIFIED EXAMPLES TO SUPPORT HER CONCLUSIONS

An NSF-funded graduate student submitted a manuscript containing falsified examples to a computer-science conference. The conference reviewer rejected the manuscript because he could not verify several examples of asserted code defects and repairs in public code repositories. The graduate student admitted to embellishing examples to better illustrate support for the results. The university's subsequent investigation concluded that the student falsified a variety of unspecified data. A university office overseeing student conduct determined the discipline should be a 1-year suspension. The student appealed the suspension, and the university held a hearing, during which the student admitted to embellishing a specific example. The judicial panel concluded the student's embellishment constituted misconduct and recommended a 6-month suspension. The student again appealed the suspension, and the university president upheld the finding and sanction.

We found deficiencies in the university's investigation report, conducted an independent investigation, and found additional examples that the student likely falsified. We sought an assessment by experts at NSF as to whether those likely falsifications constituted research misconduct. The experts concluded that they did, as did the falsification on which the university made a finding.

We recommended NSF require completion of interactive Responsible Conduct of Research (RCR) training and for 3 years require certifications and assurances; bar the graduate student as a peer reviewer, advisor, or consultant; and require a data management plan. NSF chose not to implement any additional actions beyond the letter of reprimand.

PI PLAGIARIZED FROM AWARDED NSF PROPOSALS RECEIVED FROM A COLLEAGUE

A PI plagiarized text into an NSF proposal from two awarded NSF proposals he received in confidence from a colleague. The PI said he simply erred in not differentiating their content from his own in the final proposal. We referred the matter to the PI's university, which concluded the PI committed plagiarism. It required the PI complete training, work with a mentor, conduct student training, be barred from submitting NSF proposals for at least 3 years, and create a pre-submission review process. The university's report, however, did not address the elements of a research misconduct finding.

Our independent investigation determined the PI intentionally committed plagiarism, deeming it a significant departure from accepted practices. We also determined that the PI provided conflicting and inaccurate information. Specifically, we found that the colleague provided the PI with the awarded proposals with the understanding that the PI would name him a project advisor on a collaborative proposal. We further concluded that the PI did not inform the colleague or the colleague's institution that they would no longer be named in the proposal due to varied and contradictory reasons the PI provided.

We recommended NSF debar the PI for 1 year, certify compliance with university-imposed requirements, and bar him as an NSF peer reviewer, advisor, or consultant for NSF and require him to provide certification and assurance for 4 years.

RESEARCHER FALSIFIED DATA IN MULTIPLE PUBLICATIONS

A postdoctoral researcher falsified data in multiple papers and progress reports to NSF. The university investigation committee determined that four articles containing the researcher's data required either correction or retraction. The committee determined the researcher had a "practice of searching his notebook and scans for bands with the same intensity patterns that he could use as surrogate" figures as they were more aesthetically pleasing. The committee concluded the researcher committed research misconduct by intentionally fabricating data. They recommended the researcher be demoted, write a report outlining specific guidelines for data presentation from journals specific to his discipline, attend ethics and RCR courses, repeat experiments for the figures in question, and be subject to a strict mentoring program.

We concurred with the university committee that the researcher committed research misconduct and recommended NSF require him for 2 years to submit certifications and assurances, bar him from serving as a reviewer, advisor, or consultant for NSF and provide proof that he completed the university mandated training.

ASSISTANT PROFESSOR INCORPORATED STUDENT'S PLAGIARIZED SUMMARY IN PROPOSAL

We investigated a university assistant professor who copied a student's summary of a separate project into her proposal as a description of preliminary work. The entire summary was copied from two published articles. The university determined that, as the PI on the proposal, the assistant professor was responsible for the content of the proposal and recklessly plagiarized the two articles and knowingly plagiarized her student's summary. We concurred and recommended that NSF require 1 year of certifications and impose a 1-year ban on serving as an NSF reviewer, advisor, or consultant.

PI PLAGIARIZED IN NSF CAREER PROPOSAL

An NSF PI plagiarized text from nine source documents into his NSF Faculty Early Career Development Program (CAREER) proposal. The university investigation committee determined the PI's actions met the definition of plagiarism but concluded his actions were "inappropriate but not malicious." The committee recommended the PI's proposals and publications be monitored for a period of 2 years and that he receive mentoring for 2 years.

We conducted our own investigation because the university committee did not adequately assess intent, determine whether the PI's actions were a significant departure from accepted practices, or determine whether the PI had a pattern of plagiarism. We determined the PI knowingly committed plagiarism, which was a significant departure from the accepted practices of his research community, but found no evidence of a pattern. We recommended that NSF direct the PI to complete RCR training. We also recommended that NSF require the PI to submit certifications and assurances for 1 year and bar the PI from serving as an NSF peer reviewer, advisor, or consultant for 1 year.

Actions by NSF Management on Previously Reported Research Misconduct Investigations

Based on our recommendations, NSF adjudicated four 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 RCR training. NSF also took additional significant actions in response to our recommendations, as summarized below:

- In the case of a graduate student who falsified data in two experiments, we previously reported NSF had proposed debarring the former graduate student for 1 year.⁹ During this period, the debarment became final. In addition, for 4 years, the former graduate student must submit certifications and assurances for each document submitted to NSF; is prohibited from serving as an NSF reviewer, advisor, or consultant; and must submit a detailed data management plan and provide annual certification that the plan is being followed.
- In the case of a former professor who falsified and fabricated figures, blamed students, and created a fictitious colleague,¹⁰ NSF proposed a debarment of 3 years and will require the professor to complete a course on research mentoring within 5 years of the final debarment. For 8 years from when the debarment becomes final, the professor must submit certifications and assurances and is barred from serving as a reviewer, advisor, or consultant for NSF. The professor will also be required to submit a detailed data management plan with each proposal and annually certify that the plan's requirements are being followed.
- In the case of a former NSF program officer (PO) who plagiarized from a declined NSF proposal,¹¹ NSF initially made a finding of research misconduct and proposed to debar the PO for 2 years. The PO appealed both the research misconduct finding and the proposed debarment. Ultimately, the PO and NSF reached an agreement under which the PO agreed to a 2-year voluntary exclusion from Government-wide funding. NSF agreed to vacate the research misconduct finding, but still required the PO to submit certifications and assurances. The agreement also provided that, for 6 years, the PO 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.
- In the case of a PI who falsified letters of support and plagiarized in proposals,¹² we previously reported that NSF made a finding of research misconduct; barred the PI from serving as an NSF reviewer, advisor, or consultant for 3 years; and required the PI to submit certifications and assurances with each document submitted for 3 years. The PI appealed the actions, asking that NSF shorten the time that certifications and assurances would be required. NSF upheld the 3-year timeframe.

⁹ September 2018 SAR, pp. 12-13; March 2019 SAR, p. 16

¹⁰ March 2019 SAR, pp. 15-16

¹¹ September 2018 SAR, p. 13; March 2019 SAR, pp. 16-17

¹² September 2018 SAR, p. 13; March 2018 SAR, p. 17

Administrative Investigations

Our office investigates a wide 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 (but are not limited to) misallocation of grant funds, violations of human and animal subjects' regulations, violations of peer review confidentiality, conflicts of interest, and employee misconduct.

NSF-FUNDED POSTDOCTORAL RESEARCHER SABOTAGED GRADUATE STUDENT'S RESEARCH

A university investigation found that a postdoctoral researcher, who was supported by NSF funding, added decontaminant to a graduate student's cells and cultures, rendering them useless for experimental purposes. Video surveillance of the laboratory recorded the incidents. The researcher admitted he added decontaminant to the graduate student's biological materials and tried to rationalize his actions, but the university did not find his explanation credible. The university concluded he committed research misconduct under its policy, which includes sabotage. It prohibited the postdoctoral researcher from any future affiliation with the university and will only provide limited information to potential employers.

The postdoctoral researcher's actions did not meet NSF's definition of research misconduct because no data were affected. Based on the evidence provided by the university, including the researcher's testimony, we concluded his actions were of such a serious and compelling nature that it affected his present responsibility. Therefore, we recommended NSF debar the researcher for 2 years to safeguard NSF and Federal Government funds. We also recommended NSF require the researcher to complete an RCR training program and provide documentation of the program's content before receiving future support from NSF. NSF's action is pending.

REVIEWERS VIOLATED CONFIDENTIALITY OF NSF REVIEW PROCESS

In two separate cases, we investigated NSF reviewers who breached confidentiality in violation of their obligations as panelists or *ad hoc* reviewers by providing NSF proposals to graduate students in their laboratories and instructing them to provide written reviews. In the first case, the NSF reviewer used significant portions of the graduate students' written reviews in 12 proposal reviews he subsequently submitted to NSF. The NSF reviewer did not obtain prior permission from the cognizant program officers to share the proposals. We recommended NSF send a letter of reprimand to the NSF reviewer notifying him that he violated NSF's proposal confidentiality rules and bar him from serving NSF in an advisory capacity, including as a panelist or *ad hoc* reviewer, for an appropriate time period. NSF prohibited the NSF reviewer from participating as an NSF peer reviewer, advisor, or consultant for 2 years and instructed him to disclose the NSF prohibition to other Federal agencies upon request to review proposals.

In the second case, an NSF reviewer shared seven proposals with two graduate students and instructed them to provide written reviews. When contacted, the reviewer admitted he shared the proposals with students, but stated he independently reviewed and drafted his own proposal reviews. His statement was contradicted by records illustrating that the

graduate students wrote four reviews, which the reviewer slightly modified and submitted to NSF as his own reviews. We recommended NSF send a letter of reprimand to the reviewer notifying him that he violated NSF's proposal confidentiality rules and prohibit him from serving as a reviewer, advisor, or panelist for an appropriate period of time. NSF barred the reviewer from serving as a reviewer, advisor, or panelist for 4 years and required that he disclose this prohibition to other Federal agencies if requested to review proposals for them.

Actions by NSF Management on Previously Reported Administrative Investigations

NSF POSTDOCTORAL FELLOWSHIP TERMINATED

Previously we reported on a postdoctoral researcher whose NSF fellowship award was suspended.¹³ Our investigation confirmed that the researcher, with culpable intent, withheld information about her active university fellowship in her application to NSF and subsequent acceptance of the NSF fellowship. We also concluded that the researcher, with culpable intent, chose to mask the NSF fellowship from university officials by claiming it was a standard research grant. As a result, the researcher was able to simultaneously receive a salary stipend from two fellowships for a short period of time. The NSF program only allows postdoctoral researchers to be funded by one fellowship. Therefore, she was in violation of the NSF program guidelines. We referred this matter to the U.S. Attorney's Office for both criminal and civil prosecution, but it declined in lieu of an administrative remedy. Based on our investigation report, NSF terminated the fellowship, which resulted in more than \$100,000 of funds put to better use.

FURTHER RECOVERIES AND ACTIONS IN SERIAL SPENDING CASES

We previously reported¹⁴ on a PI who appeared to have spent five NSF awards in chronological order, using the oldest award to fund all of his NSF research projects. We wrote to the PI's institution with our preliminary findings and the institution investigated. The PI stated he was unaware that funds for a project funded by an agency could not be used to pay expenses on different projects funded by the same agency. The institution returned almost \$200,000, of which more than \$25,000 was a reduction for an active award. The institution stated its intention to train the PI and all staff in his department, add workshops for junior faculty, increase periodic training at all faculty meetings, and explore the creation of a tool to facilitate allocation for faculty. We recommended additional oversight measures for this PI to the NSF divisions to which the PI submitted proposals in the last 2 years.

In another previously reported case,¹⁵ four of a PI's grants were terminated or allowed to expire after our analysis of his grant spending led NSF to reject the PI's request to transfer the grants to another institution. To further protect Federal funds, our office worked with the applicable programs to institute measures to assist in preventing further

¹³ September 2018 SAR, p. 16

¹⁴ September 2017 SAR, p. 23

¹⁵ March 2015 SAR, p. 24; September 2018 SAR, p. 15

issues with the PI. The NSF programs agreed to consider awarding only continuing grants for the PI whereby the grant is funded in annual increments instead of all at once. They also agreed to request detailed spending plans from the PI and, when necessary, work with the awardee to review spending before approving a no-cost extension.

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 economically, effectively, and efficiently. We also audit grants, contracts, and cooperative agreements funded by the Foundation. 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 of NSF Programs and Operations

AUDIT OF NSF'S CONTROLS TO PREVENT MISALLOCATION OF MAJOR FACILITY EXPENSES

We found that although NSF conducted oversight of the construction and operations of major facility projects, it did not provide sufficient guidance to ensure recipients consistently allocated construction and operations expenses to the correct award or adequately documented allocation decisions. As a result, NSF cannot assure that recipients always spent construction and operations funds for authorized purposes. Additionally, NSF's major facility acceptance process does not require NSF to assess and document the impact of moving uncompleted tasks from the construction award to the operations award. Consequently, NSF may not be fully aware of the financial and scientific impact of uncompleted construction tasks on operations.

We made recommendations to help ensure major facility construction and operations expenses are allocated to the correct award. We also recommended that NSF establish a process for assessing the cost and scientific impact of uncompleted construction tasks and require an independent panel to review construction completion and facility readiness prior to the acceptance of a major facility. NSF agreed to take corrective actions, including requiring major facility recipients with ongoing construction to create segregation of funding plans. NSF also plans to require a final construction review.

AUDIT OF NSF'S COMPLIANCE WITH THE IMPROPER PAYMENTS ELIMINATION AND RECOVERY ACT FOR FY 2018

The *Improper Payments Elimination and Recovery Act of 2010*¹⁶ (IPERA) requires agencies to periodically review and identify programs and activities that may be susceptible to significant improper payments. The Office of Management and Budget (OMB) requires Federal agencies to institute a systematic method of reviewing all programs and activities, identify programs susceptible to significant improper payments, and assess risk against

¹⁶ As amended by the *Improper Payments Elimination and Recovery Improvement Act of 2012* (IPERIA)

factors that are likely to contribute to improper payments.¹⁷ In addition, each OIG must annually review improper payment reporting in the Agency Financial Report or Performance and Accountability Report and assess six requirements, all of which an agency must meet to be compliant with IPERA.

Kearney & Company (Kearney), under a contract with us, conducted a performance audit¹⁸ of NSF's compliance with IPERA for FY 2018. Kearney found that NSF complied with IPERA reporting requirements for FY 2018. However, the auditors determined that NSF's risk assessment and reporting need improvement to ensure that NSF thoroughly assesses and documents its risk of improper payments.

Kearney made four recommendations to NSF aimed at strengthening its risk assessment process; all four recommendations were resolved. NSF's planned corrective actions include reviewing and updating the IPERA survey and risk assessment procedures, developing written procedures to synchronize activities between various NSF offices, and ensuring applicable credit activity is reported as payment recapture amounts in the Agency Financial Report.

NSF'S CONTROLS OVER ADVOCACY

In June 2018, we received a letter from Senators Rand Paul, Ted Cruz, James Lankford, and James Inhofe, which requested that we investigate specific concerns related to five NSF grants. According to the letter, the four senators were concerned that NSF "...issued several grants which seek to influence political and social debate rather than conduct scientific research."

We conducted a preliminary review to determine whether NSF followed its merit review process for the five awards. We also assessed whether the decisions to fund these awards were inconsistent with restrictions on political advocacy that extend to NSF grants. We found that NSF followed its merit review process for the five awards. We did not find any evidence that limitations on political activity were violated. Accordingly, we decided not to proceed with an audit.

Audits of NSF Award Recipients

OIG staff and contractors completed audits of 12 NSF award recipients that expended more than \$1.9 billion of NSF funds during the respective audit periods. In addition, during our ongoing audit of Established Program to Stimulate Competitive Research (EPSCoR) awards, we alerted NSF about two award recipients' use of funds.

The audits assessed the allowability, allocability, and reasonableness of costs charged to NSF and resulted in more than \$3.9 million of questioned costs. The findings included questioned equipment, travel, salary, and participant support costs; purchases near or after the end date of the award; and inappropriately allocated indirect costs. The auditors recommended that the award recipients strengthen controls over the areas that led to the

¹⁷ OMB Memorandum M-18-20, Appendix C to Circular No. A-123, *Requirements for Payment Integrity Improvement*, June 26, 2018

¹⁸ [OIG 19-2-005](#), May 10, 2019

questioned costs. The auditors also recommended that NSF recover the questioned costs, as follows.

REPORTS OF AWARD RECIPIENTS THIS SEMI ANNUAL PERIOD

Report No.	Award Recipient	Questioned Costs
19-1-006	University of Minnesota	\$73,260
19-1-007	Arizona State University	\$1,178,488
19-1-008	University of Utah	\$42,157
19-1-009	University Corporation for Atmospheric Research	\$171,804
19-1-010	University of Maryland College Park	\$357,108
19-1-011	University of Delaware	\$426,667
19-1-012	University of Texas at Austin	\$283,613
19-1-013	University of Pennsylvania	\$265,957
19-1-014	University of Cincinnati	\$18,526
19-1-015	Woods Hole Oceanographic Institution	\$0
19-1-016	Ohio State University	\$502,587
19-1-017	Oregon State University	\$369,532
19-6-001	University of South Carolina at Columbia - EPSCoR	\$83,388
19-6-002	University of Delaware - EPSCoR	\$166,336
Total		\$3,939,423

Source: NSF OIG

Audit Resolution

NSF STRENGTHENED ITS OVERSIGHT OVER NATIONAL ECOLOGICAL OBSERVATORY NETWORK CONSTRUCTION AND OPERATION AWARDS

We closed the final recommendation for our report¹⁹ that identified weaknesses in NSF’s oversight over Battelle Memorial Institute’s (Battelle) award for the construction and operation of the National Ecological Observatory Network (NEON). NSF obtained Battelle’s required drawdown schedule for its NEON management fee, conducted a financial viability assessment of Battelle, and reviewed NEON’S relationship to its subcontractor Battelle Ecology, Inc. to ensure consistent treatment of costs. Finally, NSF developed policies and procedures for NSF’s use and oversight of management reserve during major facility construction.

THE NSB FURTHER STRENGTHENED CONTROLS OVER COMPLIANCE WITH SUNSHINE ACT

We closed all recommendations for our audit report²⁰ that identified further improvements the NSB and NSB Office (NSBO) could take to ensure their compliance with the *Government in the Sunshine Act* (Pub. L. No. 94–409). The NSBO revised its *Sunshine Act Guide* to require staff to archive closed transcripts on the NSB’s shared drive, updated executive secretary talking points to ensure quality transcripts, and developed a flowchart

¹⁹ [OIG 17-3-004](#), May 12, 2017
²⁰ [OIG 19-2-004](#), March 8, 2019

to assist staff in determining whether proposed NSB retreat agenda items fall within the definition of a Sunshine Act meeting.

NSF UPDATES POLICIES CONCERNING CONFERENCE PLANNING, APPROVAL, AND REPORTING TO ADDRESS OIG RECOMMENDATIONS

We closed all recommendations for our audit report²¹ that recommended NSF strengthen controls over conference planning, approval, and reporting. NSF updated its policies and issued a best practices guide, which details guidelines on reporting conference costs. The updated policies also require NSF directorates and offices to report actual costs and paid NSF attendance for all conference costs rather than estimates. The best practices guide contains additional guidance on obtaining hotel and contractor receipts; reviewing meal and incidental charges for NSF travelers to conferences; and minimizing inappropriate, unnecessary, and wasteful expenses. NSF also clarified conference report data for three prior annual reports that it posted on its website.

NSF STRENGTHENED ITS IPERA RISK ASSESSMENT PROCESS

Our May 2016 audit²² of NSF’s compliance with IPERA recommended that NSF take corrective actions to improve its IPERA risk assessment process. Although NSF complied with IPERA requirements in FY 2015, its risk assessment provided limited insight into its susceptibility to improper payments.

In response to our recommendations, NSF leveraged its annual OMB Circular A-123 risk assessment process as input for the IPERA risk assessment, considered the results of award financial monitoring testing as part of its IPERA risk assessment, and developed several policies and procedures to address the recommendations made during the audit. As of May 2019, all recommendations associated with this audit report were closed.

RESOLUTION OF REPORTS OF NSF AWARD RECIPIENTS

Eleven previous audits of award recipients were resolved this period. In addition to sustaining questioned costs, NSF generally required the award recipients to implement recommended actions to strengthen applicable internal controls. NSF also sustained questioned costs identified during our ongoing audit of EPSCoR award recipients.

REPORTS OF AWARD RECIPIENTS RESOLVED THIS SEMIANNUAL PERIOD

Report No.	Issue Date	Award Recipient	Sustained Questioned Costs
18-1-006	9/11/2018	Massachusetts Institute of Technology	\$331,114
19-1-001	12/19/2018	Northwestern University	\$51,461
19-1-004	2/28/2019	Princeton University	\$55,889
19-1-005	3/13/2019	University of Tennessee-Knoxville	\$34,094
18-1-007	9/27/2018	University of Montana	\$367,779
18-1-005	9/6/2018	National Academy of Sciences	\$90,902

²¹ [OIG 17-2-007](#), November 4, 2016

²² [OIG 16-3-005](#), May 12, 2016

18-1-003	5/18/2018	North Carolina State University	\$49,192
19-1-002	12/21/2018	University of Wyoming	\$207,276
19-1-003	2/25/2019	Colorado State University	\$3,486
19-1-009	4/26/2019	University Corporation for Atmospheric Research	\$171,804
19-1-015	6/11/2019	Woods Hole Oceanographic Institution	N/A
19-6-001	6/10/2019	University of South Carolina at Columbia - EPSCoR	\$83,388
19-6-002	6/2/2019	University of Delaware* - EPSCoR	\$166,336
Total			\$1,612,721

Source: NSF OIG

*Delaware identified an additional \$323,984 of misapplied indirect costs on NSF awards and has begun repaying NSF.

Reviews of Single Audits

QUALITY OF SINGLE AUDITS CONTINUES TO DECREASE

Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (Uniform Guidance)²³ provides audit requirements for state and local governments, colleges and universities, and non-profit organizations receiving Federal awards. Under the guidance, covered entities that expend \$750,000 or more a year in Federal awards must obtain an annual organization-wide audit that includes opinions on the entity's financial statements and compliance with Federal award requirements. Non-Federal auditors, such as public accounting firms and state auditors, conduct these single audits. Single Audit reports are useful to NSF in planning advanced monitoring site visits and other post-award monitoring efforts. Accordingly, we conduct desk reviews on all reporting packages for which NSF is the cognizant or oversight agency for audit. During a desk review, we review the audit reporting package, but not the underlying audit documentation, to determine whether the reporting package meets Uniform Guidance and applicable Government and non-Government auditing standards.

During this period, we conducted desk reviews of 40 audit reporting packages,²⁴ covering more than \$956 million in total Federal expenditures, including nearly \$502 million in NSF direct expenditures. As shown in Figure 1, we found that 27 (68 percent) fully met Federal reporting requirements. This represents a decrease in quality from the last semiannual period (ending March 31, 2019),²⁵ when 72 percent of reports fully met Federal reporting requirements and a continued decline from 79 percent reported for the September 2018 semi-annual period.²⁶

²³ 2 CFR Pt. 200

²⁴ The audits were conducted by 31 different independent public accounting firms.

²⁵ March 2019 SAR

²⁶ September 2018 SAR

FIGURE 1. PERCENTAGE OF SINGLE AUDITS THAT MET FEDERAL REPORTING REQUIREMENTS



Source: NSF OIG Semiannual Reports

Regarding the 13 audit reporting packages (32 percent) this period that did not fully meet Federal reporting requirements, we found that:

- 5 audit reports contained the Schedules of Expenditures of Federal Awards (SEFA) that did not include required information to allow for identification of awards received from or passed-through to other non-Federal entities and/or did not adequately describe the significant accounting policies used to prepare the schedule;
- 4 audit reports failed to accurately identify the major programs being tested;
- 4 reporting packages were submitted to the Federal Audit Clearinghouse with inaccurate Data Collection Forms;
- 3 audit reports contained inaccurate or missing report language; and
- 3 audit reports disclosed findings without all required elements.

For errors that potentially impacted the reliability of the audit reporting packages, we contacted the auditors and award recipients, as appropriate, for explanations of each of the potential errors. In most cases, the auditors and award recipients provided adequate explanations or additional information to demonstrate compliance with Federal reporting requirements. However, in two instances, we rejected the audit reporting packages due to the significance of the quality deficiencies. After we completed our review of the reporting packages, we issued a letter to each auditor and award recipient informing them of the results of our review and the specific issues on which they should work to improve the quality and reliability of future audits. We also sent copies of the letters to each award recipient's other Federal funding agencies for their use in monitoring and oversight. In the two instances where we rejected the audits, we referred the auditors to the American Institute of Certified Public Accountants' Professional Ethics Division and Peer Review Program for additional review.

QUALITY CONTROL REVIEW FINDS SINGLE AUDIT OF UNIVERSITY CORPORATION FOR ATMOSPHERIC RESEARCH ACCEPTABLE

Quality Control Reviews (QCR) consist of on-site reviews of auditor documentation in support of Single Audits. QCRs are an important tool for determining whether Single Audits meet Government auditing and reporting requirements, and for helping to improve future audit quality. Firms can receive a QCR rating of Pass, Pass with Deficiencies, or Fail.

During this period, we issued one report on our QCR of a Single Audit for a large NSF award recipient. We rated the Single Audit conducted on University Corporation for Atmospheric Research for the year ended December 31, 2018, as Pass. The audit documentation contained no quality deficiencies or only minor quality deficiencies that do not require corrective action for the audit under review or future audits. We found nothing to indicate that the auditors' planning, performance, and documentation of audit work were inappropriate or unreliable. During our review, we provided verbal recommendations to the audit team for improvement in future audits regarding audit documentation.

Statistical Data

Investigations Data

April 1, 2019 – September 30, 2019

Table 1. Investigative Case Activities

Referrals ²⁷ to DOJ Criminal Prosecutors	8
Referrals to Criminal State/Local Authorities	0
Indictments/Criminal Information	4
Arrests	0
Criminal Convictions/Pleas	1
Referrals to DOJ Civil Prosecutors	3
Referrals to Civil State/Local Authorities	0
Civil Settlements/Judgements/Compliance Plans	1
Investigative Reports Issued to NSF Management for Action ²⁸	18
Research Misconduct Findings Issued by NSF	2
Government-wide Suspensions/Debarments/	12
Administrative Actions taken by NSF ²⁹	29
Total Investigative Recoveries ³⁰	\$1,911,065
Substantiated Whistleblower Retaliation	0
Substantiated Agency Interference	0

Table 2. Investigative Case Statistics

	Preliminaries	Investigations
Cases Active at Beginning of Period	1	173
Cases Opened this Period	6	36
Cases Closed this Period	6	54
Cases Active at End of Period	1	155

²⁷ We count referrals of individuals and entities separately.

²⁸ We count only Investigative Reports issued to NSF that include recommendations for administrative action (e.g. findings of Research Misconduct, imposition of Government-wide Suspension or Debarment, or suspension/terminations of awards). We count recommendations for each individual and entity separately.

²⁹ This includes sanctions related to findings of Research Misconduct, suspension/termination of awards or employee misconduct.

³⁰ This includes funds returned to NSF, restitution, fees, and funds put to better use.

Research Misconduct (RM) Statistics FY 2010 – FY 2019

Table 3. Allegations

FY	RM Allegations Received (Including allegations made against both funded and declined NSF proposals.)			
	Plagiarism	Fabrication	Falsification	Total ³¹
2010	90	4	10	104
2011	85	17	15	117
2012	96	9	8	113
2013	84	10	12	106
2014	38	7	5	50
2015	67	12	12	91
2016	36	9	12	57
2017	38	1	7	46
2018	39	4	4	47
2019	30	1	2	33
Totals	603	74	87	764

Table 4. Investigations

FY	RM Allegations Investigated (Including case activity defined as "Inquiry" in the RM regulation.)			
	Plagiarism	Fabrication	Falsification	Total ³²
2010	70	3	3	76
2011	58	15	8	81
2012	80	7	5	92
2013	80	8	11	99
2014	36	7	5	48
2015	67	12	12	91
2016	25	5	10	40
2017	27	1	5	33
2018	34	3	3	40
2019	19	1	0	20
Totals	496	62	62	620

³¹ Trends cannot be identified across the reporting period (FY 2010-2019) because we used different methods of capturing allegation data in three periods: 1) FY 2010–2012; 2) FY 2013–2015 with new Statutory Law Enforcement authority; and 3) FY 2016–to date, with a new investigative case management system. Periodically, we also conducted proactive assessments looking for plagiarism, which inflated the number of plagiarism allegations in some years. We conducted the last proactive assessment in 2013, but allegations resulting from it were still being identified in 2014.

³² A small number of allegations involving RM result in criminal or civil investigations; we have not included those allegations in this report.

Note: Tables 3 and 4 only provide information about allegations that come to our office's attention and those we investigate. Thus, they may not reflect the total universe of research misconduct related to NSF proposals or awards. Some of the figures in the tables may differ from previous semiannual reports due to additional allegations being identified during an investigation.

Table 5. Investigative Outcomes³³

FY ³⁴	Total RM Findings				Included Debarment ³⁵
	Plagiarism	Fabrication/ Falsification	Multi ³⁶	Total	
2010	9	2	0	11	2
2011	14	3	0	17	5
2012	18	0	0	18	2
2013	13	3	0	16	6
2014	19	7	0	26	7
2015	10	2	0	12	6
2016	12	5	0	17	4
2017	5	8	0	13	5
2018	7	6	1	14	7
2019	2	4	0	6	2
Totals	109	40	1	150	46

³³ The outcomes reported in this table cannot be linked to the allegations and investigations by fiscal year, due to the varying amount of time it takes to investigate and adjudicate allegations of RM.

³⁴ These data reflect RM findings by NSF in the fiscal year of the finding.

³⁵ The debarment action taken by NSF typically lags NSF's RM finding (debarment is a multi-step process with a separate appeal), but in this display we link the debarment data to the date of the RM finding.

³⁶ "Multi" indicates that an allegation of plagiarism and either fabrication or falsification was substantiated in our investigation. NSF makes a single finding of RM, even if we refer multiple allegations to them.

Audit Data

Table 6. 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 7. Audit Reports Issued with Questioned Costs

		Number of Reports	Questioned Costs	Unsupported Costs ³⁷
A.	For which no management decision has been made by the commencement of the reporting period	10	\$3,824,720	\$530,571
B.	That were issued during the reporting period	13	\$3,939,423	\$653,973
C.	Adjustment related to prior recommendations	0	\$0	N/A
Subtotal of A+B+C		23	\$7,764,143	\$1,184,544
D.	For which a management decision was made during the reporting period	12	\$2,243,139	\$601,091
	i. Dollar value of disallowed costs	N/A	\$1,612,721	N/A
	ii. Dollar value of costs not disallowed	N/A	\$630,418	N/A
E.	For which no management decision had been made by the end of the reporting period	11	\$5,521,004	\$583,453
F.	For which no management decision was made within 6 months of issuance	1	\$2,003,109	\$12,868

³⁷ Unsupported costs are a subset of questioned costs.

Table 8. Reports Issued (By OIG and independent public accounting firms)

Report Number/ Date Issued	Title	Questioned Costs	Un-supported Costs³⁸	Better Use of Funds	No. of Recs.
19-1-006 April 5, 2019	<i>Performance Audit of Incurred Costs - University of Minnesota</i>	\$73,260	\$16,571	\$0	9
19-1-007 April 15, 2019	<i>Performance Audit of Incurred Costs – Arizona State University</i>	\$1,178,488	\$41,553	\$0	21
19-1-008 April 17, 2019	<i>Performance Audit of Incurred Costs – University of Utah</i>	\$42,157	\$21,286	\$0	12
19-1-009 April 26, 2019	<i>Performance Audit of Incurred Costs – University Corporation for Atmospheric Research</i>	\$171,804	\$0	\$0	13
19-1-010 May 2, 2019	<i>Performance Audit of Incurred Costs – University of Maryland College Park</i>	\$357,108	\$1,918	\$0	19
19-1-011 April 30, 2019	<i>Performance Audit of Incurred Costs – University of Delaware</i>	\$426,667	\$229,539	\$0	12
19-1-012 April 29, 2019	<i>Performance Audit of Incurred Costs – University of Texas at Austin</i>	\$283,613	\$42,947	\$0	20
19-1-013 May 1, 2019	<i>Performance Audit of Incurred Costs – University of Pennsylvania</i>	\$265,957	\$149,765	\$0	18
19-1-014 June 3, 2019	<i>Performance Audit of Incurred Costs – University of Cincinnati</i>	\$18,526	\$0	\$0	4
19-1-015 June 11, 2019	<i>Performance Audit of Incurred Costs – Woods Hole Oceanographic Institution</i>	\$0	\$0	\$0	1
19-1-016 August 8, 2019	<i>Performance Audit of Incurred Costs – Ohio State University</i>	\$502,587	\$67,006	\$0	22

³⁸ Unsupported costs are a subset of questioned costs.

19-1-017 September 13, 2019	<i>Performance Audit of Incurred Costs – Oregon State University</i>	\$369,532	\$0	\$0	24
19-2-005 May 10, 2019	<i>Performance Audit over the Improper Payments Elimination and Recovery Act</i>	\$0	\$0	\$0	4
19-2-006 June 21, 2019	<i>Audit of NSF's Controls to Prevent Misallocation of Major Facility Expenses</i>	\$0	\$0	\$0	6
19-6-001 June 10, 2019	<i>Alert Memo Regarding University of South Carolina at Columbia</i>	\$83,388	\$83,388	\$0	1
19-6-002 July 16, 2019	<i>Alert Memo Regarding University of Delaware's NSF EPSCoR Award</i>	\$166,336	\$0	\$0	1
19-8-003 July 26, 2019	<i>Quality Control Review of KPMG LLP's FY 2018 Single Audit of the University Corporation for Atmospheric Research</i>	\$0	\$0	\$0	0
N/A April 30, 2019	<i>NSF's Controls over Advocacy</i>	\$0	\$0	\$0	0
Total	18 Reports Issued	\$3,939,423	\$653,973	\$0	187

Table 9. Reports Issued before April 1, 2019³⁹ with Unimplemented Recommendations as of September 30, 2019 (Summary Table)

Year	Number of Reports with Unimplemented Recommendations	Number of Unimplemented Recommendations	Dollar Value of Aggregate Potential Cost Savings ⁴⁰
2015	1	1	N/A
2016	1	14	\$2,003,109
2017	2	3	N/A
2018	3	22	\$416,971
2019	6	44	\$300,745
Total	13	84	\$2,720,825

³⁹ NSF has commented on all reports within 60 days of receipt.

⁴⁰ Aggregate potential savings are "questioned costs" if the recommendations have not been resolved, and "sustained costs" if the recommendations have been resolved.

Table 10. Reports Issued before April 1, 2019, for Which No Management Decision Has Been Made by September 30, 2019, Including the Aggregate Potential Cost Savings of Those Recommendations (Detailed Table)⁴¹

Report Number/ Date Issued	Topic/Type of Audit	No. of Recs without Mgmt. Decision	Why Mgmt. Decision Has Not Been Made	Desired Time-table for Mgmt. Decision	Aggregate Potential Cost Savings
16-1-004 Feb. 11, 2016	University of Washington/ Incurred Cost Audit	14	Delay due to competing oversight priorities and need for additional awardee response.	11/15/19	\$2,003,109
19-2-003 Dec. 21, 2018	Inap-propriate Use of Electronic Devices/ Performance Audit	2	NSF's proposed correction actions required consultation with different offices and stakeholders within the agency, and that requires additional time.	12/1/19	\$0
Total	2 reports	16			\$2,003,109

⁴¹ 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 9 includes additional reports/recommendations because it includes the reports with unresolved recommendations shown in Table 10, plus reports with resolved recommendations that have not yet been implemented.

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