

National Science Foundation
OFFICE OF INSPECTOR GENERAL



SEMIANNUAL
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CONGRESS
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About the National Science Foundation:

The National Science Foundation (NSF) is charged with supporting and strengthening all research disciplines, and providing leadership across the broad and expanding frontiers of science and engineering knowledge. It is governed by the National Science Board, which sets agency policies and provides oversight of its activities.

NSF invests approximately \$7 billion per year in a portfolio of more than 50,000 research and education projects in science and engineering, and is responsible for the establishment of an information base for science and engineering appropriate for development of national and international policy. Over time other responsibilities have been added including fostering and supporting the development and use of computers and other scientific methods and technologies; providing Antarctic research, facilities and logistic support; and addressing issues of equal opportunity in science and engineering.

And the Office of Inspector General:

NSF's Office of Inspector General (OIG) promotes economy, efficiency, and effectiveness in administering the Foundation's programs; detects and prevents fraud, waste, and abuse within the NSF or by individuals that 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 National Science Board and Congress, the Office is organizationally independent from the agency.

About the Cover...

Photographs of Blue-Footed Boobies in the Galapagos Islands taken by Brian Hess, Senior Special Agent.

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From the Inspector General

This Semiannual Report to Congress highlights the activities of the Office of Inspector General (OIG) for the six months ending September 30, 2015. During this period, our investigative staff closed 66 investigations, had two research misconduct cases result in findings by NSF, and recovered over \$5 million for the government. In addition, 16 audits and reviews were issued, which questioned a total of \$1.9 million of claimed costs.

This semiannual summarizes what the OIG considers to be the most serious management and performance challenges facing the Foundation. We have focused on seven issue areas that reflect fundamental program risk and are likely to require management's attention for years to come:

- Establishing Accountability over Large Cooperative Agreements
- Managing NSF's Business Operations
- Managing the IPA Program
- Moving NSF Headquarters to a New Building
- Managing the U.S. Antarctic Program
- Improving Grant Administration
- Encouraging the Ethical Conduct of Research

We lead with a challenge focused on accountability over large cooperative agreements, an area on which we have focused much attention since 2011. During this reporting period, NSF management identified a potential \$80 million cost overrun for the NEON project, which is carried out under one of the Foundation's largest cooperative agreements. In a September 2015 alert memo we examined factors that contributed to that overrun, including the fact that the Foundation did not increase its monitoring of expenditures in the wake of significant problems with the project's cost proposal. In the coming months we plan to examine other large cooperative agreements to ascertain if they are experiencing similar problems.

In the wake of the troubles with the NEON project, both NSF management and the National Science Board have taken steps to improve management of the project. NSF management has increased its oversight of the project, requiring detailed monthly expenditure reports among other things, while the NSB has established an *ad hoc* Task Force on NEON Performance and Plans. Beyond addressing issues identified in the NEON project, during the reporting period the Foundation also made substantial revisions to improve its Large Facilities Manual and continued to work with our auditors to address recommendations we have made in this area.

Finally, as I write this message, the National Academy of Public Administration is finalizing its report on NSF's use of cooperative agreements to support large scale investment in research—an effort requested by both NSF management and the NSB. These actions and our continuing audit focus on this area illustrate the importance that all parties—NSF management, the NSB and OIG—place on ensuring accountability over the Foundation's high dollar, high risk large cooperative agreements.

This semiannual also includes our report identifying opportunities to improve the health and safety of U.S. Antarctic program participants. Among other things, we recommended creating a process to track and respond to misconduct by all program participants and improving USAP pharmacy operations.

Our investigative work continues to result in monetary recoveries. During this reporting period, more than \$1.6 million recovered from a Massachusetts university to settle allegations that it violated federal requirements to exercise oversight and control of NSF award funds was returned to NSF, where it can be used to support other projects. In another example, a community college returned more than \$158,000 in misspent funds.

We also report on the outcomes of several investigations of fraud in the Small Business Innovation Research program (SBIR), which provides grants to small business to undertake research with high technical risk and potentially high commercial value. As a result of one case, two Florida scientists were sentenced to fifteen and thirteen years in prison following conviction for defrauding the SBIR program. In a second case, a Massachusetts small business agreed to a \$625,000 settlement as a result of misrepresenting its timekeeping and accounting systems before receiving two SBIR awards worth more than \$998,000. Finally, our research misconduct investigations disclosed falsification of dissertation data and plagiarism in a proposal requesting support to write a textbook, among other things.

Our work reflects my office's sustained commitment to helping NSF be an effective steward of taxpayer dollars and benefits from the support of NSF management across the Foundation. We look forward to our continued partnership with NSF and the Congress to fulfill this goal.

Allison C. Lerner

Report Highlights

Since 2011, the OIG has recommended that NSF address serious financial risks in the National Ecological Observatory Network (NEON) project. Our examination of factors contributing to NEON's potential \$80 million cost overrun found that despite clear evidence of significant problems in NEON's cost proposals, NSF did not enhance its monitoring of the construction process or its oversight of expenditures as the project progressed. As a result of the cost overrun, NEON has had to de-scope the project and therefore, taxpayers will not receive all the promised scientific benefits of the project.

Our audit of NSF's oversight and the Antarctic Support Contractor's performance in ensuring the health and safety of Antarctic program participants identified opportunities for improvement. For example, we found that because NSF does not have a process to identify, respond to, and track all misconduct incidents (including those involving NSF employees and contractors), it cannot be certain that all incidents are reported and responded to appropriately. We also found that workplace safety could be enhanced if required breathalyzer tests are administered when alcohol abuse is suspected.

A Massachusetts university agreed to pay \$2.7 million to settle allegations that it violated federal regulations requiring universities to exercise oversight and control over NSF funds. NSF will be able to use more than \$1.6 million of the recovered funds for other projects.

Two scientists were sentenced to fifteen and thirteen years in prison and ordered to pay \$10.6 million in restitution for misrepresenting their facilities, costs, employees, and eligibility of PIs in proposals to NSF and other federal agencies for Small Business Innovation Research (SBIR) awards. They also used the stolen identities of prominent researchers to create false endorsements of proposals and falsified documents in response to the investigation.

Our research misconduct investigations included a graduate student who falsified data in a dissertation, plagiarism in a proposal requesting support to write a textbook, and a co-PI who plagiarized from three sources in an awarded proposal.

NSF's Management of Potential \$80 Million Cost Overrun for NEON

The National Ecological Observatory Network (NEON) is a \$433.8 million construction project, which was to be constructed over a five-year period from August 2011 through July 2016. In June 2015, NEON management notified NSF that the project was facing a potential cost overrun of \$80 million. It is noteworthy that NSF was originally informed by NEON that the potential cost overrun would be \$27 million. In response to questions from NSF, NEON increased that estimate to \$40 million, then to \$60 million and finally to \$80 million.

Certain factors that could have contributed to increased project costs, such as permitting delays and environmental requirements, may have been outside of NSF's control. However, since 2011 OIG has recommended that NSF address serious financial risks in the NEON project. As required by NSF, due to the potential cost overrun, NEON will de-scope the project, which includes decreasing the number of sites from 96 to 81, decreasing instrumentation, and removing an experimental component of the project. As a result, taxpayers will not receive all the promised scientific benefits of the project.

We examined the factors contributing to the potential cost overrun. Beginning in 2011, auditors identified serious flaws in NEON's proposed construction budget. Auditors issued three inadequacy memos over a four-month period in 2011 and issued an adverse opinion on the proposed budget in 2012 because the proposal did not form an acceptable basis for negotiation of a fair and reasonable price. The proposal included \$154 million in questioned and unsupported costs (36 percent of the total budget). None of the proposed cost elements for labor, overhead, equipment, and other costs reconciled to the supporting data in the proposed budget.

In light of the concerns about the NEON cost proposal, NSF should have increased its oversight of costs as the project progressed. Instead, once the project was underway NSF did not require adequate evidence that project expenditures were warranted, reasonable, or allowable under NSF and federal requirements.

We have recommended in past audits that NSF require large facilities to submit annual incurred cost submissions and undergo annual incurred costs audits.¹ In its response to the memo NSF stated that NEON was identified as needing an incurred cost audit based on the risk assessment that had been conducted by the agency, which is planned for initiation after completion of the intensive near term activities necessary to ensure the receipt of adequate revised budget and technical information from NEON by December 1, 2015.

However, NSF has not required an incurred cost submission from NEON, nor has it conducted an incurred cost audit of NEON. If NSF had taken either action, NSF could have been able to identify unallowable or poor spending by NEON. In addition, NSF did not require NEON to provide more detail about its spending until May 2015, and NSF has just recently started reviewing transaction level detail associated with expenditures that appeared unusual.

In May 2015, an independent assessment, commissioned by NSF, resulted in an overall inadequate rating for the cost estimate. The assessment stated that the estimate was not sufficient to support NEON's or NSF's financial reporting requirements. Further, the reviewer was unable to assess NEON's work efficiencies or to determine how \$19 million was distributed against the work breakdown structure elements.

In addition, the assessment of NEON's data used to support its estimate disclosed such "widespread data quality issues" and challenges found after reviewing an initial set of samples, that NSF requested that the reviewer discontinue its detailed assessment. The extensive flaws identified by the reviewer raise serious questions about the reliability NEON's estimate of the overrun and of the validity of the actions it proposes to take to address the overrun, such as the \$13 million savings NEON stated it can achieve through "corporate and management efficiencies."

In light of the serious deficiencies identified with the first estimate of costs to complete, NSF is requiring NEON to submit a revised cost estimate to complete construction by December 2015 incorporating the de-scoping required by NSF and a new estimate to complete the project. The deficiencies in NEON's construction budget and in its first estimate for project completion raise significant questions about the value of another estimate prepared by NEON.

¹ Incurred cost submissions, which we have recommended for nearly three years for large cooperative agreements, are important for proper cost monitoring because they provide visibility over claimed costs since they include certified schedules of direct costs and applied indirect expenses. Absent incurred cost submission, NSF cannot adequately monitor expenditure of funds, which heightens the risk that unallowable costs could be charged and go undetected.

Finally, we found that NEON project reports to NSF lack sufficient, reliable information for NSF to manage the project. In addition to problems with oversight of project expenditures, the Earned Value Management (EVM) reports provided by NEON did not give accurate figures for the cost to complete until prompted by NSF based on declining scheduled variance. Based on NEON's EVM and monthly progress reports, NSF was unable to identify the magnitude of the potential budget overrun or the precise reason for the schedule variance.

The NEON project is plagued with problems. NEON is not yet able to provide NSF the accurate information it needs to monitor the project's progress and NSF does not yet have accurate information about how much it will cost to complete the project. Without this information, NSF cannot accurately identify the extent of the potential cost overrun and develop an adequate plan to address it.

At the time of our work, NSF had awarded \$273 million of the estimated \$433 million of total project funding for NEON. It is not too late for NSF to strengthen its oversight of NEON expenditures and to dedicate the resources necessary to ensure that funds are being spent properly. We continue to monitor NSF's management and oversight of the NEON project.

Opportunities Exist to Improve the Health and Safety of U.S. Antarctic Program Participants

Antarctica's extreme environment and relative isolation challenge human health and wellness. Medical care in Antarctica is limited and reducing the risk of injury and illness is dependent on safe work practices and personal conduct. While we found that, in general, NSF's oversight and the Antarctic Support Contractor's (ASC's) performance were effective in ensuring adequate health and safety, we identified four areas for improvement.

First, there is no process to identify, respond to, track, and collect data on all misconduct incidents that occur in USAP, which NSF could use to help prevent future problems and to help ensure that appropriate action is taken to address misconduct. Because there is no requirement or mechanism for reporting misconduct by NSF employees, contractors, subcontractors, and researchers, NSF cannot be certain that all misconduct is being reported and tracked, or what, if any, action was taken in response to the misconduct. Second, we identified opportunities for improving USAP pharmacy operations. Among other things, we found that the pharmacies located at each of the three medical clinics relied on an antiquated system to track medications. As a result, patient safety may not be protected adequately.

We also found that NSF station managers, appointed as Special Deputies, may not have adequate tools and training to perform their law enforcement responsibilities. Because there has been no recent assessment of their training and tools, NSF lacks assurance that special deputies are properly prepared to perform their law enforcement responsibilities in the event of a dangerous or violent situation.

Finally, breathalyzer tests, which contractor policy requires employees to undergo if their supervisor suspects that they are under the influence are rarely administered. Since alcohol abuse has occurred in the USAP program, workplace safety could be enhanced if the requirement for breathalyzer tests was enforced.

NSF agrees with the first recommendation to the extent that NSF is developing a process for sharing information on violations of the Code of Conduct, subject to the complexity of issues presented by the multiple employers involved. The process is expected to provide a means to identify individuals who should be prevented from deploying under the auspices of both NSF's Antarctic and Arctic programs.

With respect to pharmacy operations, NSF does not disagree that a different pharmacy tracking system might have advantages over the current system and that there might be opportunities for improving pharmacy operations, the finding upon which this recommendation arose. NSF notes, however, that no adverse outcomes as a result of current practices, policies, procedures or systems were reported. To that end, NSF agrees with this recommendation to the extent it will confirm with the contractor that the clinics are actively managing drug interactions and making patients aware of drug safety information.

With respect to law enforcement, NSF stated that it has made refresher training periodically and recently available and that it will proceed with its plan to host a law enforcement forum and site visit to Antarctica. Finally, NSF stated in its response that it will either provide funds for these units or direct its contractor to ensure its personnel are following policies regarding calibration of medical equipment.

Control Weaknesses Identified in Federal Demonstration Partnership Labor Effort Reporting Pilots at Two Universities

As agreed to by the Office of Management and Budget (OMB) and the Offices of Inspector General at NSF and the Department of Health and Human Services (HHS), NSF and HHS are auditing implementation of pilot payroll certification systems at four universities: Michigan Technological University (Michigan Tech) and George Mason University (NSF OIG) and University of California - Irvine and University of

California - Riverside (HHS OIG). A capstone report will be prepared when all audits are completed to provide overall results and summarize issues identified at all four universities.

Every year, billions of dollars in federal funds are used to cover salary costs of individuals who work on federal grants. Historically, labor effort reports (sometimes referred to as time and activity reports) have been used as the main support for salaries and wages charged to these grants.

Traditionally labor effort reports are prepared by an individual and show the amount of time that individual charged to the various activities on which he worked during the covered period, including one or more Federal grants or contracts. The individual and/or his direct supervisor, by signing the report, certify the accuracy of the time spent on certain activities. The pilot system involved tracking all of the labor costs by award, with an annual certification by the Principal Investigator.

We conducted audits at two universities—George Mason and Michigan Tech—to determine whether their payroll certification systems provided accountability over federal funds. The audits focused on examining whether the pilot's shift away from certifying 100 percent of an individual's effort put federal funds at increased risk of being allocated improperly, and included the review of a sample of transactions under both the pilot and the current reporting system.

We found that the systems at both institutions generally provided accountability over federal funds. However, we found that both George Mason and Michigan Tech did not always comply with their documentation policies for both the pilot and the current reporting system. For example, at George Mason we found that eleven payroll expense reports in the pilot system (representing 19 sample transactions) were not certified in a timely manner, as required. One report was certified 706 days late and four others were more than 300 days late. We did not identify any late or missing certifications in our samples under the prior system. When effort reports are certified long after work has been completed, there is a higher likelihood that labor will be charged incorrectly.

While we found late certifications at Michigan Tech in our sampled transactions, none of the late certifications occurred under the pilot, and only five certifications out of 68 transactions in the prior system were certified late.

Finally, we identified control weaknesses over Banner, the system both George Mason and Michigan Tech used for payroll allocation under the prior system and the pilot. As a result, the data stored in Banner to support payroll charges may not be secure and could be vulnerable to access by unauthorized users who could modify information.

A primary concern of these audits was to determine whether the fact that the pilot system does not require certifying 100 percent of each employee's effort increased the risk of improper allocations of payroll. We found that full allocations remain recorded and available within both George Mason and Michigan Tech's systems. Nonetheless, when PIs certify the salaries charged to their awards, they do not have records of full payroll allocations for employees who worked on their projects. Visibility over full payroll allocations provides greater assurance that project costs are accurate. Therefore, making full allocations available to PIs would be useful in assuring payroll charges to federal awards are accurate. Additionally, accounting for full allocations of employees' time could be an important control to help ensure that overcharges and inaccurate charges do not occur.

Both institutions generally agreed with the findings and recommendations, and acknowledged that institutions under payroll certification systems must have strong internal controls to ensure payroll charges are adequately supported.

Compliance with the Improper Payments Elimination and Recovery Act

The Improper Payments Elimination and Recovery Act (IPERA) requires agencies to periodically review and identify programs and activities that may be susceptible to significant improper payments and to report on their actions to reduce and recover improper payments. Auditors found that NSF did not comply with two of the six IPERA reporting requirements in the FY 2014 Annual Financial Report. As a result, auditors could not determine whether NSF complied with the remaining four requirements.

With respect to the requirement to conduct a program-specific risk assessment, the auditors found that NSF's risk assessment did not utilize a complete, accurate, and systematic method to determine NSF's risk of significant improper payments. Specifically, the risk assessment did not contain any evidence that seven of the nine required risk factors were considered at the agency level. Among other things, NSF's risk assessment did not consider risk factors such as whether the program was new to the agency, the complexity of the program, and the inherent risk of improper payments in the program. In addition, NSF did not maintain a systematic approach in executing the quantitative portion of the risk assessment.

With respect to the requirement to publish the required IPERA information in the FY 2014 financial report, NSF did not report on improper payments identified and recovered through sources other than payment recapture audits. Although NSF concluded that payment recapture audits were not warranted for grants and contracts, it did not report on recoveries through existing audit activities, such as the grant audit resolution process and cost-incurred audits on high-risk contracts.

As a result of these deficiencies, NSF does not have adequate procedures in place to ensure that it has implemented a complete, accurate, and systematic method for the IPERA risk assessment, as required. The auditors recommended that NSF take appropriate action to improve compliance with IPERA, including executing a full, statistically valid estimate of improper payments. NSF management stated that adjustments that grantees identify and correct through their own internal controls should not be considered improper payments. They are concerned that the findings on grantee adjustments would require changes in NSF's award administration policy. NSF management also acknowledged the identification of opportunities to improve the way in which NSF documents its IPERA risk assessment.

NSF Could Improve Oversight and Management of Travel Cards

Our last audit of NSF's travel card program, conducted in the 2005, found irregular transactions, including using the travel card to pay for personal items and to pay for items that were not preapproved as required, among other things. Since that time, NSF has implemented controls to detect misuse and unauthorized charges on travel cards.

Our audit conducted during this reporting period found that NSF could further strengthen management and oversight of the travel card program to prevent misuse. For example, because NSF had not periodically reviewed merchant category codes, and blocked non-travel-related codes such as doctors, dentists, legal services, schools, and child care services, there was a greater risk of inappropriate charges to travel cards. We also found that NSF was not monitoring whether cardholders who had misused their travel cards had completed required remedial training in proper card use. In addition, charges for travel were often not reviewed in detail for panel and group travel meeting costs, which increased the risk of inappropriate charges.

NSF stated that it agreed that there are opportunities to enhance internal controls over travel cards and that it will continue to strengthen management of the travel card program.

Audits of Four NSF Awardees

Four audits were conducted of NSF awardees that had expended more than \$670 million, of which more than \$55 million was Recovery Act funds, to determine the reasonableness, allowability, and allocability of costs.² Three of those audits reviewed compliance with the Recovery Act; and in all three cases the auditors found that those funds were properly accounted for and segregated, as required by law.

However, the four audits identified more than \$1.8 million of questioned costs. Each of the institutions audited—Indiana University, Florida State University, Stanford University, and Carnegie Mellon University—charged salaries to NSF awards that exceeded NSF’s compensation limit for senior project personnel. Specifically, at Indiana University, auditors questioned \$744,458 of senior-personnel salaries that exceeded the two months of proposal salary allowable under NSF’s policy. Similarly, auditors questioned \$444,966 of excess senior salaries at Florida State, \$124,279 at Stanford, and \$108,819 at Carnegie Mellon.

In response to these findings, all four institutions disagreed with the questioned salary overcharges and asserted that the charges were allowable because NSF policies and subsequent NSF guidance in NSF’s “Frequently Asked Questions” document stated that an awardee, under normal rebudgeting authority, could approve an increase in-person months devoted to the project.

Conflicting guidance has hampered the ability of institutions to properly implement the 2-month rule. As a result, as evidenced by OIG audits, institutions interpret the rule differently and there is an increased likelihood of overcharges and unallowable costs on NSF awards.

In addition to costs questioned for salaries exceeding NSF limits, auditors questioned \$47,116 at Indiana University for costs that were not incurred solely to advance the work funded by the award or were not reasonable because the University spent NSF funds within days of (or in one case, on the day of) award expiration. Other costs questioned at Indiana included over \$22,000 charged for equipment costs that were not well supported or equipment costs which were either unnecessary or did not appear to benefit the NSF award; and nearly \$16,000 in unreasonable travel costs.

Additional questioned costs at Florida State included \$96,702 for unreasonable equipment, material, and maintenance expenses; \$14,090 in unallocable computer and parking charges, and \$3,510 for expenditures near award expiration.

² Expenditure of Recovery Act funds was not covered by the Carnegie Mellon audit.

Other questioned costs at Stanford included \$44,508 for unreasonable and unallowable travel costs; \$84,197 for equipment, travel, instrument usage, and lab supplies that were allocated to NSF awards using unsupported allocation methods; \$72,375 for inadequately supported or improper costs, such as charging all expenses for a computer used for other projects on an NSF award; and \$12,018 for transferring costs on an award with a cost overrun to another NSF award.

Additional questioned costs at Carnegie Mellon included \$19,399 in unallowable salary for a postdoctoral student; \$14,417 in unallowable airfare; and \$7,037 in unallowable relocation expenses.

Auditors recommended that NSF require the institutions to repay the questioned costs. The institutions primarily disagreed with the recommendations pertaining to questioned costs relating to senior personnel salaries. NSF is working to resolve the findings and recommendations.

Gaps Remain in NSF's Management Fee Policy

In response to issues that surfaced about management fees under NSF's cooperative agreements for large facility projects, we included a review of management fees in NSF awards in the FY 2015 audit plan. As an initial step, we provided a white paper to NSF in November 2014, which discussed the historical context giving rise to such fees, current rules and regulations, NSF's policy and practices, and our initial observations, among other things.

In January 2015, we provided NSF with our observations about its draft management fee policy and in September 2015, we provided comments on NSF's final management fee policy. We noted NSF's draft policy took steps to develop a control environment for management fees and acknowledged the historical rationale for such fees, provided some guidance on unallowable costs, and required an up-front determination of need, a description of planned use, and monitoring of actual use.

NSF's final management fee policy contains a number of positive steps toward ensuring greater accountability and transparency over management fees. For example, the policy explicitly recognizes the historical uses of management fees; prohibits the use of management fees for alcohol, lobbying, and tickets to concerts, among other things; creates an audit trail for management fees; and provides NSF with flexibility to reduce management fees based on an awardee's failure to adhere to planned use.

Despite the positive aspects of NSF's final policy, we continue to have some concerns about the agency's control environment for management fees. For example, the final policy omits any consideration of other sources of income in determining the amount of the fee, thereby moving away from the principle that an awardee should only receive a fee based on its demonstrated need to maintain financial viability. Also the frequency of NSF reviews of management fee use is not defined and there is no description of who within NSF would perform the reviews. Finally, the policy should require that the information supporting award and use of management fees be sufficient to withstand any audit that may be undertaken.

NSF Needs Agency Policy to Manage and Oversee Workers' Compensation Cases

The Federal Employees' Compensation Act (FECA) provides for wage loss compensation, medical care, and survivors benefits to government employees for employment-related injuries. The Department of Labor administers the program, but employing agencies are responsible for reimbursing the Department of Labor for their workers' compensation expenses. Therefore, agencies are responsible for overseeing their cases to ensure that charged costs are appropriate.

We reviewed NSF's workers' compensation cases for the one-year period from July 1, 2014 to June 30, 2015. During that time, NSF was charged \$19,723 for medical bills for 11 claimants, \$78,836 for lost wages compensation for 3 claimants, and \$62,375 for death benefits for one fatality. In total, NSF was charged \$160,934³.

We found that NSF does not have any policy or procedures for staff responsible for overseeing the program to follow. Therefore, there were no requirements for staff to annually review the status of employees receiving compensation or to document that such a review had been performed. Also, there were no requirements about what type of documentation should be included in the files for medical payments or compensation cases. As a result, we were unable to evaluate whether NSF's oversight was adequate, and there is a heightened risk of abuse that could go undetected.

Although NSF only had 14 workers' compensation cases at the time of our inspection, the lack of policy and guidance requiring staff to oversee and manage the program raises concern and increases the risk that NSF could pay charges that are not warranted. NSF agreed with our recommendation to develop agency policy and procedures for managing and overseeing its workers' compensation cases.

³ For context, NSF's budget for FY 15 was \$7.344 billion.

Tracking of Contingency Expenditures Needed on Construction Projects

In conjunction with an ongoing incurred cost audit of California Institute of Technology's Advanced Laser Interferometer Gravitational Wave Observatory (ALIGO) project, auditors provided a letter of observations on the \$39 million (19 percent) for contingencies out of total proposed costs of \$205 million for FYs 2008-2015. The auditors found that the Institute did not separately track the use of the contingencies, and that \$19.6 million in budgeted contingency use differed significantly from what was requested and from what NSF approved in six of the seven cases reviewed.

Because contingency spending was not tracked, NSF cannot tell if these funds were used without approval for unauthorized purposes such as cost overruns. This occurred because NSF did not require CalTech to separately track contingency costs in its accounting system. Under these circumstances, the risk of taxpayer funds being potentially misused without controls for detection is increased greatly. The risk of misuse is heightened because NSF does not retain control over contingency funds and does not require awardees to demonstrate a bona fide need for contingency funds that is supported by verifiable cost data.

The findings underscored the importance of tracking how contingency funds are spent and the need for NSF, as a steward of federal funds, to require visibility and accountability over contingency costs to properly manage those funds. The auditors recommended that NSF strengthen its policy with respect to estimating, monitoring, and accounting for contingency expenditures on construction projects.

A-113 Audits

Single Audits Identify Findings That Went Uncorrected for Three or More Consecutive Years at Twenty-Four Percent of Awardees with Findings

OMB Circular A-133 provides audit requirements for state and local governments, colleges and universities, and non-profit organizations receiving federal awards. Under this Circular, covered entities that expend \$500,000 or more a year in federal awards must obtain an annual organization-wide audit that includes 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. The OIG reviews the resulting audit reports for findings and questioned costs related to NSF awards, and to ensure that the reports comply with the requirements of OMB Circular A-133.

The 98 audit reports reviewed and referred⁴ to NSF's Cost Analysis and Audit Resolution (CAAR) Branch this period covered NSF expenditures of \$4.2 billion as reported in the annual Single Audits during audit years 2013 and 2014, and resulted in 74 findings at 37 NSF awardees. The auditors issued qualified opinions on the financial statements of two awardees and on compliance with federal grant requirements of five awardees.

Twenty-four of the 74 findings (32 percent), at nine of the 37 awardees with findings (24 percent) were repeated from prior years, including 18 findings which had been repeated for three or more consecutive years, calling into question the awardees' ability to adequately manage their NSF awards.

Awardees' lack of internal controls and noncompliance with federal requirements included: untimely and/or incorrect reporting of time and effort; untimely or inaccurate submission of financial reports; failure to ensure that property purchased with federal funds was adequately tracked and safeguarded; failure to ensure that the procurement process included verification that vendors had not been suspended or debarred; and inadequate monitoring of subrecipients.

Desk Reviews Continue to Find Audit Quality and Timeliness Issues in One-Quarter of Single Audits

The audit findings in A-133 reports are useful to NSF in planning site visits and other post-award monitoring efforts. Because of the importance of A-133 reports to this oversight process, the OIG conducts desk reviews on all reports for which NSF is the cognizant or oversight agency for audit, and provides guidance to awardees and auditors for the improvement of audit quality in future reports. In addition, OIG returns to the awardees reports that are deemed inadequate so that the awardees can work with the audit firms to take corrective action.

During the period, we conducted desk reviews of 44 audit reports⁵ for which NSF was identified as the cognizant or oversight agency for audit, and found that 35 fully met federal reporting requirements. Eleven reports (25 percent) contained audit quality and timeliness issues. The quality issues we identified included five reports which were submitted after the deadline established in OMB Circular A133, and four reports in which the Schedule of Expenditures of Federal Awards did not provide sufficient information to allow for identification of awards received from non-federal "pass-through" entities or did not adequately describe the significant accounting policies used to prepare the schedule.

⁴ This number is lower than in previous periods due to security-related technical difficulties at the Federal Audit Clearinghouse, which prevented us from obtaining any reports between July 22nd and September 30th. We also reviewed and rejected one report based on audit quality deficiencies. We will report on the opinions and findings for this audit upon receipt of the revised report.

⁵ The audits were conducted by 32 independent public accounting firms.

In addition, five reports were submitted to the Federal Audit Clearinghouse with an inaccurate Data Collection Form (Form SF-SAC), one report inadequately presented the elements of the audit finding, and one report contained a Summary of Auditors' Results that did not accurately reflect the results of the audit. Finally, the auditors failed to correctly determine the major program to be tested in one audit.

For those errors that potentially impacted the reliability of the audit reports, we contacted the auditors and awardees, as appropriate, for explanations of each of the potential errors. In most cases, the auditors and awardees either provided adequate explanations and/or additional information to demonstrate compliance with federal reporting requirements. However, we rejected one report due to substantial noncompliance with federal reporting requirements. After completion of all 44 reviews, we issued a letter to each auditor and awardee informing them of the results of our review and the specific issues on which to work during future audits to improve the quality and reliability of the report.

Audit Resolution

NSF Implements all Purchase Card Audit Recommendations

In response to our January 2014 audit NSF strengthened oversight of its purchase card program by committing more resources to perform targeted reviews of purchase card activity; implemented monthly transaction reviews, periodic reviews of merchant category codes, and annual reminders to cardholders and approving officials of their responsibilities, and other actions. NSF also implemented several procedures to ensure that cardholders and approving officials meet the new annual training requirement.

Five Audits Question \$5.4 Million in Excess Salary Costs

Five audits with a total of \$6 million questioned costs were resolved this period. Of that total, \$5.4 million pertained to excess salary. At four auditees—Virginia Polytechnic Institute and State University, Michigan State University, the University of Florida, and the University of Illinois Urbana Champaign—the excess salary pertained to senior salary that exceeded the two-month limit that NSF normally allows in award budgets.

At the fifth—the University of California Los Angeles—the questioned amount pertained to excess summer salaries that the university had based on less than full-month periods. In addition to excess salary, we questioned \$640,120 on the five audits for costs such as unallowable relocation expenses for individuals not specifically named in proposals,

travel, and meals; and for unreasonable equipment, property, and expenses claimed at the end of awards. NSF did not sustain any of the excess salary costs, but did sustain \$419,523 of the other questioned costs.

Excess Indirect Facilities and Administrative Costs

We questioned \$2,134,379 on the Ice Cube Project at the University of Wisconsin-Madison. Of that total, \$2,127,594 pertained to indirect facilities and administrative costs resulting from the reclassification of two subawards as service agreements without written notification to NSF. The remaining \$6,785 pertained to unallowable relocation/travel costs. NSF did not sustain any of the questioned costs on this audit.

NSF provides additional information about audit resolution outcomes at the following site: <http://www.nsf.gov/bfa/responses.jsp>.

Investigations

Civil and Criminal Investigations

Two Florida Scientists Sentenced to Fifteen and Thirteen Years in Prison Following Convictions for Defrauding the SBIR Program

We previously reported⁶ that, following a four-week trial that concluded in March 2015, two scientists (husband and wife) were each convicted on fifteen felony counts. They used two companies to fraudulently obtain SBIR and STTR awards from NSF and six other federal agencies totaling \$10.6 million. In their proposals, they misrepresented their facilities, employees, costs, and the eligibility of principal investigators. They also fraudulently used the identities of over 50 prominent researchers and industry leaders to create false letters of support, endorsements, and commitments. In response to our initial request for information, the scientists provided falsified and backdated documents in an attempt to influence our investigation.

In September 2015 the husband was sentenced to fifteen years in federal prison and his wife to thirteen years, each followed by 3 years of supervised release. They were also ordered to pay \$10,654,969 in restitution, in addition to an order of forfeiture of the same amount. NSF's portion of the restitution is \$299,997.

Georgia Small Business and CEO Convicted of Wire Fraud and Filing False Claims Regarding SBIR Awards

After a two week trial, a federal jury convicted a small business and its Chief Executive Officer (CEO) of seven counts of wire fraud and two counts of false claims regarding NSF and NASA SBIR awards. Our joint investigation with NASA OIG revealed that the small business and CEO incorporated misrepresentations regarding fictitious employees, facilities, and costs in submitted proposals for an NSF SBIR Phase I award for \$99,828 and an NASA SBIR Phase II award for \$599,170. The CEO spent the majority of the NSF award funds on personal expenses unrelated to the award. Sentencing is scheduled in November 2015.

⁶ March 2015 Semiannual Report p.19.

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University Settles Fraud Investigation for \$2.7 Million

A Massachusetts university agreed to pay \$2.7 million to settle allegations that it violated federal regulations requiring universities to exercise oversight and control over NSF award funds. The university dispersed more than \$35 million from eleven NSF awards, under the direction of a single PI, for work primarily carried out at a foreign research facility.

Our investigation determined that the university paid millions of dollars of NSF funds to facility accounts without reconciling or reviewing the expenditures, including paying 26 unallowable cash advances totaling \$8.4 million to accounts controlled by the PI and others. The university also paid cash advances without requiring any evidence of actual costs incurred. The excess balance averaged more than \$1 million every month for eight years. In the course of our investigation, the university could locate supporting documentation for only 30% of the charges to the facility accounts. The university also failed to pay more than \$55,000 in associated interest on the advanced NSF funds.

In addition to the improper advance payments to the facility, the university paid the facility more than \$250,000 in reimbursement for invoices for expenditures that lacked supporting documentation. The university also failed to exercise adequate oversight of the award funds it expended directly. It paid more than \$530,000 in unsupported salary charges, as well as nearly \$100,000 for unsupported or fraudulent travel and other expenses by the PI.

After the university discovered the financial problems, it failed to notify NSF for more than two years. The settlement with the Department of Justice requires the university to implement a five-year compliance plan to ensure that it will exercise proper oversight of its NSF awards in the future. NSF will be able to use \$1,666,979 of the recovered funds to support other projects under its Major Research Equipment and Facilities Construction program.

SBIR Company Agrees to \$625,000 Civil Settlement

Our investigation of a Massachusetts small business found that the company had misrepresented its timekeeping and accounting systems prior to receiving two SBIR Phase II awards totaling \$998,125.⁷ Before it received the awards, the company told NSF that its systems complied with NSF requirements, but the company could not provide adequate documentation to support how it spent the NSF award funds. In addition,

⁷ Based on our recommendation, NSF previously withheld the final payment of \$74,944 to the company under its active Phase II award; see September 2014 Semiannual Report, p.21.

the company's certified project reports—which formed the basis for NSF approving award payments—lacked support for how funds had been spent. We referred the matter to DOJ, and the company agreed to pay a \$625,000 settlement.

SBIR Company, PI, and Employee Plead Guilty as a Result of Joint Investigation

As a result of our joint investigation with NASA OIG, DOE OIG, and DCIS, a Texas small business pled guilty to one count of conspiracy, and the PI and a company employee each pled guilty to two counts of false statements.⁸ Sentencing is scheduled in October 2015.

Former University Employee Pleads Guilty to Submitting False Documents to NSF OIG Auditors

A former Mississippi university employee pled guilty to falsifying time and effort reports, and directing others to do so, during an audit in an effort to support the salary costs incurred on the university's NSF grants. Sentencing is scheduled in November 2015.

SBIR Company Returns \$288,000 to NSF

An Ohio small business, which received an SBIR Phase I award and submitted a proposal for a Phase II award, falsely certified that it was 51% owned or controlled by U.S. citizens or by a U.S. entity. The company agreed to repay \$287,968 under a civil settlement agreement.

SBIR Company and PI Agree to \$200,000 Settlement

The PI on an SBIR Phase II award misrepresented the company's facilities, personnel, and the percentage of work completed by the company, and used award funds to pay for personal expenses such as trips, car maintenance, a speeding ticket, and groceries.⁹ The company and PI entered into a civil settlement with DOJ, under which the PI repaid \$200,000 and agreed not to apply for NSF funding for a period of five years.

STTR Company Owner Sentenced, and Civil Complaint Filed

We previously reported the conviction of a company owner in October 2014 on seven felony counts involving a \$150,000 STTR Phase I award.¹⁰ In May 2015 he was sentenced to five years' probation and

⁸ March 2013 Semiannual Report, p.23; September 2013 Semiannual Report, p.16; September 2014 Semiannual Report, p.23.

⁹ We previously reported the termination of the award based on this misconduct, see September 2012 Semiannual Report, p.20.

¹⁰ March 2015 Semiannual Report, p.20.

ordered to pay \$87,637.89 in restitution. Following the verdict, DOJ filed a civil complaint against the company owner seeking damages beyond the criminal restitution. We recommended that the company owner be debarred for five years, and NSF's decision is pending.

Community College Returns \$158,219 in Misspent Funds

As part of a proactive review of STEM awards, we requested financial records from a community college in Minnesota. Our subsequent investigation determined that some stipends under the award were paid to ineligible students, and stipend funds were also used for unapproved summer study. Award funds were also used for unallowable purposes such as entertainment and unapproved foreign travel. The community college agreed to repay NSF \$158,219 for the improper charges.

California University Refunds NSF for \$25,200 in Unsupported Costs

Our investigation of an NSF award made to a California university found \$20,000 in unsupported travel expenses. The university refunded NSF the \$20,000 in travel expenses and \$5,200 in applicable indirect costs.

University Returns Funds in Civil Settlement

We participated in a multi-agency investigation of a university in West Virginia for mischarging indirect costs as direct expenses, and for other offenses involving a senior executive at the university. Under a civil settlement with DOJ, the university paid \$2.3 million, of which \$17,810 was NSF award funds.

Actions by NSF Management on Previously Reported Civil and Criminal Investigations

SBIR PI and PI's New Company Recommended for Debarment

We previously reported the conviction and sentencing of a PI related to the over-reporting of expenses and effort on a \$500,000 SBIR Phase II award.¹¹ In response to our recommendation, NSF issued notices of proposed debarment to the PI and his new company, which are both being challenged.

¹¹ March 2015 Semiannual Report, p.19.

NSF Debars PI for Falsely Certifying Amount of Effort

We previously reported¹² on a PI at a university in Indiana who falsely certified 100% effort on his NSF awards for summer months during which he was teaching at a foreign institution. Following our recommendation, NSF debarred him for three months.

Convicted STTR PI Proposed for Debarment

In response to our recommendation for a ten-year debarment, NSF issued a proposed debarment for five years for a STTR PI who had been convicted and sentenced on seven felony counts.¹³

NSF Proposes Debarment for a PI and her Company

In response to our recommendation, NSF issued notices of proposed debarment for one year to a PI and her company as a result of the PI's misuse of a university purchase card. The PI charged \$12,793 to the card to cover gambling expenses and to buy her own company's textbook, paying with two NSF awards. She admitted the mischarges to the university and repaid the funds, and the university reimbursed the NSF awards. The university has replaced the PI on the awards.

SBIR Company and its Principal Proposed for Debarment

In response to our recommendation, NSF issued notices of proposed debarment to a PI and his company for five years as a result of possible fraud in obtaining and reporting on NSF awards.¹⁴ Also, an award to the company that had been previously suspended at our recommendation was terminated, resulting in \$72,818 of funds put to better use. The investigation is pending with DOJ.

NSF Withholds \$27,919 in STTR Funds

A California university collaborating on an NSF STTR award billed the small business awardee for \$27,919 in unallowable equipment purchases. Based on our recommendation, NSF permanently withheld \$27,919 from the final payment to the small business as unexpended award funds.

¹² September 2012 Semiannual Report, p.20.

¹³ September 2014 Semiannual Report, p.21.

¹⁴ March 2014 Semiannual Report, p.20.

NSF Suspends SBIR Phase II Award Pending Further Investigation

In response to our recommendation, NSF suspended the SBIR Phase II award to an Arizona small business pending further investigation into allegations of false statements made to NSF by the PI. Our investigation is ongoing.

NSF Declines to Debar Professors Who Failed to Disclose Dual Employment at U.S. and Foreign Universities

We previously reported our recommendation that NSF debar two professors for five years, based upon our conclusions that the two professors were receiving duplicate salaries from NSF grants awarded to their Georgia university and from a foreign university.¹⁵ Our investigation revealed that the professors, who held tenured faculty positions at the Georgia university and served as PIs or co-PIs on NSF awards, simultaneously held full-time faculty positions at a university located in Israel. They charged salary and foreign travel expenses associated with trips and time spent working abroad to the NSF awards. Through false statements or omissions of material facts, they actively hid their dual employment from NSF, their U.S. university, and their foreign university, and they made false statements regarding their dual employment. Their U.S. university conducted an investigation, and the professors subsequently resigned. We referred the matter for criminal prosecution, and the matter was declined in lieu of administrative action. NSF issued a notice of proposed five-year debarment to the professors. Ultimately, NSF took no administrative action.

SBIR Company and Its Principals Suspended Government-Wide

Our investigation of a Connecticut small business found that the company made misrepresentations regarding its PI's primary employment under its Phase I award, and misrepresented the company's timekeeping and accounting systems to obtain a Phase II award. In addition, three of the company's principals received non-SBIR awards from NSF through their positions at a university—awards that included funds budgeted to make purchases from the company. The company principals failed to disclose their association with the company in the university proposals, as required. In response to our recommendations, NSF: suspended the company's award as well as seven awards to the principals at their university; and suspended the company and its principals government-wide, pending the conclusion of our investigation. One of the suspended awards was subsequently terminated, resulting in \$369,089 in funds put to better use.

¹⁵ September 2013 Semiannual Report, p.18.

Administrative Investigations

OIG Recommended Suspension and Debarment of Former Employee

We previously described the actions of an NSF supervisor who lied to OIG, his management, his staff, and colleagues, which resulted in NSF proposing termination of the employee.¹⁶ The supervisor retired.¹⁷ Based on our recommendation, NSF suspended the former employee government-wide for improper conduct and lack of candor, but has not yet made a decision on the debarment recommendation.

Human Subjects Research Concerns at Two Institutions Lead to Award Terminations and Recovery of \$283,600

Based on our recommendation, NSF terminated an award to a Connecticut university, resulting in \$24,653 of funds put to better use. The university's Institutional Review Board (IRB) found serious noncompliance with regulations governing research with human subjects. The IRB suspended the PI's human subjects research work, and the university terminated his employment at the university.

In another case, NSF terminated an award at a Pennsylvania university, following our investigation into IRB noncompliance by a university professor. The IRB suspended the professor's human subjects research work under the award because it could not verify IRB compliance at collaborating institutions, and because the professor could not fully resolve a potential confidentiality issue. The university determined it could not effectively continue the award without the professor as PI, and requested termination of the award. NSF granted the request, resulting in \$258,961 of funds put to better use.

NSF Proposes Debarment for Former Rotator

In the case of a former NSF rotator in California who pled guilty to a conflict of interests violation,¹⁸ NSF proposed to debar the rotator for five years.

¹⁶ September 2014 Semiannual Report, p.17.

¹⁷ September 2015 Semiannual Report, p.26.

¹⁸ March 2015 Semiannual Report, p.22.

NSF Suspends Awards Pending Investigation of Student Safety Issues

We learned that a state licensing agency had issued a violation notice against a PI at a Kentucky university, and the university suspended the PI's ability to supervise students and postdocs. Given the seriousness of the safety risks and the extent of the university's protective actions, we recommended NSF suspend the active awards until the completion of our investigation, and NSF did so.

Investigations of Alleged Retaliation for Whistleblowing

The Pilot Program for Enhancement of Employee Whistleblower Protection¹⁹ provides whistleblower protections to employees of grantees who reasonably believe that they are being retaliated against for reporting allegations of misuse of federal funds received by their non-federal employers, for contracts and grants awarded on or after July 1, 2013. Under the Pilot Program, we investigate such allegations and submit a report to NSF management, the complainant, and the grantee. NSF then determines whether there is sufficient basis to conclude that the awardee subjected the complainant to a prohibited reprisal.

We investigated an allegation that a Kansas university terminated an assistant professor in retaliation after university officials learned he had reported to a journal possible research misconduct in a manuscript supported by NSF funds, and made it known to the journal that he intended to contact us about his concerns. The university convened an inquiry committee, which concluded that no research misconduct had occurred. However, the inquiry committee also determined that the assistant professor committed academic misconduct by making unsupported allegations to a third party and recommended that he be terminated. The university agreed with the recommendation and terminated the assistant professor. We submitted a report of investigation to NSF, and NSF did not find a sufficient basis to conclude that the assistant professor had been subjected to a prohibited reprisal.

We also investigated an allegation that an Alabama university decided not to retain a PI in retaliation for his expressing concern over a departmental policy, which he felt inappropriately required NSF to pay for a graduate student to spend time working as a teaching assistant. In its decision not to retain the PI, the university cited concerns about the PI's academic citizenship and collegiality, as well as the university's own ability to provide the PI with the resources that the PI claimed he needed to be successful. We submitted a report of investigation to NSF, and NSF did not find a sufficient basis to conclude that the complainant had been subjected to a prohibited reprisal.

¹⁹ 41 U.S.C. § 4712.

Research Misconduct Investigations

Research misconduct damages the scientific enterprise, is a potential misuse of public funds, and undermines the trust of citizens in government-funded research. It is imperative to the integrity of research funded with taxpayer dollars that NSF-funded researchers carry out their projects with the highest ethical standards. For these reasons, pursuing allegations of research misconduct (plagiarism, data fabrication, and data falsification) by NSF-funded researchers continues to be a focus of our investigative work. In recent years, we have seen a significant rise in the number of substantive allegations of research misconduct associated with NSF proposals and awards.

NSF takes research misconduct seriously, as do NSF's awardee institutions. During this reporting period, institutions took actions against individuals found to have committed research misconduct, ranging from letters of reprimand to revocation of doctoral degrees. NSF's actions in research misconduct cases ranged from letters of reprimand to a proposed five-year debarment. In every case, we recommended that NSF make a finding of research misconduct, issue a letter of reprimand, and require the subject to complete a Responsible Conduct of Research (RCR) training program. We also recommended additional significant actions as summarized below.

Graduate Student Falsifies Dissertation Data

A Texas university concluded that a former graduate student manipulated her dissertation research data. The university's investigative panel heard testimony from the PI, IT experts, and the student, about the data and the student's methodology for collecting the data. Based on the evidence the PI presented during the hearing, the former student eventually agreed the data were falsified, and blamed the falsification on an ex-roommate. The panel concluded the former student committed research misconduct by falsifying and fabricating data in her dissertation, and recommended that the university revoke her Ph.D. She appealed the decision, but the university president, and the state's board of regents upheld the finding and action.

We concurred with the university that the student committed research misconduct. Furthermore, we concluded that the student failed to take responsibility for her actions. She tried to conceal her falsification by lying to the university and pursuing legal challenges to the university's authority to investigate and our ability to obtain evidence from the university about the investigation. We recommended that NSF debar her for five years, and for five years prohibit her from serving as a peer reviewer, advisor, or consultant for NSF.

Graduate Student Fabricates and Falsifies Research Data in Multiple Publications

A graduate student at a Texas university fabricated and falsified data in three publications describing NSF-supported research and multiple other publications supported by other external funding. The university investigation committee concluded that she committed research misconduct. We determined that her actions included the improper manipulation of data, and publishing a description of a synthetic reaction and its products when the reactions were never carried out. We recommended that NSF: debar the student for three years; bar the student from serving as a peer reviewer, advisor, or consultant for NSF during the debarment period; and require three years of certifications and assurances thereafter.

Plagiarism in a Proposal Requesting Support to Write a Textbook

We determined that a proposal from a California professor requesting support to write an undergraduate-level textbook contained plagiarized text and references. The sources for the copied text and references included a Ph.D. dissertation, college job advertisements, and college mission statements. During our investigation, the professor described the dissertation author as a “consultant to the project”, but the proposal does not describe the author as a consultant and did not list her as a collaborator. We recommended that NSF require two years of certifications and assurances, and bar the professor from serving as a peer reviewer, advisor, or consultant for NSF.

PI Exonerated, Graduate Student Committed Plagiarism

A Texas university PI who submitted an annual report to NSF that contained plagiarized text asserted that a graduate student wrote the plagiarized part. The university found that the PI checked the report prior to submission with plagiarism software, which did not detect the bulk of the copied text was not flagged. The PI provided evidence that he had asked the graduate student to increase citations and rewrite portions flagged by the software. The student rewrote the flagged portions, but concealed that a large amount of copied text was not flagged. The institution found that the student committed plagiarism, for which the PI did not share culpability. We concurred that the graduate student knowingly plagiarized and recommended that NSF ban the student from serving as an NSF reviewer, advisor, or consultant for two years.

Co-PI Plagiarizes in Proposal

An awarded proposal submitted by a North Carolina university contained material plagiarized from three sources. The university's investigation determined the co-PI alone knowingly plagiarized the material into the proposal. The university implemented corrective actions that included remedial training and plagiarism screening of all forthcoming proposals. We agreed with the university's conclusion and recommended one year of certifications and assurances, and a one-year bar from serving as a peer reviewer, advisor, or consultant for NSF.

Actions by NSF Management on Previously Reported Research Misconduct Investigations

NSF has taken administrative action to address our recommendations on three research misconduct cases reported in previous semiannual reports. In two of the cases NSF made a finding of research misconduct, issued a letter of reprimand, and required RCR training. NSF also took additional significant actions in response to our recommendations as summarized below:

- In the case of a former PI at a California university who intentionally fabricated and falsified data,²⁰ NSF imposed a five-year debarment. NSF also barred the PI from serving as a peer reviewer, advisor, or consultant for NSF for five years. However, NSF did not impose any certification requirements for proposals submitted, and data management plans entered into, following the debarment period, as we had recommended.
- In the case of a former postdoctoral researcher and his mentor at a Colorado university who committed falsification and fabrication,²¹ NSF imposed a government-wide suspension for both pending a final resolution of the case. Ultimately, NSF debarred each for one year.
- In the case of an Illinois PI who committed plagiarism,²² NSF required three years of certifications and assurances, and banned the PI from serving as a peer reviews, advisor, or consultant for NSF for three years.
- NSF declined to make a finding of research misconduct in the case of two professors and a graduate student at a North Carolina university who omitted experimental details and overstated their experimental results in a published article,²³ concluding that their actions were significant departures from accepted research practices, but were

²⁰ September 2014 Semiannual Report, p.25.

²¹ March 2014 Semiannual Report, pp.21-22.

²² September 2014 Semiannual Report, p.30; March 2014 Semiannual Report, pp.23-24.

²³ September 2013 Semiannual Report, p.21.

not committed with a culpable level of intent. NSF issued a letter of reprimand, and declared all three ineligible for future NSF funding, relying on statutory authority to do so when it has concluded that investigators have violated NSF policy on dissemination and sharing of research results.²⁴ NSF would reinstate their eligibility if they took specific actions to correct publications containing the misleading results. This prohibition applies only to the receipt of NSF funds and does not affect awards from other federal agencies.

Assessing Intent in Verbatim Plagiarism Investigations²⁵

One approach for assessing intent in verbatim plagiarism cases examines the acts of copying, pasting, and integrating (CPI) text into a document. CPI draws on the copy-and-paste description of plagiarism, and relates the physical actions of copying and pasting to the levels of intent to start the analysis. The intent level derived from CPI may then rise or fall according to other evidence.

Copy: Selecting and copying text and figures from electronic sources has become the digital equivalent of manual note-taking—but maintaining bibliographic information for citation purposes is still necessary. Copying without preserving information for proper attribution can be a reckless act, because a reasonable person would recognize the increased risk of later using the copied material without attribution.

Paste: The act of pasting copied material into a document is inherently a knowing, conscious act, because it generally requires manual highlighting followed by executing a copy command, changing documents, and executing a paste command. Thus, a knowing level of intent is inherent in the act of pasting the material into the new document, and the act becomes knowing plagiarism in the conscious absence of subsequent steps to provide quotation marks, citation, and reference. The recurrence of matching typographical errors, spelling conventions, and embedded citations or objects into the new document are common evidence of the copy-and-paste method of plagiarism demonstrating knowing intent.

Integrate: Additional specific steps to integrate the copied material into the body of a new document can help mislead the reader into concluding that the new document is the subject's original work. Those steps can elevate the intent level to intentional. Examples include: updating "in press" references cited in the source to reflect subsequent publication in journals; renumbering embedded citations to be consistent with the bibliography; or changing verb tenses to suggest work completed by another is to be performed in the future by the subject. Each of these specific steps on its face shows intent to achieve the specific purpose of making the copied material appear to be original. Evidence of integration of the copied material often supports findings of intentional plagiarism.

²⁴ 42 U.S.C. § 1862o-3.

²⁵ We introduced the Quotation-Citation-Reference (QCR) method for assessing the act of plagiarism in our March 2009 Semiannual Report, p.43.

Congressional Testimony

Review of the Results of Two Audits of the National Ecological Observatory Network

On December 3, 2014, the Inspector General testified before the House of Representatives Committee on Science, Space, and Technology at a hearing titled, “Review of the Results of Two Audits of the National Ecological Observatory Network.” A summary of her testimony follows.

The OIG contracted with the Defense Contract Audit Agency (DCAA) in 2011 to perform an audit of NEON’s \$433.8 million proposed budget to determine if it was prepared in accordance with federal requirements and formed an acceptable basis for negotiation of a fair and reasonable price. From July through September 2011, DCAA issued three inadequacy memoranda stating that NEON’s proposed budget could not be audited because the proposed budget amounts lacked supporting cost and pricing data.

The final such report found NEON’s cost proposal was inadequate for audit because none of the proposed cost elements for labor, overhead, equipment, and other items reconciled to supporting data. DCAA also found the proposal included more than \$74 million in unallowable contingency costs, and more than \$1 million in unallowable honoraria costs.

In February 2012, NEON submitted a revised budget proposal, which DCAA was able to audit. Despite working with NEON for several months to clear inadequacies in the proposal, auditors found a total of \$154.4 million (nearly 36 percent of the total budget) in questioned and unsupported costs. The entire \$72.6 million of proposed contingency was questioned; in addition, more than \$13 million of the \$14 million in costs for materials and nearly \$16 million in equipment costs could not be supported. Other questioned costs included \$1.87 million in management fees for unallowable costs. As a result, auditors issued an adverse opinion stating that the proposal did not form an acceptable basis for the negotiation of a fair and reasonable price in September 2012.

Among other things, we recommended that NSF require NEON to submit a revised budget with support for all proposed costs. NSF disagreed with this recommendation and also stated that for years it had provided management fee in awards for construction or operation of large facilities.

In light of the problems with the NEON budget, we commissioned DCAA to audit NEON's accounting system. As the audit was proceeding, DCAA informed us that management fee had been awarded and used for unallowable costs, including \$112,000 for lobbying and \$25,000 for a holiday party. We investigated the allegations and referred them to the Justice Department, which declined to accept the case. We have included a review of the award and use of management fees in our FY 2016 audit work plan.

It is essential for cost information for proposed budgets to be accurate, current, and adequately supported because the budget is the basis for charging costs to NSF. The problems we found with budgets were not limited to the NEON project. In fact, we found that NSF approved proposed budgets for four major projects, totaling more than \$1.4 billion, although significant questions existed as to the adequacy of those budgets. As a result, while NSF knows what it will spend on these projects, it is not clear whether it knows what they should cost.

As we worked to resolve recommendations in audits of proposed costs for NSF's large facility projects, we identified broader weaknesses in NSF's pre- and post-award monitoring processes for high-dollar, high-risk projects that compounded our concern that unallowable costs could be charged to awards. We recommended that, at a minimum, NSF increase monitoring for its largest cooperative agreements valued at \$50 million or more.

The actions NSF has proposed to take to address OIG recommendations fall short of the standard necessary to adequately safeguard federal funds and leave millions of dollars at risk. In May we escalated the unresolved recommendations. We took this step in light of the serious risk to millions of federal funds posed by NSF's current processes and practices. NSF did not sustain our recommendation to require awardees to remove unallowable contingency from proposed budgets. We are awaiting NSF's decision on the remaining recommendations.

We have been urging NSF for the past four years to strengthen accountability over its high-dollar, high-risk cooperative agreements for its large facility construction projects. NSF applies its highest level of attention and scrutiny to determine the scientific merit of the projects it decides to fund. It is imperative that NSF apply the same rigorous

attention and scrutiny to its financial management of these projects. The stakes are too high for the Foundation to continue its current practice of making awards before it ensures that project costs are reasonable, are supported by adequate documentation, and will use taxpayer dollars efficiently.

Is NSF Properly Managing its Rotating Staff?

On June 25, 2015, the Inspector General testified before the House of Representatives Science Research and Technology and Oversight Subcommittees at a hearing titled, “*Is NSF Properly Managing its Rotating Staff?*”

The Inspector General’s testimony focused on findings and recommendations made in three OIG audits; one on costs associated with NSF’s use of rotators, a second on personnel management issues related to rotators, and a third on NSF’s management and oversight of the Independent Research/Development Program (IR/D). Finally, since rotators often make funding decisions, the testimony discussed findings from an investigative management implication report, which identified ways for NSF to improve its controls to identify and mitigate rotators’ conflicts of interest (COIs). The Inspector General’s testimony is summarized below.

To advance its mission of supporting science and engineering research and education, NSF brings scientists, engineers, and educators from academia, industry, or other organizations to the Foundation for rotational assignments of up to four years. While there are benefits that come from having rotators at NSF, there are also challenges. For example, because of rotators’ limited tenure, there is almost constant turnover in staff at NSF, especially in senior leadership positions. Other challenges include higher costs for rotators and rotators’ lack of familiarity with federal government processes and culture.

The additional cost of using rotators instead of permanent federal employees is considerable. We found that NSF paid an added cost of approximately \$6.7 million, or an average of over \$36,000 per IPA, for the 184 IPAs we looked at in a 2013 audit. We recommended that NSF evaluate ways to reduce these costs such as increasing rotators’ use of telework, increasing cost sharing by home institutions, and limiting salary to the maximum federal pay rate for the position. NSF developed a plan to examine rotator costs but has not yet implemented concrete actions in that plan.

NSF’s reliance on rotators also poses personnel management challenges. For example, at the time of our 2010 audit, NSF did not require rotators to have annual performance evaluations, even though

they functioned in the same capacity as NSF's federal executives, whose performance is evaluated each year. As a result, NSF risked not holding IPAs accountable, as it does federal employees, for accomplishing NSF's mission and goals. In response to our recommendations, NSF has brought all IPAs under a performance management system and reports that it received 117 IPA appraisals in the most recent cycle.

We also examined controls over NSF's IR/D Program, which is utilized primarily by rotators to maintain their professional competencies and remain actively involved with their research while at NSF.

At the time of our 2012 audit, NSF policy allowed IR/D participants to spend up to 50 days a year (or 20 percent of their time) on IR/D activities. In 2010, IR/D travel costs were \$1.8 million; rotators and other visiting scientists took 90 percent of the IR/D trips during this period. Since our audit, the Foundation has strengthened oversight of the IR/D program and taken steps to reduce its costs.

In light of the Foundation's reliance on rotators to make funding decisions, it is critical that strong controls be in place to identify and mitigate conflicts of interests (COIs) that occur as a result of rotators' research activities or their connections with their home institutions. Such controls protect rotators—many of whom have never worked in a federal environment—as well as the Foundation itself.

Our investigative report documented problems with controls over COIs we identified in the context of one rotator's tenure at NSF. We found that:

- No concrete plan to manage the rotator's known conflicts was developed and communicated;
- There were significant delays in the rotator's completion of a required ethics course and her submission of a required financial disclosure form;
- Actions taken to assess the impact of the rotator's COIs on an award she made were seriously flawed;
- The names of the persons who wrote the justification for funding and who actually made the decision to fund the award with which the rotator had conflicts were not included in NSF's system of record, undermining the agency's ability to identify and mitigate COIs; and
- A critical tool used to enforce the one-year cooling off period following the rotator's tenure at NSF was circumvented.

We recommended that NSF take various actions to strengthen its controls over COIs. Since we just issued our investigative report last week, the agency has not had an opportunity to formally respond.

Rotating staff are an important component of NSF's workforce and bring valuable experience to the Foundation. While we recognize the significant contributions made by rotators, it is essential for NSF to examine the costs associated with the rotator programs to ensure that federal funds entrusted to the Foundation are being spent effectively and efficiently.

It is also critical that funding justifications and recommendations made by rotators be free from conflicts of interests, as the integrity of those decisions is essential to NSF's merit review process.

FY 2016 Top OIG Management Challenges

CHALLENGE: Establishing Accountability over Large Cooperative Agreements

Overview: For the past four years we have directed significant attention to proposed construction budgets for NSF's recent high-risk, high-dollar cooperative agreements for large construction projects. We found that NSF approved proposed budgets for four major projects, totaling more than \$1.4 billion although significant questions existed as to the adequacy of the proposed budgets. As a result, while NSF knows what it will spend on these projects, it is not clear whether it knows what they should cost.

After four years of audit effort, the OIG escalated the recommendation for NSF to require current cost estimates for its large projects, in addition to our other recommendations – to remove unallowable contingency from budget; require annual incurred cost submissions and audits; track contingency expenditures; and strengthen cost surveillance over large cooperative agreements. Escalation of recommendations is the final step available to the OIG in an attempt to urge NSF to strengthen accountability and to exercise proper stewardship of federal funds. NSF did not agree completely with any of the recommendations, but has stated that it will revise certain policies to address some of them.

Challenge for the Agency: It is an ongoing challenge for NSF to establish accountability for the billions of federal funds in its large cooperative agreements at the pre- and post-award stages and throughout the lifecycle of the projects.

Accountability begins at the pre-award stage and should include audits of awardees' proposed budgets and accounting systems to ensure that awardees' cost estimates are fair and reasonable and that the accounting system is adequate to bill the government properly. The Large Synoptic Survey Telescope (LSST) project was the first construction project NSF considered since our 2012 alert memo on the agency's management of its high-risk, high-dollar cooperative agreements.

We found that NSF's internal review of the cost of the LSST project could not independently verify costs for any of the 136 proposed expenditures sampled, including approximately \$145 million in direct materials, nearly \$20 million for contingencies and more than \$6 million in direct labor costs. Nonetheless, NSF moved forward with this project although it has limited insight into the makeup of the project's cost and little if any, assurance that they are reasonable.

NSF also moved forward with the \$433.8 million National Ecological Observatory Network (NEON) project. NEON project risks originated with the construction budget, which included \$154 million (nearly 36 percent of the total proposed budget) in questioned and unsupported costs, as identified by OIG audits. Auditors issued three inadequacy memos over a four-month period in 2011 and issued an adverse opinion on the proposed budget in 2012 because the proposal did not form an acceptable basis for negotiation of a fair and reasonable price. As the project has progressed, additional serious financial management problems have surfaced. For example:

- An August 2015 independent, external assessment commissioned by NSF of NEON's cost estimate to complete the project gave the estimate an overall rating of "inadequate."
- In 2013, during the indirect cost rate negotiation of fiscal year 2011, NSF found potential questionable spending by NEON for meals, visa, and entertainment activities, among other things. In the same year, the indirect cost rate negotiation of fiscal year 2012 disclosed the potential of lobbying activities.
- The NEON construction award requires NSF approval before using contingency funds; however, NEON has been executing against a revised project plan that incorporated \$35 million of budget contingency into the performance measurement baseline without prior NSF approval. To date, NSF has not determined whether NEON actually spent any of the \$35 million in contingency. If, as OIG recommended, NSF held contingency funds until NEON provided sufficient support for their use, NSF would have greater visibility over contingency expenditures and assurance that the funds were not spent in advance of NSF approval.

In June 2015, NEON management notified NSF that the project was facing a potential cost overrun of \$80 million. It is noteworthy, that NSF was originally informed by NEON that the cost overrun would be \$27 million. In response to questions from NSF, NEON increased that estimate to \$40 million, then to \$60 million and finally to \$80 million.

In light of the concerns about the NEON cost proposal, NSF should have increased its oversight of costs as the project progressed. Instead, once the project was underway, NSF did not require adequate evidence that project expenditures were warranted, reasonable, or allowable under NSF and federal requirements.

NSF did not start requiring NEON to provide more detail about its spending until May 2015, and NSF has just recently started reviewing transaction level detail associated with expenditures that appeared unusual. Obtaining and reviewing transaction level data throughout the life of the project could have revealed unallowable or unreasonable expenditures, or funds spent for awards other than those for which they were provided. Incurred cost submissions and visibility over expenditures, including contingency spending, as OIG has recommended, are critical.

If NSF had strong cost surveillance practices in place from the start of the NEON project, it would have had the information it needed to identify the potential cost overruns early on, and would have been able to address them before they amounted to tens of millions of dollars. We will continue to urge the Foundation to exercise the highest level of attention and scrutiny to the financial management of its large facility projects.

OIG's Assessment of the Agency's Progress: In response to our recommendations on LSST, NSF stated that it would review the project's risk management process, including a detailed contingency review. NSF stated that it agreed with the "spirit" of our recommendations on NEON, and that it is conducting monthly expenditure reviews and increasing its involvement in management of the NEON project. NSF also stated that it plans to contract for an independent assessment of the December 2015 cost estimate to complete the project.

With respect to its large cooperative agreements, NSF has said that it will require annual incurred cost information that can be used to conduct an audit and that it will conduct incurred cost audits for projects valued at \$100 million or more at project completion and possibly at other points during the project, based on its own assessment of risk. Finally, NSF has contracted for an external, independent evaluation of its policies and procedures for large facility projects. That evaluation is expected to be available in December 2015.

As described above, NSF has stated that it intends to take some actions to strengthen accountability over its large cooperative agreements. However, in most instances, these proposed actions are forward

looking, and we have not been able to verify whether they have been implemented and are working. Therefore, we remain concerned about NSF's progress toward improving cost surveillance for its largest cooperative agreements.

CHALLENGE: Management of NSF's Business Operations

Overview: NSF is a small agency in terms of staff, but one with a significant appropriation and an important portfolio of responsibilities. Its mission is to promote the progress of science primarily by making productive investments in research and the nation's science infrastructure. Consequently, most of NSF's managers and staff are successful science or engineering professionals highly qualified to help determine the composition of the agency's investments.

Selecting and producing great science is the agency's most important job, but with an annual appropriation of over \$7 billion and a diverse portfolio of projects to manage, NSF leadership cannot overlook the importance of its administrative operations. Effective executives and administrators are as critical to NSF's success as are its scientists. The "business" side of NSF faces a set of challenges aimed at improving the organizations' management controls over payments, information security, recordkeeping, and reporting. Simply stated, NSF will be challenged to "multitask" and deliver both scientific and organizational excellence.

Challenge for the Agency: Finding and Eliminating Improper Payments.

Ensuring that payments are proper at the time they're initiated has always been challenging for NSF because grant recipients are generally not required to present supporting documentation, such as invoices and receipts, in order to receive payments from the agency. As a result, NSF issues approximately \$6 billion annually in grant and cooperative agreement payments without verification, relying almost completely on the *recipients'* systems of internal control to ensure that only proper payments are requested and that any improper payments are self-identified and corrected by the recipient.

In June 2015, we issued a report on NSF's non-compliance with the Improper Payment Elimination and Recovery Act (IPERA) requirements for FY 2014. The report identified significant issues with how NSF executed the risk assessment used by the agency to conclude it was not susceptible to significant improper payments. Specifically, in its risk assessment, NSF did not address all of the required risk factors, reached unsupported conclusions for some of the transactions tested, and lacked alignment of the risk indicators with the ultimate conclusion

of low risk. In addition, in the quantitative portion of the risk assessment NSF did not consider payments corrected after the fact by recipients to be improper payments, nor did it maintain the stated statistical validity in the execution of its sampling plan. As this was the second consecutive report that found significant issues with NSF's risk assessment, we recommended that the agency conduct a statistically valid sample in order to determine an estimated improper payment rate that would establish once and for all whether or not NSF is susceptible to significant improper payments. While NSF generally agreed with some of the report's findings, it did not believe that it was non-compliant with IPERA.

The *Standards for Internal Control in the Federal Government*, issued by the Government Accountability Office in September 2014 (the "Green Book") states that, "Internal control is a process effected by an entity's oversight body, management, and other personnel...." It further states that, "...management designs control activities so that all transactions are completely and accurately recorded." NSF's challenges in this area are to develop an internal control process that provides reasonable assurance that payments are proper at the time they are made, and to develop a sound process for assessing its risk of improper payments.

Protecting Agency Information and IT Resources

The protection of its information systems against unauthorized access or modification is critical to NSF's ability to carry out its mission. As demonstrated by the recent data breach at the Office of Personnel Management, extreme diligence is required to deal with today's increasingly sophisticated threat landscape. In addition to certain recurring IT security weaknesses, NSF has some long-standing issues that warrant increased attention, particularly with regard to its Antarctic Program. NSF management should allocate appropriate resources to correcting these weaknesses and providing increased assurance that the systems and information are adequately protected.

In addition, continuous monitoring of IT systems is essential to the timely identification and mitigation of IT security risks. OMB requires agencies to develop and maintain an information security continuous monitoring (ISCM) strategy and implement an ISCM program in accordance with specific NIST guidelines. Per OMB's guidance, agencies must implement continuous monitoring of security controls as part of a phased approach through Fiscal Year (FY) 2017. NSF's approach to strengthen continuous monitoring includes implementing the DHS Continuous Diagnostic and Mitigation Program and transitioning to ongoing authorization. In this environment of an ever increasing number and sophistication of IT security threats, it is imperative that NSF continue to dedicate the appropriate attention and resources to implementing a robust ISCM program.

Promoting Accountability and Transparency

The Digital Accountability and Transparency Act (DATA Act) directs the federal government to standardize and publish a wide variety of reports and data in order to foster greater transparency over federal spending. Federal agencies must implement the DATA Act by May 2017. The implementation is being led by a joint team from the U.S. Department of the Treasury and the Office of Management and Budget (the DATA Act Project Management Office or PMO). The iterative nature of the Data Act PMO's implementation strategy and evolving federal guidance make it difficult for agencies, including NSF, to integrate the implementation effort into existing IT governance and resource requirements planning structures. Also, there are critical issues that still need to be resolved on a government-wide basis, as well as guidance in key areas that is needed before agencies can fully develop their own project plans.

Other factors also present a significant challenge for NSF in successfully implementing the requirements of the Act including: the potential for necessary modifications to the agency System for Award Management (SAM) interfaces; the lack of available agency FTEs to ensure that adequate staff are dedicated to DATA Act implementation; and the potential that NSF's relocation in 2017 may impact the allocation of additional funding (should it be needed) beyond what is currently planned. Also, the lack of a clear source of funding to make the necessary system and process changes to support implementation presents a risk to the success of the DATA Act implementation. As the guidance on DATA Act requirements is rolled out, cost estimates and implementation plans are likely to change, making it difficult for the agency to adequately prepare.

Managing the Government's Records

In 2011, President Obama signed a memorandum initiating a government-wide effort to reform federal recordkeeping in light of the dramatic increase in the amount of electronic information that the government manages. The Office of Management and Budget (OMB) and the National Archives and Records Administration (NARA) issued a follow-up directive in 2012, which required federal agencies to take specific actions by appointed dates to reform the policies and practices for the management of records, and provide a framework for the management of electronic records.

The U.S. Government Accountability Office (GAO) issued an audit report in May 2015 on the implementation of the directive at 24 departments and agencies, including NSF. GAO found that NSF did not submit a Senior Agency Official report, and did not provide information to NARA on how it intended to manage permanent electronic records, or a date

when it would submit this information. Nor did NSF provide a date when its required review for temporary and permanent email records would be completed. Further, GAO found that NSF did not report to NARA that it did not possess any permanent records that were 30 years old or older, as the directive required. Finally, GAO found that as late as March 2015, NSF could not provide a date when it will complete the identification of any portion of its unscheduled records, increasing the risk that it might destroy such records without NARA approving or being aware. GAO made four recommendations to NSF to address the agency-specific findings in the report. NSF should provide a prompt response to GAO's recommendations, and comply with NARA's directive.

OIG's Assessment of the Agency's Progress: NSF needs to devote more attention to its business operations in order to surmount the challenges presented by these four issue areas. While NSF has taken steps to improve its reporting on improper payments in the agency financial records, it confuses the differences between improper payments and unallowable costs. For example, a cost may ultimately be allowable while also being considered an improper payment at the time it was made. And a payment may be considered improper, even if the recipient later identifies and self-corrects the error. Without a better understanding of how an improper payment is defined, NSF will continue to have difficulties assessing whether it is susceptible to improper payments.

NSF also continues to take action to correct IT security issues, although progress in resolving the issues in its Antarctic Program (USAP) have been delayed during the past several years by the changeover to a new Antarctic contractor, as well as the impending expiration of the lease on the USAP's facility in Centennial, CO. During FY 2015 USAP finally replaced a very out-of-date software application used to process personnel, medical, equipment maintenance, and procurement transactions. However, since FY 2006 we have reported that USAP needs to improve its disaster recovery and continuity of operations planning for its Denver data center. The timeline for remediation of this issue is contingent upon the availability of funding. Regarding NSF's continuous monitoring program, DHS recently awarded a contract that will allow NSF to initiate contacts with the contractor and to form a Continuous Diagnostic and Mitigation working group.

With regard to the Data Act, in FY 2015 NSF organized its DATA Act implementation team, and established a governance structure, including a Senior Accountable Official (SAO), an Executive-level Steering Committee, and a NSF DATA Act Working Group (DAWG). NSF also assigned staff to the on-going government-wide working group effort to review, define, and standardize DATA Act data elements; actively participated in other DATA Act-related government-wide activities; and

identified agency staff with subject matter expertise for consultation. Finally, NSF issued its initial Data Act Implementation Plan in August, along with its related cost estimate.

Regarding the GAO report on recordkeeping, NSF stated that it is currently preparing a response.

CHALLENGE: Management of the IPA Program

Overview: In addition to its permanent scientific staff, NSF utilizes a rotating staff of external researchers and educators from across the United States to participate in the funding decision process. Those external researchers, called “rotators”, constitute roughly 30% of NSF’s program officers and also serve in executive positions such as Assistant Directors who lead one of NSF’s seven science directorates. Most come to NSF under the authority of the Intergovernmental Personnel Act (IPA) for a period of up to four years, and then return to their home institutions.

Rotating staff are an important component of NSF’s workforce and bring valuable experience to the Foundation. In many instances, however, rotators cost more than federal employees performing the same job, and they are frequently away from the office as they continue research at their home institutions. While we recognize the significant contributions made by rotators, it is essential for NSF to examine the costs associated with the rotator programs – funds spent directly on the rotators and costs associated with the rotator program – to ensure that federal funds entrusted to the Foundation are being spent effectively and efficiently.

Challenge for the Agency: Recent audits and investigations have identified weaknesses in NSF’s management of the IPA program, a program that serves as a cornerstone of its scientific and management hiring programs. NSF is challenged to establish and maintain strong oversight of this program to ensure continuity of effective leadership within the Foundation while maintaining high ethical standards and compliance with laws and regulations despite the high personnel turnover rate the program produces.

The challenges associated with NSF’s reliance on rotators include: frequent turnover of personnel, management of inherent conflict of interests (COI) that arise from having individuals whose institutions receive NSF funding come to the agency to assist in funding decisions, the establishment and maintenance of transparency in funding decisions, and ensuring that rotators comply with federal laws after they leave NSF. Finally, the additional cost of using IPAs instead of hiring

permanent employees is significant; our 2013 audit found that NSF paid an annual additional cost of approximately \$6.7 million or an average of over \$36,000 per IPA for the 184 IPAs we examined.

Managing Conflicts of Interest

In light of the Foundation's reliance on rotators to make funding decisions, it is critical that strong controls are in place to identify and mitigate conflicts of interests (COIs) that occur as a result of rotators' research activities and their connections with their home institutions. Such controls protect rotators – many of whom have never worked in a federal environment – as well as the Foundation itself.

A recent investigative report documented problems with controls over COIs we identified in the context of one rotator's tenure at NSF. We found that:

- No concrete plan to manage the rotator's known conflicts was developed and communicated;
- There were significant delays in the rotator's completion of a required ethics course and her submission of a required financial disclosure form;
- Actions taken to assess the impact of the rotator's COIs on an award she made were seriously flawed;
- The names of the persons who wrote the justification for funding and who actually made the decision to fund the award with which the rotator had conflicts were not included in NSF's system of record, undermining the agency's ability to identify and mitigate COIs; and
- A critical tool used to enforce the one-year cooling off period following the rotator's tenure at NSF was circumvented.

We have recommended that NSF take various actions to strengthen its controls over COIs.

Impact of Frequent Turnover in Management Positions

As noted, IPAs generally serve in executive positions, such as Assistant Directors who lead NSF's science directorates. NSF expects its executives to provide strategic direction, make investment and funding decisions, oversee and monitor grant-making processes, as well as supervise and manage scientific and administrative staff. Currently, six out of seven of NSF's Scientific Directorates are headed by IPAs.

Continual turnover, especially in leadership positions, presents challenges for NSF. Succession planning and knowledge transfer become constant and thus, more critical functions, as NSF is continually recruiting and assessing new leaders. Once they are found and

hired, NSF is challenged to ensure these leaders receive training to understand the culture of the Federal government, and how that impacts the day-to-day management of NSF. New leaders must be trained in NSF's government and management processes and systems, and conflicts of interest must be identified and recognized and managed, as current and prior activities of these executives may influence funding decisions and oversight responsibilities. The constant reshuffling of senior management also leads to lack of continuity for programmatic leadership for research initiatives.

Transparency in Funding Decisions

The turnover in program managers, who make significant contributions to funding decisions, also creates a transparency challenge. In one directorate, we identified a concern about transparency regarding grant funding decisions between outgoing and incoming IPAs. Specifically, some IPA program officers believed it to be acceptable to carry out a predecessor's decision to fund a proposal. In one instance, after an outgoing IPA negotiated a budget and agreed to fund a proposal, his replacement IPA was expected to complete the funding action without exercising independent analysis of the matter. NSF did not have any record of the first IPA's deliberations on the matter.

Compliance with Federal Laws after IPA Assignment Ends

It is a challenge for NSF to ensure that IPA personnel fully understand their responsibility to comply with federal laws and regulations. We found an instance in one directorate in which an IPA interacted with NSF program officers during the one-year "cooling off" after departure from NSF. An NSF database, used to monitor conflicts by departed IPAs and enforce the cooling off period, was circumvented so that grants officers could not determine that the IPA should not be negotiating a new grant.

Cost of IPAs

Finally, NSF pays IPAs the salary and fringe benefits they were earning at their home institutions in addition to reimbursing them for travel to NSF, temporary living expenses, lost consulting income, and state income taxes of the IPA in some instances. With respect to salaries, we found that for one year NSF paid an additional \$3 million for IPA salaries, and, that, in August 2012, 54 IPAs' salaries exceeded the federal executive pay limit of \$179,700. NSF paid 34 of these IPAs an annual salary of \$200,000 or more; the highest annual IPA salary was over \$300,000.

We calculated that NSF paid nearly \$800,000 in additional fringe benefit costs for IPAs and paid more than \$337,000 for lost consultations. We recommended that NSF evaluate ways to reduce IPA costs such as increasing telework from IPAs' home institutions and increasing cost sharing. While NSF has developed a plan to examine higher costs for IPAs, it has not yet implemented concrete actions.

OIG's Assessment of the Agency's Progress: NSF informed us that it communicates COI standards to rotators before they arrive and that it reinforces this information to each rotator in an email message after the rotator starts at NSF. With respect to transparency in funding decisions, NSF stated that it will review program management training to incorporate "best practices" related to funding decisions including that an outgoing program officer cannot bind an incoming program officer to recommend an initial award. In addition, NSF implemented a process to orient and train IPAs who are unfamiliar with federal government processes and practices.

In response to our audit of IPA costs, NSF stated that it would initiate actions that would balance potential costs reductions with possible effects on either recruitment efforts or the effectiveness of IPA working arrangements. NSF also informed us that in order to identify an appropriate set of actions, it undertook an assessment of mechanisms to reduce the cost of IPAs.

With respect to our findings related to controls over rotators' COIs, we remain concerned that additional attention is needed in this area and are currently assessing ways for us to evaluate the extent to which the problems we identified in one division are occurring across the Foundation.

With respect to the added costs of IPAs, in August 2014 NSF identified several actions it could take to reduce the added costs of IPAs. Unfortunately, as of the end of this reporting period, little progress had been made in accomplishing those actions.

CHALLENGE: Moving NSF Headquarters to a New Building

Overview: NSF was scheduled to occupy its new building in December 2016, and to be out of its existing buildings by February 2017. However, due to delays from an impasse in negotiations between NSF and its Union on workstation sizes and allocation of shared and support space, GSA negotiated the rental start date to September 1, 2017 at a delay cost of approximately \$14.5 million.

Challenge for the Agency: If NSF causes additional schedule delays, it may need to extend these leases, which would require it to continue paying rent at two locations, with the rent for the current buildings likely being higher than it currently is. The revised relocation schedule includes little slack time and two phases of negotiations still need to be completed. The risk of further delay is considerable in light of the number of items that have to be negotiated with the union and the tight deadlines for resolving differences.

NSF faces four major risks to moving to its new headquarters before leases at its current buildings expire December 31, 2017. First, NSF lacks a detailed master schedule for its move. Second, NSF will have to negotiate with its union on several furniture-related and space issues, and has little time to do so. Third, the current schedule includes fewer opportunities for design review and a shorter time to complete these reviews. Finally, NSF faces risks because its new building has less storage space and the agency lacks an approved record schedule allowing destruction of underlying hard copy documents. These risks are exacerbated by constant leadership turnovers and the lack of a single person responsible for the project who has direct access to the Director. We have issued an alert memo to the NSF Director raising concerns about continued schedule delays and the risk of the associated higher costs.

OIG's Assessment of the Agency's Progress: With assistance and input from GSA, NSF's schedule for the move was revised, which reduced the original delay by approximately six months. NSF successfully met two deadlines for reviewing interior design. NSF has informed us that a contractor will present workstation layout design options to both NSF and Union together. It is NSF's view that presenting options in this manner may help NSF and the Union reach agreement on this issue.

NSF continues to face significant challenges with respect to union negotiations for items which must be decided within a short time. Therefore, we continue to encourage NSF senior management to focus the highest level of attention on its move to its new headquarters.

CHALLENGE: Management of the U.S. Antarctic Program

Overview: Antarctica is the coldest, driest, windiest, most remote continent on earth. The weather changes frequently and abruptly; temperature drops of as much as 65 degrees Fahrenheit in twelve minutes have been recorded.

NSF, through the United States Antarctic Program (USAP), manages U.S. scientific research in Antarctica. The program's goals are: to understand the Antarctica and its associated ecosystems; to understand the region's effects on, and responses to global processes such as climate; and to use Antarctica's unique features for scientific research that cannot be done as well elsewhere. The Antarctic Support Contract, which was awarded to Lockheed Martin in December 2011 is NSF's largest contract, valued at nearly \$2 billion over 13 years.

Challenge for the Agency: Establishing and maintaining a world-class scientific research program in Antarctica's remote and harsh environment is a formidable logistical challenge. The July 2012 report by the Blue Ribbon Panel, commissioned by NSF and the Office of Science and Technology Policy, focused on eight major areas including capital budgeting, communications, and health and safety, which presented the most significant challenges.

NSF developed a matrix to track its progress in implementing recommendations from the Blue Ribbon Panel report. In June 2013, we issued a memorandum to NSF making several suggestions to improve the usefulness of this matrix, such as including timelines for action and identifying a responsible person for each action. Our 2013 audit of the medical screening process for travelers to Antarctica found that NSF's medical review panel has made recommendations that could reduce the cost of this process, but NSF has not implemented many of these recommendations.

Another challenge for NSF is to control the cost of the USAP and to ensure adequate oversight of payments to the USAP contractor. For example, for the last five years the medical review panel recommended that NSF base required medical tests on factors such as how long an individual will be in Antarctica, and what their duty station and job responsibilities will be. Revising the number of medical tests performed to reflect these criteria could lower costs of the screening process, which currently totals approximately \$860 per person.

Our July 2015 audit of the health and safety of USAP participants identified four areas for improvement in: 1) developing a process to identify, respond to, track, and collect data on all misconduct incidents that occur in USAP; 2) improving pharmacy operations; 3) ensuring Special Deputies in the Antarctic have adequate tools and training to perform their law enforcement responsibilities; and 4) enforcing and potentially expanding the requirement for breathalyzer tests.

OIG's Assessment of the Agency's Progress: NSF has been tracking progress against the Blue Ribbon Panel recommendations in its working matrix and has improved that document in response to

our recommendations. In response to our audit on reducing costs of the medical screening process, NSF concurred with the OIG's recommendations and has formalized its process for addressing and tracking medical panel recommendations.

NSF generally agreed with the recommendations in our 2015 health and safety audit and informed us that it plans to take several steps to implement the recommendations such as sharing information on violations of the Code of Conduct and issuing a reminder to the contractor regarding management of drug interactions and making patients aware of drug safety information.

In addition, NSF informed us that it authorized the contractor to obtain breathalyzers that do not require calibration and that the contractor recently updated the manuals for the medical clinics, including procedures related to controls over medication. NSF also plans to host a law enforcement site visit to Antarctica.

Finally, NSF has informed us that it does not plan to develop a process to identify and track misconduct by all USAP participants, including researchers. As a result, NSF lacks information needed to prevent or limit future misconduct, which increases the risk that future problems may go unaddressed and possibly become more severe. The lack of such information about *all* USAP participants may also undermine the agency's ability to ensure that similar infractions are handled consistently, whether they are committed by a researcher or a contractor employee.

CHALLENGE: Improving Grant Administration

Overview: Making grants in support of promising scientific research is NSF's primary business and a key element of its mission. In FY 2014, NSF acted on more than 48,000 proposals for research, education and training projects, and funded close to 11,000 new awards. As of September 30, 2015, NSF had a portfolio of about 50,000 active awards totaling approximately \$32.5 billion. Since most of these awards are grants, it is vital that NSF's grant-related business processes ensure that grantees spend their funds appropriately.

Challenge for the Agency: Ensuring that grant funds are spent as intended has always been challenging because grant recipients are not required to present supporting documentation, such as invoices and receipts, in order to receive payment from the agency. In addition, while recent efforts to reduce the administrative impact on grantees are commendable, accountability for public funds should not be compromised in the process. Therefore, the challenge for NSF is

to implement controls over the spending of grant funds that ensure transparency and accountability, but do not create undue administrative impacts on awardees and federal program officers.

One step NSF and other federal agencies have taken to reduce the burden on researchers is to streamline the written guidance for administering grants. However, we are concerned that in an effort to reduce the guidance, some clarifying text has been eliminated that may lead to inconsistent interpretations and directions being given to awardees. With scores of program officers fielding questions from numerous awardees on a daily basis, NSF will be challenged to provide consistent guidance that does not contradict previous responses or its written policies.

On December 26, 2013, OMB issued its final rule, 2 CFR Part 200, “Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards” (Uniform Grant Guidance or UGG). The UGG streamlined eight OMB administrative, cost, and audit circulars into one circular that covers all types of non-federal entities that receive federal awards. NSF revised its Proposal & Award Policies & Procedures Guide to implement the UGG. Changes included in the revised Guide became effective December 26, 2014. As NSF makes new awards and renews existing ones under the revised Guide, it should monitor implementation of the new policies to ensure that no unintended consequences arise as a result. Also, as noted in last year’s Management Challenge, OMB raised the single audit threshold from \$500,000 to \$750,000, effectively removing audit coverage on millions of dollars in NSF funding. NSF will need to take additional steps to oversee the awardees who fall below the threshold.

In addition, OMB changed requirements related to documentation of labor effort, making it more challenging to assess the allowability of salaries and related costs on an ongoing basis. Under the UGG, colleges and universities are permitted to charge awards for salary costs based on budget estimates rather than on the actual work performed, provided only that “significant changes” are entered “in a timely manner” and that the final amount charged to the federal award is accurate, allowable, and properly allocated. NSF faces the challenge of implementing OMB guidance over awardee spending for research salaries – generally the largest item of expense in research awards – that only requires awardees to ensure salary costs are reasonable at the end of an award.

As OMB is changing its documentation requirements for research salaries, ongoing initiatives to reduce administrative requirements on sponsored researchers present additional challenges to NSF. Among these is an effort to change the manner in which salaries are certified

as allowable charges to federal grants. OIG recently issued reports on implementation of pilot payroll certification systems at two NSF awardee institutions.²⁶ Our audits highlighted the challenges NSF faces in providing effective stewardship over taxpayer money without placing unnecessary administrative burdens on researchers. The reports noted that any system's ability to properly account for federal research funds relies on the controls built into the system. They reminded NSF to reinforce with its awardees the need to design and implement controls that reduce the risk of improper charges to federal awards and provide a means to ensure the controls are achieving that objective.

Finally, OMB significantly shortened the audit resolution timeframe. Prior to the UGG, federal agencies had 6 months to issue management decision letters on findings affecting the agency from the time they received an audit report. The new OMB requirement allows 6 months from the date that the report is submitted to the Federal Audit Clearinghouse. For NSF, this change would effectively shorten the audit resolution timeframe by 30 days, unless the agency can establish a new accelerated process for identifying and tracking reports that require resolution.

OIG's Assessment of the Agency's Progress: NSF took several actions this past year to strengthen grant administration but more are needed. As previously noted, the agency's revised Proposal & Award Policies & Procedures Guide, implementing the UGG, became effective in December 2014. OIG and NSF continue to discuss transferring responsibility for identifying single audit findings that require NSF resolution to NSF. Finally, NSF continues to use its Award Monitoring and Business Assistance Program (AMBAP), which includes baseline and advanced monitoring activities. During advanced monitoring, NSF assesses the internal controls of its awardees to ensure adequate administration of the NSF awards. During FY 2015, NSF planned and completed 30 Advanced Monitoring Site Visit reviews and 147 desk reviews.

CHALLENGE: Encouraging the Ethical Conduct of Research

Overview: Congress passed the America COMPETES Act in 2007 to increase innovation through research and development, and to improve the competitiveness of the United States in the world economy. NSF responded to the Act by mandating mentoring plans for all postdoctoral

²⁶ Reports on pilot implementation at George Mason University (OIG 15-1-017, issued July 31, 2015) and Michigan Technological University (OIG 15-1-023, issued September 30, 2015).

positions and directing that grantees provide appropriate training and oversight in the responsible and ethical conduct of research to undergraduate and graduate students, and postdoctoral researchers participating in the proposed research project.

However, information collected during investigations, site visits, and reviews of institutional Responsible Conduct of Research (RCR) plans, suggests that some institutions consider RCR as just another compliance requirement, rather than part of its educational mission. Furthermore, some research suggests that many of the ethics training programs currently available do little to change the perspectives of students and postdocs regarding the ethical conduct of research. As more stories about research misconduct circulate in the media, the public's confidence in the research enterprise is weakened and taxpayer support of science is undermined. NSF is therefore challenged to provide more oversight on institutional implementation of these requirements and to provide meaningful guidance regarding RCR training.

Challenge for the agency: NSF's primary challenge is to ensure that awardees implement effective RCR programs. At a time when opinion surveys indicate more Americans are becoming distrustful of science, it is important that the conduct of scientific research not be tainted by instances of misrepresentation or cheating. Recent surveys also suggest that cheating is endemic at various levels of education, with 30% of researchers admitting to engaging in questionable research practices or knowing someone who has engaged in such practices.

Consistent with these survey results, OIG has seen a dramatic increase in substantive allegations of plagiarism and data fabrication since 2004, especially as it relates to junior faculty members and graduate students. The number of allegations investigated has grown from a low of 45 in 2004 to 75 this past year. Even more important, however, has been the rise in serious instances of research misconduct as evidenced by the number of research misconduct findings by NSF. In 2004, two research misconduct findings were made, while in 2014 there were 20 research misconduct findings.

In addition, OIG has seen a substantial increase of allegations related to peer-review based confidentiality violations, false representations in CVs, false representations of publications in annual/final reports, failure to list all affiliations and current support (especially at overseas institutions), and fraudulent or otherwise improper use of grant funds. The number and variety of ethical issues identified in our investigative activities suggest that institutions have not sufficiently emphasized research integrity as a core value – not only at the student level but at the faculty level as well.

The NSF Act places responsibility on NSF to strengthen scientific and engineering research potential at all levels in various fields. NSF's research and training programs reach individuals who are ultimately employed by academia, industry, and government. These individuals could have a broad and positive impact on the US science, engineering, and education workforce. NSF has been responsive to recommended actions contained in our individual research misconduct investigation reports. However, such agency actions only address incidents after the fact. Extrapolation of the number of allegations OIG has received across the 48,000 proposals NSF receives annually, suggests that approximately 1200 proposals could contain plagiarism and up to 800 proposals or NSF-supported research results (e.g., papers and annual/final reports) could contain falsified or fabricated data. Since NSF funds research in virtually every non-medical research discipline, and its funding reaches the educational range of kindergarten through post-Ph.D., the agency is in a unique position to lead the government response to these disturbing trends and have an impact across all levels of education.

OIG's Assessment of the Agency's Progress: The agency responded to the America COMPETES Act by creating a requirement that grantees submit mentoring plans for all NSF-supported postdoctoral positions and by requiring that grantees provide appropriate training and oversight in the responsible and ethical conduct of research to undergraduate students, graduate students, and postdoctoral researchers participating in the proposed NSF-funded research project. However, in contrast to the RCR requirements adopted by NIH in 2010, those implemented by NSF do not have specific course requirements, nor do they provide guidance about the content, structure, or format of the courses.

Other actions the agency has taken include the development of a new ethics research program called Cultivating Cultures for Ethical Science Technology Engineering Mathematics (CCE STEM). The CCE STEM research effort is focused on identifying the factors that create climates that foster and encourage research integrity rather than focusing on curriculum development on integrity issues. The Agency also worked with the National Academies to develop and make available ethics materials that will be applicable across all scientific fields that NSF supports.

OIG has developed a plan to systematically review RCR plans that were initiated as a result of the NSF's implementation of the America COMPETES Act. We have requested RCR plans from 50 random grantee institutions, and have so far reviewed about one half of the plans. To date, OIG has observed a broad disparity among grantee responses to the RCR requirement, which range from high-quality mentoring programs, to programs that simply refer students to web-

based training, to schools that are unaware of the RCR requirement. Early educational intervention remains critical to any effort to ensure that students understand proper professional practices and the implications of failing to follow them.

OIG continues to receive substantive data fabrication/falsification allegations involving students, post-docs, and faculty. We currently have 38 active investigations regarding such allegations, an increase of 58% over the previous year. Therefore, we believe that more needs to be done to address this problem, and NSF should exert its influence with institutions regarding this important issue.

Statistical Data

Audit Data

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	\$11,714,680
B.	Recommendations that were issued during the reporting period	\$0
C.	Adjustments related to prior recommendations	\$0
Subtotal of A+B+C		\$11,714,680
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	\$11,714,680
For which no management decision was made within 6 months of issuance		\$11,714,680

Audit Reports Issued with Questioned Costs

		Number of Reports	Questioned Costs	Unsupported Costs
A.	For which no management decision has been made by the commencement of the reporting period	17	\$15,985,655	\$2,557,788
B.	That were issued during the reporting period	8	\$1,966,749	\$16,023
C.	Adjustment related to prior recommendations		\$0	\$0
Subtotal of A+B+C			\$17,952,404	\$2,573,811
D.	For which a management decision was made during the reporting period	10	\$8,984,678	\$270,955
	dollar value of disallowed costs	N/A	\$432,623	N/A
	dollar value of costs not disallowed	N/A	\$8,552,055	N/A
E.	For which no management decision had been made by the end of the reporting period	15	\$8,967,726	\$2,302,856
For which no management decision was made within 6 months of issuance		7	\$7,000,977	\$2,286,833

Status of Recommendations that Involve Internal NSF Management Operations

Open Recommendations (as of 03/31/2015)	
Recommendations Open at the Beginning of the Reporting Period	101
New Recommendations Made During Reporting Period	20
Total Recommendations to be Addressed	121
Management Resolution of Recommendations²⁷	
Awaiting Resolution	28
Resolved Consistent With OIG Recommendations	76
Management Decision That No Action is Required	0
Final Action on OIG Recommendations²⁸	
Final Action Completed	4
Recommendations Open at End of Period (09/30/2015)	117

Age of Open Recommendations

Awaiting Management Resolution	
0 through 6 months	11
7 through 12 months	6
More than 12 months	11
Awaiting Final Action After Resolution	
0 through 6 months	7
7 through 12 months	33
More than 12 months	49

27 "Management Resolution" occurs when the OIG and NSF management agree on the corrective action plan that will be implemented in response to the audit recommendation.

28 "Final Action" occurs when management has completed all actions it agreed to in the corrective action plan.

List of Reports

OIG and CPA-Performed Reviews²⁹

Report Number	Subject	Questioned Costs	Unsupported Costs	Better Use of Funds
15-1-017	Labor Effort Reporting under the Federal Demonstration Project's Pilot Payroll Certification Program at George Mason University	\$0	\$0	\$0
15-1-018	Polar Field Services Incurred Cost Audits for FYs	\$0	\$0	\$0
15-1-019	Indiana University	\$830,008	\$0	\$0
15-1-020	Stanford University	\$337,377	\$0	\$0
15-1-021	Florida State University	\$568,130	\$0	\$0
15-1-022	Carnegie Mellon University	\$149,672	\$0	\$0
15-1-023	Labor Effort Reporting under the Federal Demonstration Partnership Pilot Payroll Certification at Michigan Technological University	\$0	\$0	\$0
15-2-007	Audit of NSF's Compliance with the Improper Payments Elimination and Recovery Act for FY 2014	\$0	\$0	\$0
15-2-008	REVISED Audit of NSF's Travel Card Program	\$0	\$0	\$0
15-2-009	Audit of Health and Safety in the U.S. Antarctic Program	\$0	\$0	\$0
15-3-001	NSF's Management of Potential \$80 Million Cost Overrun for NEON	\$0	\$0	\$0
15-3-002	Review of NSF Workers' Compensation Cases	\$0	\$0	\$0
15-6-004	DCAA's Letter of Observations on the Need for NSF to Require the Tracking of Contingency Expenditures on Construction Projects	\$0	\$0	\$0
15-7-001	IQCR of UAF (#15-1-002)	\$0	\$0	\$0
15-7-002	IQCR of MSU (#15-1-003)	\$0	\$0	\$0
N/A	NSF's Management Fee Policy			
	Total: 16	\$1,885,187	\$0	\$0

²⁹ The Office issued 16 reports this semiannual period.

NSF-Cognizant Reports

Report Number	Subject	Questioned Costs	Unsupported Costs
15-4-059	9-14 Teachers Development Group - OR	\$0	\$0
15-4-060	6-14 The Ecological Society of America - DC	\$0	\$0
15-4-064	6-14 Friends of North Carolina State Museum of Natural Sciences - NC	\$0	\$0
15-4-065	6-14 The Computing Research Association - DC	\$0	\$0
15-4-066	6-14 Island Institute - ME	\$0	\$0
15-4-067	6-14 QEMN Quality Education for Minorities Network - DC	\$0	\$0
15-4-068	12-14 New England Aquarium Corporation - MA	\$0	\$0
15-4-069	6-14 Bishop Museum & Related Entity - HI	\$0	\$0
15-4-070	6-14 MPC Corporation - PA	\$0	\$0
15-4-071	6-14 SoundVision Productions - CA	\$0	\$0
15-4-072	6-13 The Filmmakers Collaborative, Inc. - MA	\$0	\$0
15-4-073	6-14 The Filmmakers Collaborative, Inc. - MA	\$0	\$0
15-4-075	9-14 AUJ Associated Universities, Inc. - DC	\$0	\$0
15-4-076	12-14 Denver Museum of Nature & Science - CO	\$0	\$0
15-4-077	9-14 Virtual Astronomical Observatory - DC	\$0	\$0
15-4-078	12-14 American Physical Society - MD	\$0	\$0
15-4-079	12-14 Missouri Botanical Garden - MO	\$0	\$0
15-4-080	12-14 The Chicago Zoological Society - IL	\$0	\$0
15-4-081	6-14 The Woods Hole Research Center, Inc. - MA	\$0	\$0
15-4-082	12-14 American Mathematical Society - RI	\$0	\$0
15-4-083	9-14 COL Consortium for Ocean Leadership - DC	\$0	\$0
15-4-084	8-14 Association of American Geographers - DC	\$0	\$0
15-4-085	12-14 International Computer Science Institute - CA	\$0	\$0
15-4-086	9-14 California Institute of Technology - CA	\$0	\$0
15-4-087	12-14 BIOS Bermuda Institute of Ocean Sciences - NY	\$0	\$0
15-4-088	12-14 Association for Institutional Research, Inc. - FL	\$0	\$0
15-4-089	12-14 UCAID University Corporation for Advanced Internet Development - MI	\$0	\$0
15-4-090	12-14 Mobile Area Educational Foundation, Inc. - AL	\$0	\$0
15-4-091	12-14 REJECTED Open Source Robotics Foundation - CA	\$0	\$0
15-4-092	12-14 American Geophysical Union - DC	\$0	\$0
15-4-093	12-14 Bay Area Video Coalition - CA	\$0	\$0
15-4-094	12-14 Connor Prairie Museum, Inc. & Connor Prairie Foundation - IN	\$0	\$0
15-4-095	12-13 REVISED AIM American Institute of Mathematics - CA	\$0	\$0
15-4-096	12-14 SCOR Scientific Committee on Oceanic Research - DE	\$0	\$0
15-4-097	12-14 The American Physiological Society - MD	\$0	\$0

15-4-098	12-14 TERC Technical Education Research Centers, Inc. - MA	\$0	\$0
15-4-099	12-14 Field Museum of Natural History - IL	\$0	\$0
15-4-100	12-14 The Mathematical Association of America - DC	\$0	\$0
15-4-101	12-14 American Association of Community Colleges - DC	\$0	\$0
15-4-102	12-14 The Samuel Roberts Noble Foundation, Inc. - OK	\$0	\$0
15-4-103	9-14 Pacific Resources for Education and Learning - HI	\$0	\$0
15-4-104	12-14 Biological Sciences Curriculum Study - CO	\$0	\$0
15-4-105	12-14 American Educational Research Association - DC	\$0	\$0
	Total:	\$0	\$0

Other Federal Reports

Report Number	Subject	Questioned Costs	Unsupported Costs
15-5-040	6-14 State of Louisiana	\$820	\$0
15-5-049	6-14 Paine College - GA	\$177	\$177
15-5-093	12-14 National Academy of Sciences - DC	\$64,719	\$0
15-5-094	9-14 J.F. Drake Community and Technical College - AL	\$15,846	\$15,846
	Total:	\$81,562	\$16,023

Audit Reports With Outstanding Management Decisions

This section identifies audit reports involving questioned costs, and funds put to better use where management had not made a final decision on the corrective action necessary for report resolution with six months of the report's issue date. At the end of the reporting period there were 8 reports remaining that met this condition. The status of recommendations that involve internal NSF management is described on page 60.

Report Number	Subject	Questioned Costs	Unsupported Costs	Better Use of Funds
09-1-014	University of Michigan	\$1,604,713	\$1,418,889	\$0
09-5-048	8-07 College of the Mainland - TX ³⁰	\$110,629	\$0	\$0
13-1-002	Jackson State University	\$943,475	\$844,241	\$0
13-1-004	ARRA Cornell University	\$794,221	\$19,703	\$0
14-1-005	Audit of AURA Cost Book Evaluation for the Rebaselined ATST/DKIST Project	\$0	\$0	\$11,714,680
15-1-012	University of California, Berkeley	\$1,863,351	\$4,000	\$0
15-1-014	ARRA University of Wisconsin - Madison	\$1,669,588	\$0	\$0
15-4-057	9-14 NEON National Ecological Observatory Network - CO	\$15,000	\$0	\$0
	Total:	\$7,000,977	\$2,286,833	\$11,714,680

³⁰ This report was on hold until April 7, 2015, at the request of OIG.

Investigative Activities

Referrals to Prosecutors	3
Criminal Convictions/Pleas	8
Arrests	0
Civil Settlements	5
Indictments/Information	4
Investigative Recoveries	\$5,092,561.12 ³¹
Referrals to NSF Management for Action	27
Research Misconduct Findings	2
Suspensions/Debarments/Exclusions	7
Administrative Actions	33
Certifications and Assurances Received ³²	20

Investigative Case Statistics

	<u>Preliminary</u>	<u>Civil/Criminal</u>	<u>Administrative</u>
Active at Beginning of Period	5	106	114
Opened	7	40	33
Closed	9	37	29
Active at End of Period	3	109	118

Freedom of Information Act and Privacy Act Requests

Our office responds to requests for information contained in our files under the freedom of Information Act (“FOIA,” 5 U.S.C. § 552) and the Privacy Act (5 U.S.C. § 552a). During this reporting period:

- Requests Received 7
- Requests Processed 6
- Appeals Received 0
- Appeals Upheld 0

Response times ranged between 1 day and 67³³ days, with the median around 17.5 days and the average around 23.2 days.

³¹ During the most recent reporting period, one NSF award that had been suspended per our recommendation was terminated by NSF, when the award expired, putting the remaining funds to better use. We did not learn of these recovered funds until this reporting period. This total includes these previously unreported funds.

³² NSF accompanies some actions with a certification and/or assurance requirement. For example, for a specified period, the subject may be required to confidentially submit to OIG a personal certification and/or institutional assurance that any newly submitted NSF proposal does not contain anything that violates NSF regulations.

³³ One FOIA request was considered “complex” and took much longer than typical to process. If we exclude that request, the median was around 16 days and the average was around 14.4 days.

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