



SEMIANNUAL  
REPORT TO  
CONGRESS  
MARCH 2015

### ***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 35,000 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 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.

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# From the Inspector General

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This Semiannual Report to Congress highlights the activities of the National Science Foundation (NSF), Office of Inspector General (OIG) for the six month period ending March 31, 2015. During this reporting period, 15 audit reports and reviews were issued, four of which questioned \$5.4 million. Our investigative staff participated in two criminal trials, closed 78 administrative and criminal/civil investigations, had seven research misconduct cases result in findings by NSF, and recovered \$2,661,983 for the government.

We continue to direct significant attention to NSF's management and oversight of its high-dollar, high-risk cooperative agreements. The Foundation's FY 2014 Financial Statement Audit cited a significant deficiency in NSF's monitoring of cooperative agreements for large facility construction projects, which has been reported as a significant deficiency each year beginning in FY 2010. For nearly five years, based on a large body of audit work, our office has been urging NSF to strengthen accountability over its high-dollar, high-risk cooperative agreements for large construction projects by requiring audits of cost proposals before approving awards and by requiring annual audits of incurred costs, among other things.

During this period the NSF Audit Follow-up Official committed the agency to take several actions to address our recommendations, including improving policies for large facility construction projects. Many of the proposed actions are planned for future projects. The agency has indicated that it will provide information about the extent to which it will expand the actions planned for future awards to cover current projects (at the construction and/or operational phase) by September 2015. We will continue to work with NSF in this area and to monitor its progress toward strengthening accountability over its large facility construction projects.

Our investigative work continues to focus on 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 reward. While the vast majority of individuals and companies tell the truth in their proposals and reports and spend funds properly, our investigations continue to find companies that engage in fraud or other wrongdoing.

During this reporting period, two Florida scientists were convicted following a jury trial in March 2015 on 15 counts including wire fraud, identity theft, and falsification of records in a federal investigation. The

scientists used two companies to fraudulently obtain SBIR awards from NSF and other federal agencies, totaling \$10 million. In addition, a South Dakota small business owner was found guilty of wire fraud and making false claims, among other things in a November 2014 jury trial. The company owner lied when he certified to NSF that a PI was primarily employed by the company, as required by the STTR program. The owner also converted most of a \$100,000 payment from NSF to his personal use.

We share a mutual goal with the Foundation and with the Congress to ensure that Federal tax dollars intended to support scientific research are spent properly and comply with federal requirements and award terms and conditions. Our independent audits, investigations, and other work reflect our robust and sustained commitment to this goal.

*Allison C. Lerner*

# Report Highlights

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- An audit of the accounting system for the National Ecological Observatory Network, an NSF awardee, found an end-to-end gap in accountability over contingency funds. The audit also found that NSF needs to improve accountability over management fees by more closely monitoring awardees' use of such funds.
- The FY 2014 audit of NSF's financial statements cited a significant deficiency in NSF's monitoring of cooperative agreements for large construction projects, which has been reported as a significant deficiency each year, since the FY 2010 financial statement audit. For nearly five years, based on a large body of audit effort, the OIG has been urging NSF to strengthen accountability over its high-risk, high-dollar cooperative agreements for large construction projects.
- Following a jury trial, two Florida scientists were convicted on 15 counts including wire fraud, identify theft, and falsification of records in a federal investigation. The scientists used two companies to fraudulently obtain SBIR and STTR awards from NSF and other federal agencies totaling approximately \$10.5 million. In their proposals, the scientists misrepresented their facilities, employees, costs, and the eligibility of PIs. In addition, they fraudulently used the identities of prominent researchers and industry participants to fabricate false letters of support, endorsements, and commitments to participate in the awards, which were included in the proposals.
- We analyzed over 8,000 proposals awarded by NSF in FY 2011 for evidence of plagiarism, and investigated those which appeared serious. We opened 34 plagiarism investigations, ten of which have resulted in NSF making findings of research misconduct. So far, we have recovered \$357,602 in federal funds from these investigations.

# Audits & Reviews

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## ***Deficiencies Found in Awardee's Accounting System for NSF Funds***

A 2012 audit of the National Ecological Observatory Network Inc.'s (NEON) \$433.7 million proposed construction budget rendered an adverse opinion because the proposal did not form an acceptable basis for the negotiation of a fair and reasonable price. The audit disclosed more than \$154 million in questioned and unsupported costs (nearly 36 percent of the total proposed costs).

Because of the significant problems found in the proposed budget, a post-award audit of NEON's accounting system was conducted to determine if it complied with grant terms. Accounting system audits are essential tools to ensure that an awardee has the capacity to manage federal funds in accordance with federal requirements. The audit rendered an adverse opinion because three instances of material noncompliance with grant terms were found. Specifically, the audit found that NEON's indirect cost structure and one of its accounting practices did not comply with federal requirements. In addition, NEON's practice of recording hourly time charges did not comply with its written policies. NEON addressed the indirect cost structure issue and its accounting practices during the audit and agreed to correct the third issue by revising its policy for recording hourly time charges.

The auditors also attempted to determine if NEON's accounting system properly accounted for contingency costs in accordance with applicable regulations. They were unable to reach a conclusion because they could not determine how much of NEON's \$74.2 million in contingency costs claimed from August 2011 to March 2013, may have been expended for unapproved scope changes.

In conjunction with this report, auditors also issued Observations that Warrant Attention of the NSF-OIG, which is described below.

### ***NSF Needs to Ensure that Awardees Improve Accountability Over Contingency Funds and Management Fees***

A prior proposal audit found that NEON did not provide fully supported bases of estimate for proposed contingencies before including them in awards. The associated accounting system audit found that NSF grant terms did not require NEON to track the actual use of contingency funds in its accounting records, nor do federal regulations specifically address tracking contingency funds. As a result, the auditors found that NSF lacks both support for the significant amounts of contingencies included in awards and documentation to support how contingency funds are spent. The absence of this information means that there is a significant end-to-end gap in accountability over contingency funds that NSF entrusts its awardees to manage. The auditors noted that requiring adequate supporting documentation for proposed contingencies and tracking how they are spent would provide NSF with more robust oversight and strengthened stewardship of taxpayer funds.

Auditors also found that NSF needs to improve accountability over management fees by more closely monitoring awardees' use of such fees. A review of NEON's use of management fee found that NEON billed NSF for unallowable costs including \$112,000 for lobbying; \$83,000 for "business development"; \$25,000 for a holiday party; \$11,000 for a coffee service for employees; and \$3,000 for Board of Directors' dinners (which included alcohol).

Finally, auditors concluded that NSF should require its awardees to provide a mechanism for their employees to report suspected fraud, waste, abuse, and non-compliance with federal requirements to the OIG.

The auditors recommended that NSF: 1) require awardees to track contingency use; adequately support contingency amounts in awards or hold contingency funds until awardees demonstrate a bona fide need for such funds, which is fully supported; 2) strengthen monitoring and controls over awarded contingency funds; and 3) more closely monitor use of all management fees.

### ***NSF Should Obtain Audits of Estimating and Accounting Systems at Non-Profit Managing Large Projects***

We issued two reports on the Association of Universities for Research in Astronomy (AURA), a non-profit which is managing the construction of two large telescope projects with combined proposed costs of \$811 million. The first report was a pre-award follow-up audit on AURA's accounting system deficiencies, which were cited in a prior 2011 audit. However, the 2011 audit was a combined pre-award audit of AURA's



accounting system and estimating practices<sup>1</sup>. While the pre-award follow-up concluded that AURA had corrected significant deficiencies in the design of its accounting system, it did not address AURA's estimating system deficiencies noted in the initial 2011 audit.

The second report was a related OIG report to emphasize that no post-award accounting system or estimating system audit had been conducted at AURA. Because of the very large sums AURA will manage for these two construction projects, and in light of another recent audit, which disclosed estimating deficiencies that resulted in a disclaimer of opinion on AURA's \$344 million proposal for the Daniel K. Inouye Solar Telescope, OIG reiterated recommendations from prior audits of proposed costs for the projects.

We recommended that NSF obtain 1) an audit of AURA's estimating system to determine if its estimating practice deficiencies have been corrected, and if it has a system that consistently produces verifiable, supported, and timely cost estimates, which are acceptable as a basis for negotiation of fair and reasonable prices; and 2) a post-award accounting system audit to determine if AURA has implemented its written accounting procedures adequately, and to ensure that AURA's accounting system complies with grant terms. OIG has forwarded both reports to NSF for audit resolution.

## Audits of NSF Awardees

Four audits were conducted of NSF awardees which had expended a total of \$979 million, of which \$69 million was Recovery Act funds, to determine the reasonableness, allowability, and allocability of costs. Auditors found that Recovery Act funds were properly accounted for and segregated, as required by law.

However, the audits identified more than \$4.6 million of questioned costs because each of the institutions audited — University of Florida, University of California at Berkeley, University of Wisconsin (Madison), and Michigan State — charged salaries to NSF awards which exceeded NSF's compensation limit for senior project personnel.

More than \$1.6 million in salaries of senior personnel that exceeded the two months of proposed salary allowable under NSF's policy was questioned at the University of California at Berkeley and nearly \$1.3 million was questioned at University of Wisconsin at Madison for the same reason. Approximately \$900,000 in senior personnel salaries was questioned at both of the other two institutions where audits

<sup>1</sup> Audit Report No. 11-1-010, Audit of Association of Universities for Research in Astronomy, Inc.'s/National Optical Astronomy Observatories' (NOAO) Accounting System and Proposal Estimating Practices, March 31, 2011.

were completed during this period. In response to these findings, the institutions stated that they relied on NSF's "Frequently Asked Questions" document, which stated that an awardee, under normal rebudgeting authority, could approve an increase in person months devoted to the project after an award had been made.

In addition to costs questioned for salaries exceeding NSF limits, other questioned costs included those related to equipment costs that were not well supported or equipment costs which were either unnecessary or did not appear to benefit the NSF award; consulting expenses; unallowable relocation expenses; a disproportionate amount of accumulated leave being charged to NSF awards; and certain travel expenses.

Recommendations were made for NSF to require the institutions to repay the questioned costs. The institutions generally agreed with the recommendations pertaining to questioned costs with the exception of those relating to senior personnel salaries' costs. NSF is in the process of resolving the recommendations.

***University of Alaska Fairbanks Generally Complied with Recovery Act Requirements, but Lacked Required Documentation to Support Approval of Expenditure of Nearly \$4.8 Million***

We conducted an audit of NSF's management and oversight of the Sikuliaq construction project in light of the large amount of Recovery Act funds awarded and because previous audits found unallowable contingency at other NSF awardees. Therefore, this audit included reviewing change order requests for contingency funds as well as other project funds to determine if such requests were executed properly and were supported by required documentation.

We found that due to moving its email system to a different provider, the University of Alaska Fairbanks' (UAF) did not have the required documentation to support approval for ten change order requests totaling nearly \$4.8 million. NSF approval was required for all change orders valued at \$50,000 or higher, and OMB requires awardees to retain "financial records, supporting documents, statistical records, and all other records pertinent to an award...for three years." NSF's internal policy also requires awardees to maintain certain documentation including "change requests and approvals." Retaining this documentation is an important project management tool for monitoring overall project costs and for tracking the use of contingency funds.

We concluded that UAF generally complied with the Recovery Act requirements. The university agreed with the recommendation to retain required documentation needed to support approval for change orders and is working with NSF to implement the recommendation.

## ***NSF Needs to Strengthen Information Technology Controls***

The Federal Information Security Management Act (FISMA) requires the Office of Inspector General (OIG) to conduct an independent evaluation to assess the effectiveness of NSF's information security program and practices and to determine compliance with FISMA requirements.

Areas reviewed in FY 2014 included NSF's financial accounting and grants management systems and the NSF website as well as systems supporting NSF's United States Antarctic Program (USAP).

The FY 2014 evaluation included a total of nineteen findings; eight new findings and eleven repeat findings from prior years. Three of the repeat findings are from FY 2010 or earlier. Two of these findings, both from FY 2006, pertained to USAP, which is managed by the Division of Polar Programs and its contractor Lockheed Martin. Valued at nearly \$2 billion over 13 years, the Antarctic Support Contract is NSF's largest contract. The findings related to USAP's operating environment and disaster recovery plans. The third such finding, from FY 2010, pertained to NSF's controls for ensuring that IT access for separated employees and contractors was terminated in a timely manner.

Other repeat findings included weaknesses in NSF's IT configuration management controls, which increase risk that unauthorized changes could occur and go undetected, and weaknesses in incident response controls, which could lead to unauthorized access to sensitive information.

The eight new findings cited in the FY 2014 report included six findings for NSF and two for USAP. Findings for NSF included weaknesses in contingency planning, which could increase the risk that systems may not be adequately restored in a timely manner during disasters, and delays in correcting critical system vulnerabilities, which increase the risk of IT systems being compromised. The new findings for the USAP related to weaknesses in controls to disable inactive accounts, which increase the risk that individuals may obtain unauthorized access to USAP systems, and inconsistent screening of personal computers.

NSF depends on computerized information systems to execute its scientific research and operations and to process, maintain, and report essential information. Reliability of computerized data and systems is essential and protecting information systems continues to be a challenge for NSF. The FY 2014 FISMA report recommends a number of actions necessary for NSF to continue to strengthen IT security.

## Financial Statement Audit Reports

Establishing and maintaining sound financial management is a top priority for the federal government because agencies need accurate and timely information to make decisions about budget, policy, and operations. The Chief Financial Officer's Act requires agencies to prepare annual financial statements which must be audited by an independent entity.

### ***NSF's FY 2014 Financial Statement Audit Finds Significant Deficiencies in Monitoring of Cooperative Agreements for Large Construction Projects and the Grant Accrual Accounting Process***

Under a contract with the OIG, CliftonLarsenAllen (CLA) conducted an audit of NSF's FY 2014 financial statements. CLA issued an unqualified opinion on the financial statements; however, the auditors reported two significant deficiencies in NSF's internal controls. The first significant deficiency was monitoring of cooperative agreements for large construction projects, which has been cited as a significant deficiency each year beginning in FY 2010. The second significant deficiency pertained to NSF's grant accrual accounting estimation process.

The auditors stated that due to substantial disagreement between OIG and NSF over resolution of issues related to NSF's management of large facility construction agreements, in May 2014 OIG escalated the recommendations to NSF's Audit Follow-up official. In addition to the conditions noted in prior year audits, the FY 2014 financial statement audit referenced the following findings:

- Review of a large NSF construction-type cooperative agreement at a non-profit entity showed that NSF approved the project without sufficient information to determine the reasonableness of the estimated project costs<sup>2</sup>;
- The audit of a cooperative agreement relating to a large construction project with contingency funding resulted in a disclaimer of opinion on the adequacy of the cost proposal due to the significance of the cost estimating deficiencies found in the proposal, including unsupported estimates, outdated vendor quotes, and unallowable contingencies<sup>3</sup>;
- Awardees continued to be able to draw down contingency funds without prior approval by NSF; and

<sup>2</sup> NSF's Management of Costs Proposed for the Large Synoptic Telescope, OIG Report 14-3-002, issued September 30, 2014.

<sup>3</sup> AURA's Rebaselined DKIST/ATST Cost Book Proposal, OIG Report 14-1-005, issued September 30, 2014.

- NSF does not require awardees to track the expenditure of contingency funds, resulting in NSF's inability to ensure that the expenditures are in line with the awarded budget amounts.

The second significant deficiency reported by the auditors in FY 2014 concerns NSF's accounting estimation process for its accrued grant liability (i.e., the estimate of grantee expenditures incurred, but not yet reported to or drawn from NSF). Accounting principles generally accepted in the U.S. require entities to prepare financial statements on an accrual basis and to validate the assumptions made in determining significant estimates included in those financial statements.

In the FY 2013 Management Letter, the auditors raised concerns regarding NSF's methodology for estimating its accrued grant liability in response to the implementation of a new cash management system (ACM\$) in FY 2013. Upon implementation of ACM\$, long-standing historical data reported by grantees and used by NSF to estimate its accrued grant liability could no longer be utilized in the same manner. This situation required NSF to revise its methodology for estimating the accrued grant liability. However, historical grantee spending data under ACM\$ was limited and inconclusive for NSF to use in confidently estimating grantee spending patterns and the accrued grant liability for FY 2013. As a result, the method NSF used in FY 2013 was not sufficient to adequately validate the accrued grant liability amount.

In response to these concerns, during FY 2014 NSF performed a statistical validation of the accrual as of September 30, 2013. As a result, NSF determined that the FY 2013 accrual should have been significantly higher than was reported in the financial statements for that year. A substantial portion of the misstatement was caused by NSF's failure to give full consideration to all grantee spending data available to NSF during the preparation of its FY 2013 financial statements.

Following the results of the FY 2013 statistical validation process, NSF performed a similar statistically-based calculation to determine its accrued grant liability at September 30, 2014. However, due to the short time that ACM\$ has been in place, NSF has been unable to fully evaluate grantee spending patterns for use in developing a reliable methodology to estimate its accrued grant liability in FY 2015 and forward. Also, due to reporting deadlines in future years, NSF will not be able to perform similar calculations at future fiscal year ends. Therefore, NSF must take additional measures to develop a reliable methodology, based on historical data, to estimate its future accrued grant liability.

NSF stated that it will continue to work to strengthen its controls for awarding and managing construction-type cooperative agreements. Also, in noting its continued disagreement with this significant deficiency, NSF

stated that certain recommendations remain open pending the review of the NSF Audit Follow-up Official. In January 2015, the Audit Follow-up Official issued a final determination on the escalated recommendations. NSF generally agreed with the findings and recommendations concerning its accounting estimation process for grant expenditures and stated its commitment to further improving this process. A copy of NSF's full response is published in its FY 2014 Agency Financial Report.

## **FY 2014 Management Letter**

The auditors also issued a Management Letter in conjunction with the financial statement audit report. The purpose of this document is to communicate findings that are not included in the audit report but are important to ensuring a sound overall internal control structure and require management's attention.

Among other things, the FY 2014 Management Letter stated that NSF needed to continue to improve its policies for awarding and administering cost reimbursement contracts. Auditors recommended that NSF focus on identifying cost reimbursement contracts that need to have cost incurred audits conducted to determine if costs claimed are valid.

NSF generally concurred with the recommendations in the Management Letter and is working to resolve the findings. The FY 2015 financial statement audit will evaluate the adequacy of NSF's actions in response to the recommendations.

## **A-133 Audits**

### ***Single Audits Identify Late or Inaccurate Reporting at Forty-three 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 103 audit reports reviewed and referred<sup>4</sup> to NSF's Cost Analysis and Audit Resolution (CAAR) Branch this period covered NSF expenditures of \$1.5 Billion as reported in the annual Single Audits during audit years 2013 and 2014, and resulted in 50 findings at 31 NSF awardees. The auditors disclaimed an opinion on the financial statements of one awardee. In addition, three awardees received qualified opinions on their compliance with federal grant requirements.

Fifteen of the 50 findings (30 percent), at 13 of the 31 awardees with findings (42 percent), resulted from untimely or inaccurate submission of financial and/or progress reports. Two of the 15 findings had been repeated for the 3rd consecutive year, calling into question the awardees' ability to adequately manage their NSF awards.

Awardees' lack of internal controls and noncompliance with federal requirements also included: untimely and/or incorrect reporting of time and effort; 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-Third 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 61 audit reports<sup>5</sup> for which NSF was identified as the cognizant or oversight agency for audit, and found that 40 fully met federal reporting requirements. Twenty-one reports (34 percent) contained audit quality and timeliness issues. The quality issues we identified included six 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. In addition, five reports inadequately presented the elements of the audit findings and/or the elements of the auditee management's plan to correct the

<sup>4</sup> The auditors revised one report in response to our desk review letter and resubmitted the report during the period. The revised report is included in the total number of 103.

<sup>5</sup> The audits were conducted by 45 independent public accounting firms.

deficiencies reported. Five reports were submitted to the Federal Audit Clearinghouse with an inaccurate Data Collection Form (Form SF-SAC). Finally, three reports were filed after the deadline established in OMB Circular A-133.

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. After completion of all 61 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 Sustains \$1.5 million of Questioned Costs on Raytheon Contract for U.S. Antarctic Program***

In response to our recommendations, NSF sustained \$1.5 million of the \$1.9 million of questioned fringe benefit and general and administrative costs that Raytheon, the logistical support contractor for NSF's Antarctic Program from FY 2000-FY 2012, claimed in FY 2002. The resolution of these costs completes the resolution of all \$56 million questioned on audits of the contract from FY 2000-2004. The settlement of all sustained costs for these audits will occur after Raytheon's final invoice is audited, and when NSF closes out the contract.

### ***NSF Sustains \$19.8 Million of Questioned Funds in Proposed Budget for the National Ecological Observatory Network***

NSF sustained about \$20 million of costs questioned in a pre-award audit of the proposal budget for the National Ecological Observatory Network (NEON). Unallowable proposed costs included \$8.5 million of equipment costs, \$4.3 million of escalation costs, \$5.6 million of other direct costs, and \$1.4 million of indirect costs.

### ***Office of Audit Quality Control System Passes External Peer Review***

During this semiannual period, the Office of Audit successfully passed external peer review for the year ended September 30, 2014. The review was conducted by the Amtrak Office of Inspector General, which found that the Office's quality control system provided reasonable assurance that it complied with professional standards and applicable legal and regulatory requirements.



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

## **White Paper on Management Fees**

As part of our review of management fees in NSF awards, we issued a white paper in November 2014 which detailed the historical context giving rise to management fees and NSF management fee policy and practices, among other things. As non-profit entities almost wholly dependent upon government funding, Federally Funded Research and Development Centers (FFRDC), which were created in the 1960s to perform research and development and to provide services the government was unable to undertake, could incur costs that could not be reimbursed. The concept of a management fee was developed to bridge the gap between what could be reimbursed under the award as a direct or indirect cost and what could not be reimbursed, but was still needed.

Concerns about the use of management fees to cover FFRDC's non-reimbursable costs have arisen since their inception. As a result of these persistent concerns, the Government Accountability Office has recommended that since federal agencies have attempted to address concerns about FFRDCs' management fees in a variety of ways government-wide guidelines should be established.

NSF has reported that between FY 2010 and FY 2013, the total amount of management fees awarded for six recipients was approximately \$4.9 million. NSF has stated that because it views fees awarded as "discretionary funds," the Foundation does not require awardees to report how those funds are spent and thus it does not require awardees to submit an accounting of how management fees may be used to cover otherwise unallowable costs. NSF has revised its policy on management fee, and the proposed policy was published in the Federal Register on December 30, 2014. OIG provided observations on the draft policy to NSF in a January 29, 2015, memo. NSF forwarded updates to the policy based on public comments to OMB on March 16, 2015. OIG will review the management fee policy once it is final.



## Civil and Criminal Investigations

### ***Two Florida Scientists Convicted on All Counts for SBIR Fraud***

We previously reported<sup>6</sup> that two Florida scientists were indicted for seven counts of wire fraud, one count of conspiracy to commit wire fraud, five counts of aggravated identity theft, and two counts of falsification of records in a federal investigation. Following a four-week jury trial, both scientists were convicted on all 15 counts.

The scientists used two companies to fraudulently obtain SBIR and STTR awards from NSF and other federal agencies totaling approximately \$10.5 million. In their proposals, the scientists misrepresented their facilities, employees, costs, and the eligibility of PIs. In addition, they fraudulently used the identities of prominent researchers and industry participants to fabricate false letters of support, endorsements, and commitments to participate in the awards, which were included in the proposals.

The case arose from a proactive investigative review of SBIR and STTR companies. In response to our request for information, the scientists provided falsified and backdated documents, including a joint venture agreement and timesheets, in an attempt to influence our investigation.

The case was jointly investigated with the Army Criminal Investigation Command and OIGs for DoD, NASA, DOE, DHS, and EPA. Sentencing will occur summer 2015.

### ***South Carolina Man Pleads Guilty to Theft of NSF SBIR Award Funds***

A PI, who previously was indicted for false claims, false statements and theft<sup>7</sup>, pled guilty to theft in relation to false effort information he provided in official project reports submitted to NSF to obtain grant payments. He was sentenced to three years of probation and fined \$5,000.

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<sup>6</sup> September 2014 Semiannual Report, pp.19-20.

<sup>7</sup> September 2013 Semiannual Report, p.15.

### ***South Dakota Man Convicted for Fraudulently Obtaining Award Money from NSF STTR Program***

We previously reported<sup>8</sup> that a South Dakota small business owner was indicted for falsely certifying the hiring of a PI for an STTR project and converting the majority of the award funds for personal gain. Following a jury trial, the business owner was found guilty of one count of receipt of stolen government money and two counts each of false statements, false claims, and wire fraud. Sentencing is scheduled for May 2015.

### ***University Agrees to Repay \$497,000 for Alleged Duplicate Funding***

A California university agreed to repay \$497,000 to settle allegations that a PI failed to disclose overlapping funding and submitted duplicate reports for NSF and Department of Energy (DOE) awards — NSF will receive \$111,500 of that amount.

The settlement agreement resulted from mediation among the Department of Justice, DOE, NSF, and the university. The university agreed to institute a three-year compliance program to train employees on the proper administration of federal awards. In addition, for three years, the PI cannot serve as an NSF reviewer and is required to have her NSF proposals and progress reports internally reviewed and certified prior to submission to NSF.

### ***Suspended Awards Terminated, PIs Prosecuted***

In two multi-agency investigations, NSF terminated awards that had been suspended in accordance with our recommendations, resulting in \$567,833 of funds put to better use. In both cases the PIs were prosecuted for charges related to other agencies' awards.

### ***Company Agrees to Civil Settlement for Misrepresenting Its Accounting and Timekeeping Systems***

NSF STTR awards involve a small business awardee that works in partnership with a non-profit research institution subawardee. We previously reported<sup>9</sup> that a university repaid \$54,076 related to unauthorized equipment purchases on an STTR subaward. During this reporting period, the company that received the STTR award repaid \$170,923 in response to allegations that it misrepresented to NSF that its accounting system would separately track the expenditure of grant funds and that time records would be maintained for employees working on the grant.

<sup>8</sup> September 2011 Semiannual Report, p.8.

<sup>9</sup> September 2013 Semiannual Report, p.15.

Although it had not tracked the award funds or maintained time records, the company submitted effort and expenditure information to NSF in its project reports. In addition to the company's repayment, the company's CEO personally repaid \$25,000 and agreed to a 3-year government-wide voluntary exclusion as a part of the settlement.

### ***Former NSF Employee Sentenced to 30 Days Incarceration***

A former NSF employee who had been indicted<sup>10</sup> pled guilty to three counts of felony embezzlement in the local county court and was sentenced to 30 days incarceration, three years' probation, and ordered to pay restitution of \$5,090 to NSF. We recommended that NSF debar the individual for five years, and NSF's decision is pending.

### ***Former NSF Employee Sentenced after Pleading Guilty to One Felony Count of Embezzlement***

An NSF employee, who used her coworker's government purchase card to buy electronic equipment and other items for personal use, had been indicted in the local county court and subsequently resigned from her job at NSF<sup>11</sup>. She pled guilty to one felony count of embezzlement, and was sentenced to: two years' incarceration with both years suspended; two years' probation; 100 hours of community service; and payment of restitution of \$1,940 to NSF. She also agreed to a five-year government-wide voluntary exclusion.

### ***NSF Debars Former Program Officer***

We previously reported<sup>12</sup> that an NSF program officer resigned following an investigation into conflicts of interests and bribery. In this reporting period, NSF followed our recommendation and debarred the former program officer for three years.

### ***SBIR Company Owner Enters Into Pre-Trial Diversion Agreement***

We previously discussed<sup>13</sup> a company owner and the PI of an NSF SBIR awardee company who were indicted based upon proposals, reports, and payment requests they submitted which contained false information. During this semiannual period, the company owner entered into a pre-trial diversion agreement with DOJ, pursuant to which the owner: repaid \$60,000; and for 18 months must regularly report to a pretrial services officer and may not apply or serve as PI on any federal grant.

<sup>10</sup> September 2014 Semiannual Report, p.23

<sup>11</sup> September 2014 Semiannual Report, p.23.

<sup>12</sup> March 2014 Semiannual Report, p.16; September 2014 Semiannual Report, p.24.

<sup>13</sup> March 2013 Semiannual Report, p.23.

### ***Post-Settlement Audit Results in Return of Additional Funds***

As previously reported<sup>14</sup>, a university in the District of Columbia entered into a settlement agreement under which it repaid \$530,000 to NSF for unsupported expenditures on an award. The university also agreed to have an external audit conducted of a related award, and that audit identified \$59,439 of unsupported costs, which the university returned.

### ***College Repays over \$86,000 for Unsupported Costs***

A California college repaid \$86,460 after our investigation identified unsupported expenditures to subcontractors under an NSF award. The college is improving training for employees to help ensure appropriate grant oversight and control.

### ***University Returns \$151,201 to NSF for Terminated Supplemental Award***

Our investigation found that a PI at a New Jersey university continued to spend supplemental award funds after NSF informed him that the award project had been cancelled. The university refunded \$151,201 to NSF.

### ***PI Returns over \$46,000 for Violating Small Business Program Rule***

Our investigation into SBIR and STTR awards made to a Florida small business determined the PI violated the requirement that he must be primarily employed by the company throughout the period of the awards. However, because the violations occurred outside of the applicable statute of limitations, and due to conflicting and missing records of his primary employer, the STTR subawardee, we pursued this matter administratively. We notified the PI of the violations and he returned \$46,397 (the amount of salary he was paid from the grants during the time when he was primarily employed by his university) to NSF.

### ***University Repaid over \$22,000 for Unsupported Costs***

A North Carolina university repaid \$22,183 after our investigation identified unsupported salary expenditures under an NSF award. The university has implemented extra review procedures to improve the accuracy of time and effort reporting for federal grants.

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<sup>14</sup> March 2013 Semiannual Report, p.21.

### ***NSF Debars Professor for Two Years***

We previously reported<sup>15</sup> that a professor at a Tennessee university appealed an NSF finding of research misconduct and a notice of proposed debarment based on plagiarism and receipt of duplicate travel reimbursements. NSF denied the appeal and debarred the professor for two years.

### ***NSF Terminates Previously Suspended Award***

We previously reported<sup>16</sup> that NSF suspended four awards to an institution and two awards to a company due to possible fraud in obtaining, spending, and reporting on NSF and other federal award funds. Two of the suspended awards were terminated previously, and during this reporting period NSF followed our recommendation to terminate the third due to the PI's retirement from the institution, resulting in \$147,335 of funds put to better use. Our investigation is ongoing.

### ***University Repays NSF for Unallocable International Travel Charges***

A California university repaid \$5,787 for international travel expenses a PI and his spouse charged to an NSF award. Our investigation determined that the travel charges for the PI and his spouse, who was also a faculty member, were not allocable to the award for which they were charged. In addition to repaying the funds to NSF, the university agreed to examine its conflict-of-interests policies governing the management of co-workers who are related to one another.

### ***NSF Withholds Final Payment of SBIR Phase II Award Due to Company Ineligibility***

To be eligible to receive an SBIR award, a business must be at least 51 percent owned and controlled by one or more individuals. Our investigation revealed that a New Mexico company which received an SBIR Phase II award was not eligible to receive SBIR funds because it was majority owned by multiple venture capital firms, not individuals. NSF agreed with our recommendation to withhold the final payment due to the company, which resulted in \$73,763 of funds put to better use. Additionally, NSF informed the company that the previously distributed award funds must be repaid. Negotiations on repayment terms are ongoing.

<sup>15</sup> March 2014 Semiannual Report, p.23; September 2014 Semiannual Report, p.30.

<sup>16</sup> March 2014 Semiannual Report, p.20.

## **Administrative Investigations**

### ***Terminated Awards Result in More than \$1 Million Put to Better Use***

Our investigation revealed that a PI with four NSF awards at an Illinois institution had used virtually none of the funds from two of the awards and only a moderate amount from the other two over a several-year period, while claiming significant achievements and support from all awards in his progress reports and publications to NSF.

After we discussed this spending pattern with the NSF program officers, they did not approve the PI's request to transfer the awards to his new institution. The institution terminated two of the awards early and allowed the other two to expire without further drawdowns, resulting in \$1,048,300 of funds put to better use. Our investigation into the grant expenditures is ongoing.

### ***Former Rotator Convicted of Conflict of Interests***

Based on a recent conflict of interests (COI) conviction in California, we recommended that NSF debar a former part-time rotator who served as a program director at NSF. As we noted in a previous semiannual report<sup>17</sup>, the rotator did not disclose his own company or his financial interest in a foreign company to either NSF or his university, while representing the university in a contracting matter involving the foreign company. The former rotator pled guilty in the local county court to a COI violation for his role in the contract between the university and the foreign company. Based on his conviction as well as his previous actions at NSF, we recommended that NSF debar the former rotator and his company for five years. NSF's decision is pending.

### ***Suspension of Award Due to Absence of PI***

We received information that a university failed to properly disclose to NSF the departure of the PI on an NSF award. In response to our recommendation, NSF suspended the award pending the results of our investigation, with \$293,011 remaining unexpended.

### ***Panelist Violated Confidentiality of NSF Review Process***

We concurred with a Pennsylvania university's conclusion that one of its faculty members (the reviewer) violated the confidentiality of NSF's merit review process. NSF asked the reviewer to review ten proposals; he then asked two of his staff to assist him and provided them with access to the proposals to facilitate their reviews. During the university's inquiry, the reviewer admitted what he had done. Because the reviewer

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<sup>17</sup> March 2011 Semiannual Report, p.22.



## Human Subjects Research

Human subjects violations occurring in studies utilizing NSF funds are of great concern to NSF and our office. In accordance with NSF's implementation of the federal policy known as the Common Rule, all projects involving human subjects must either have approval from the organization's Institutional Review Board (IRB) before issuance of the NSF award, or must affirm that the IRB declared the research exempt from IRB oversight.

In past and ongoing cases, we learned about a variety of incidences of IRB-related noncompliance: failure to obtain informed consent; use of unapproved consent forms; overenrollment of participants; inadequate privacy or confidentiality safeguards; failure to obtain IRB approval for changed or revised protocols; insufficient management and oversight of the research by the PI; initiation of human subjects research without finalized IRB approval; threatening and harassing a research participant who withdrew from the study; and falsification of IRB approvals.

In these cases, the institutional IRBs made determinations on corrective action plans such as: remedial training of the PI and research personnel; restrictions on or destruction of the research data collected; scheduled IRB site-visits; requirements to submit a revised or new IRB protocol; and restriction, suspension or termination of human subjects research. In addition, we have recommended suspension or termination of NSF grants when appropriate, which NSF has implemented.

subsequently retired, the university took no action. We recommended that NSF send a letter of reprimand to the subject notifying him that NSF has made a finding that he violated NSF's confidentiality rules for panelists, and prohibit him from serving as a reviewer for one year.

### ***PI Fabricated IRB Approval Document Submitted to NSF***

A PI at a Pennsylvania university fabricated a document showing his project's required IRB approval, and submitted the fabricated document to NSF. The PI admitted he had fabricated the IRB approval and the university has initiated an investigation. In response to our recommendation, NSF suspended the award — with \$1,619,844 unexpended — pending conclusion of our investigation.

### ***NSF Proposed Termination of Two Employees***

In a previous Semiannual Report<sup>18</sup>, we described the actions of two NSF employees: a supervisor who lied to OIG, his supervisors, and his staff and colleagues; and a program officer who released a sensitive document to the press. Based on an analysis of all the facts, NSF proposed termination of both employees, and both retired.

### **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 termination of employment. NSF's actions in research misconduct cases ranged from letters of reprimand to a proposed three-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.

### ***Proactive Review Identifies Plagiarism in Multiple Proposals***

As part of a proactive review, we analyzed over 8,000 proposals awarded by NSF in FY 2011 for evidence of plagiarism. We processed these proposals using commercial plagiarism software, and ranked them by the amount of apparently-copied text. We determined that many proposals contained some amount of copied text, but opened cases only on the more apparently serious violations that might constitute research misconduct.

We opened 34 plagiarism investigations, ten of which have resulted in NSF making findings of research misconduct. From these cases we have recovered \$357,602 in federal funds to date. We issued questionable research practice letters in six cases in which the copying

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<sup>18</sup> September 2014 Semiannual Report, p.17

was considered plagiarism, but did not rise to the level of research misconduct. Ten cases are still pending. One of the pending plagiarism investigations uncovered significant financial issues, and is being pursued for possible civil/criminal prosecution.

Overall, less than one half of one percent of the funded proposals contained enough plagiarism to constitute research misconduct. This percentage is less than the results from our earlier proactive reviews which included declined proposals.

### ***Graduate Student Misrepresents Data to Advisor Who Published It***

A graduate student at a Rhode Island university provided falsified data to his NSF-funded advisor, who included it in a journal article. A reader of the article first identified the problems with the data presented in a figure, and reported to the advisor his inability to repeat the reported calculations based upon that data. The advisor and a colleague were unable to reproduce the student's results when asked to review the data, and the advisor retracted the article.

The university initiated its investigation, but shortly thereafter the student returned to his home country. Other than two written explanations for how he had arrived at his results, the student did not participate further in the investigation. The university concluded that the student knowingly falsified the curve-fitting results that ultimately appeared in the article, retroactively dismissed the student from the university, and prohibited him from readmission.

We concurred with the university that the student committed research misconduct and we recommended NSF debar the student for 3 years.

### ***Professor Fabricates Data and Falsifies Status of Manuscripts***

A professor at a Maryland university fabricated data and falsified the status of manuscripts in NSF proposals. The university's investigation determined the professor intentionally fabricated data in one NSF proposal and intentionally misrepresented the status of manuscripts in several NSF proposal and award documents. The university concluded the professor's acts constituted research misconduct and the university's disciplinary actions included oversight, remedial training, and prohibition of applying for funds.

Our further investigation established that the professor falsified the status of manuscripts in four NSF proposals and four annual reports. We concluded that the professor's fabrication of data and falsification of manuscripts' status were intentional acts, representing a pattern of research misconduct. We recommended that NSF debar him for

one year and that for three years after the debarment, NSF: require certifications and assurances; require submission of a detailed data management plan with annual certifications of adherence for any resulting awards; and bar him from participating as a peer reviewer, advisor, or consultant for NSF.

### ***PI Plagiarizes from Former Colleagues in NSF Proposal***

A PI at a Pennsylvania university plagiarized a significant amount of material from a colleague's declined proposal submitted to another agency into her own NSF proposal. The university declined to conduct an investigation because it did not have a research misconduct policy. The PI admitted to us that she knowingly plagiarized material from a former advisor and another colleague, blaming time constraints and inexperience in proposal writing. We concluded that the PI committed plagiarism and recommended that NSF debar her for one year, require certifications and assurances for three years after the debarment, and bar her from participating as a peer reviewer, advisor, or consultant for NSF.

### ***Postdoc Falsifies Data To Make Results "Look Better"***

A post-doctoral scholar at a Pennsylvania university falsified NSF-funded research data in a manuscript submitted to a journal. When confronted by his mentor, the postdoc admitted that he had changed the data because it "would make the results in the paper look better."

The university concluded that the post-doc knowingly committed research misconduct, but found mitigating circumstances. It sent the postdoc a letter of reprimand and required his lab director to monitor his research; however, the postdoc left the university and returned to his home country. We concurred with the university's assessment and recommended NSF debar the post-doc for one year, and require he provide certifications and assurances for four years.

### ***PI Falsifies Accomplishments under Grants***

A Missouri university's investigation determined that a PI's annual reports were inaccurate and misrepresented the publications supported from his grant. It concluded that the PI's extensive misrepresentations constituted falsification, made a finding of research misconduct, and required the PI to provide quarterly progress reports for all externally-funded projects for one year. In addition, for three years he must have all annual reports reviewed by the university.

We concurred with the university's finding of research misconduct. The PI overwhelmingly misrepresented his accomplishments in his publications listed in his progress reports to NSF. For one grant, more than 90% of the publications listed in his first annual report and 80% of the publications in his second annual report were falsified; the publications were either inaccurate or not attributable to his NSF-funded research. Further, approximately 90% of the publications listed in the annual and final reports for a second NSF grant were also falsified, establishing a pattern of misrepresenting his publications. We recommended that NSF require the PI to provide certifications and assurances for three years.

### ***Texas Professor Claims Wrong Version of Proposal Submitted to NSF***

Our investigation determined that a Texas PI plagiarized in two NSF proposals. The PI told us he mistakenly submitted a version of the proposal in which he used placeholders for copied text, and that proper citations and references were present in a "final" version. The "final" version that he provided showed changes only to the text which we had originally identified, suggesting that the final version was created after we contacted the PI. The PI's university determined that plagiarism also existed in a proposal submitted by the PI to another agency. Because the proposals were used as support in his tenure package, the university dismissed the professor. We recommended that NSF require certifications and assurances for three years, and a concurrent prohibition from service to NSF as a reviewer, consultant, or advisor.

### ***Professor Copies Portions of His Proposal's Proposed Research Plan***

A professor at a Virginia university submitted two NSF proposals containing plagiarism. One of the proposals contained copied text in the research plan taken from another researcher's proposal. The professor told us that his citation was adequate, and that he "had no intention of taking the author's technical idea or copying his writing without giving him full credit."

The university investigation concluded the professor plagiarized and that his actions represented a pattern of plagiarism. It required him to submit all of his proposals, papers, and manuscripts for plagiarism review for five years.

We concurred with the university's conclusions and recommended that NSF require the professor to provide certifications and assurances for two years, and require he certify compliance with the university-imposed requirements.

### ***Full Professor Claims Ignorance of Quotation Marks***

A full professor at a Michigan university who plagiarized text into an NSF proposal asserted that he was unaware of the need for quotation marks, stating, “I really didn’t know actually when you copy, you need to put quotation.” The university rejected this excuse after finding the professor attributed text properly in 22 of his other papers, also noting the professor had already completed RCR training. They imposed three years of certifications and assurances, and required him to attend in-person remedial training at his own expense.

The NSF program officer determined that the plagiarized text would have been material to the funding decision. We concluded that the professor knowingly plagiarized and recommended that NSF terminate the award early, recover funds already spent, impose two years of certifications and assurances, and impose a ban of the same length on serving as an NSF reviewer, consultant, or advisor.

### ***Professor’s Claim of Technically-Constrained Language Dispelled***

An Illinois PI plagiarized into four NSF proposals. The PI claimed that the copied text was technically constrained, or that he had permission to use the text verbatim without citing its source. The university investigation determined the PI knowingly committed plagiarism in two of the four proposals. The university concluded that the copied text in the other two proposals was technically constrained — that is, it could only be expressed in a limited number of ways. The university also determined that the permission the PI described was solicited after we initiated our investigation.

The university required that for one year the PI’s department chair must certify that his submitted proposals are free of plagiarism. Additionally, the PI was directed to write a report to the investigation committee on proper citation practices. We recommended that NSF impose a two-year period of certifications and assurances, and a concurrent prohibition from service to NSF as a reviewer, consultant, or advisor.

### ***University Removes Professor from Funded Project Due to Plagiarism***

A professor at a Georgia university submitted two NSF proposals containing plagiarism, one of which NSF funded. The university investigation concluded that the professor committed plagiarism, removed her from the awarded project, excluded her from receiving or applying for federal funding for one year, and required her to implement a university-approved responsible conduct of research plan.

We concurred with the university and found that a journal article the professor authored also contained plagiarism, which directly contradicted statements she made to her university. We recommended NSF require the professor to provide certifications and assurances for two years, and require that she certify compliance with university-imposed requirements.

### ***Professor Claims Quotation Marks Not Needed for Directly Copied Text***

A Mississippi PI plagiarized in multiple NSF proposals. He explained to us that his community standards allowed verbatim copied text to be attributed by including a reference to the author at the end of the block of text, and did not require quotation marks. The university committee which investigated the matter disagreed with that interpretation of professional standards, and identified numerous examples of copied text appearing in the NSF proposals without reference attribution.

The university concluded that the PI committed research misconduct and imposed a formal reprimand, a prohibition from writing and submitting grant proposals for one year, completion within one year of courses on ethics in scientific research, responsible conduct of research, and scientific writing, three-years monitoring of grant activities by a university Dean, and enlistment of the services of a professional editor. We recommended that NSF impose certifications and assurances for two years, and a concurrent prohibition from service to NSF as a reviewer, consultant, or advisor.

### ***PI Responsible for Copied Text in Funded NSF Proposal***

An associate professor at a Massachusetts university was solely responsible for plagiarism in multiple NSF proposals. The university investigation concluded that the PI recklessly engaged in acts constituting a pattern of plagiarism. The university required the PI to develop, obtain approval, and then present a workshop related to responsible conduct of research in STEM proposals; and, for three years, to submit external research proposals to the university's research administration office three days before the internal deadlines. We concurred that the PI recklessly committed plagiarism and recommended that NSF require the PI to provide certifications and assurances for one year.

### ***Alleged Plagiarism Leads to Award Suspension***

A PI from a Puerto Rican university included a significant amount of apparently copied material in a funded NSF proposal. We interviewed the program officer, who concluded that the allegedly plagiarized

text was material to her decision to fund the award. Based on our recommendation, NSF suspended the award — with \$150,637 unexpended — pending completion of our investigation.

### ***Actions by NSF Management on Previously Reported Research Misconduct Investigations***

NSF has taken administrative action to address our recommendations on 7 research misconduct cases reported in previous semiannual reports. In each case, 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 Florida PI and co-PI who plagiarized material into multiple NSF proposals<sup>19</sup>, NSF proposed a one-year debarment for each, and four years of certifications and assurances. The co-PI appealed the action, and NSF's decision is pending.
- In the case of an associate professor at a California university who plagiarized text into four proposals to NSF, one of which was awarded<sup>20</sup>, NSF imposed two years of certifications and assurances and also barred the professor from service to NSF as a reviewer, consultant, or advisor for two years.
- In the case of a professor at a Florida university who plagiarized text in eight proposals to NSF<sup>21</sup>, NSF imposed a one-year debarment followed by three years of certifications and assurances. For three years NSF also barred the professor from service to NSF as a reviewer, consultant, or advisor.
- In the case of an assistant professor in Maine who plagiarized text into five NSF proposals<sup>22</sup>, NSF imposed three years of certifications and assurances, and a ban on serving as an NSF reviewer, consultant, or advisor.
- In the case of a Missouri graduate student who falsified data that appeared in multiple (now retracted) publications<sup>23</sup>, NSF proposed a five-year debarment and three subsequent years of certifications and assurances.

<sup>19</sup> September 2014 Semiannual Report, p.26.

<sup>20</sup> September 2014 Semiannual Report, p.29.

<sup>21</sup> March 2014 Semiannual Report, p.23.

<sup>22</sup> September 2014 Semiannual Report, pp.28-29.

<sup>23</sup> September 2014 Semiannual Report, p.26.



- In the case of a Kansas professor who extensively plagiarized in two review articles citing NSF support<sup>24</sup>, NSF required two years of certifications and assurances.
- In the case of a New York PI who plagiarized<sup>25</sup>, NSF required certifications and assurances for three years, and prohibited the PI from serving as a reviewer, consultant, or advisor for three years.

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<sup>24</sup> September 2014 Semiannual Report, p.28.

<sup>25</sup> September 2014 Semiannual Report, p.28.



# Congressional Testimony

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In December 2014, the Inspector General testified before the House Committee on Science, Space, and Technology at a hearing on two audits of the National Ecological Observatories Network (NEON). NEON is a non-profit organization, funded by NSF in 2011 under a Cooperative Support Agreement to build and operate a continent-wide network of ecological observatories. The Inspector General also discussed related systemic issues, including NSF's overall management and oversight of its high-dollar, high-risk cooperative agreements.

OIG contracted with DCAA in 2011 to perform an audit of NEON's \$433.7 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 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 light of the problems with the NEON budget, OIG 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. Investigations examined the allegations and referred them to the Justice Department, which declined to accept the case. Auditors have added a review of the award and use of management fees to their FY 2015 audit work plan.

In addition to the work on NEON, for the past four years OIG has directed significant attention to proposed construction budgets for three of NSF's other high-risk, high-dollar cooperative agreements for large construction projects. It is essential for cost information for proposed budgets to be accurate, current, and adequately supported because the

budget is basis for charging costs to NSF. Auditors found that NSF approved proposed budgets for four major projects, totaling more than \$1.6 billion (including NEON), 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.

In light of the serious concerns raised by this work and our recommendations to NSF that it strengthen accountability over the millions of dollars invested in its high-risk construction projects, OIG watched closely to see what NSF would do to ensure the adequacy of the \$467.7 proposed cost for the Large Synoptic Survey Telescope, the first construction project the Foundation considered since our recommendations. NSF's own internal review for the project's costs could not find support for any of the 136 transactions it sampled, which included labor charges, fringe benefits, and contingencies.

As OIG staff worked to resolve recommendations in audits of proposed costs for NSF's large facility projects, they identified weaknesses in NSF's pre- and post-award monitoring processes for high-risk projects that compounded our concern that unallowable costs could be charged to awards. At the pre-award stage, NSF does not require a proposal or accounting system audit for high-risk, high-dollar cooperative agreements prior to award. Without such audits, NSF is left making funding decisions without adequate information to confirm the reasonableness of the cost estimates.

At the post-award stage, NSF does not routinely obtain incurred cost submissions or audits to determine if costs claimed by awardees are allowable. While not required by law or regulation, such submissions and audits are essential tools for ensuring accountability in high-risk, high-dollar projects. In their absence, unallowable costs charged to these awards may go undetected because NSF lacks sufficient visibility over incurred costs.

NSF has asserted that its existing practices were sufficient to ensure adequate oversight for such cooperative agreements and disagreed with OIG's recommendations to strengthen accountability. However, the actions NSF has proposed to take to address these recommendations fall short of the standard necessary to adequately safeguard federal funds and leave millions of dollars at risk.

Therefore, following the audit resolution process under OMB Circular A-50, on May 22, 2014, OIG escalated the unresolved recommendations from this work -- including recommendations in the NEON proposal audit, and the Alert Memorandum -- to the Audit Follow-up Official, NSF's then-Deputy Director. At the time of the hearing, OIG had not

received NSF's response to the escalated recommendations. Escalation of OIG 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. OIG took this step in light of the serious risk to federal funds posed by NSF's current processes and practices. We continue to work with the Foundation to address our recommendations.

OIG has 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, prior to requesting NSB approval for award. The stakes are too high for the Foundation to continue its current practice of requesting NSB approval and making awards before it ensures that project costs are reasonable, are supported by adequate documentation, and will use taxpayer dollars efficiently.



# 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	\$93,469,411
B.	Recommendations that were issued during the reporting period	\$0
C.	Adjustments related to prior recommendations 12-1-008 NEON Proposal Audit <sup>26</sup>	\$6,651,894
Subtotal of A+B+C		\$100,121,305
D.	For which a management decision was made during the reporting period	\$88,406,625
	i) Dollar value of management decisions that were consistent with OIG recommendations	\$19,824,636
	ii) Dollar value of recommendations that were not agreed to by management	\$68,581,989
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	15	\$12,553,687	\$2,517,314
B.	That were issued during the reporting period	7	\$5,456,192	\$29,859
C.	Adjustment related to prior recommendations	3	\$51,364 <sup>27</sup>	\$13,196 <sup>28</sup>
Subtotal of A+B+C			\$18,061,243	\$2,560,369
D.	For which a management decision was made during the reporting period	6	\$2,075,588	\$2,581
	dollar value of disallowed costs	N/A	\$1,653,392	N/A
	dollar value of costs not disallowed	N/A	\$422,196	N/A
E.	For which no management decision had been made by the end of the reporting period	17	\$15,985,655	\$2,557,788
For which no management decision was made within 6 months of issuance		12	\$10,532,044	\$2,530,510

<sup>26</sup> During audit resolution, NSF questioned \$6,651,894 more than was questioned in the audit report.

<sup>27</sup> Questioned costs on Report No. 14-5-105 were inadvertently omitted from prior semiannual reports. An additional \$252.22 was questioned during audit resolution on Report No. 14-1-001.

<sup>28</sup> There were \$13,196 of additional unsupported costs on Report No. 14-1-006. The total questioned costs on this report are unchanged, since unsupported costs is a subset of questioned costs.

## Status of Recommendations that Involve Internal NSF Management Operations

<b>Open Recommendations (as of 09/30/2014)</b>	
Recommendations Open at the Beginning of the Reporting Period	107 <sup>29</sup>
New Recommendations Made During Reporting Period	42
Total Recommendations to be Addressed	149
<b>Management Resolution of Recommendations<sup>30</sup></b>	
Awaiting Resolution	27
Resolved Consistent With OIG Recommendations	102
Management Decision That No Action is Required	0
<b>Final Action on OIG Recommendations<sup>31</sup></b>	
Final Action Completed	48
<b>Recommendations Open at End of Period (03/31/2015)</b>	<b>101</b>

## Age of Open Recommendations

<b>Aging of Open Recommendations</b>	
<b>Awaiting Management Resolution</b>	
0 through 6 months	18
7 through 12 months	4
More than 12 months	5
<b>Awaiting Final Action After Resolution</b>	
0 through 6 months	24
7 through 12 months	3
More than 12 months	47

29 This number differs from the number reported in the 9/14/15 Semiannual as the closing balance of open recommendations (98), for two reasons.

1) Two recommendations reported as open as of 9/30/14 had been closed/had final action by 9/30/14. Those two were: Report No. 14-2-001, Finding 1, recommendation 4, and Report No. 12-2-002, Finding 1, recommendation 2.

2) In addition, for the first time, we are reporting new types of recommendations to NSF, such as inspections and alert memoranda. There were 11 of these open as of 9/30/14.

Thus, the number of open recommendations as of 9/30/14 is 107 (98-2) + 11 = 107.

30 "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.

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



## List of Reports

### OIG and CPA-Performed Reviews<sup>32</sup>

Report Number	Subject	Questioned Costs	Unsupported Costs	Better Use of Funds
15-1-001	NEON's Accounting System Independent Audit Report	\$0	\$0	\$0
15-1-002	Sikulialq – University of Alaska Fairbanks' Management and Oversight	\$0	\$0	\$0
15-1-003	ARRA Michigan State University	\$913,210	\$0	\$0
15-1-004	REVISED University of Florida	\$992,462	\$23,278	\$0
15-1-012	University of California, Berkeley	\$1,863,351	\$4,000	\$0
15-1-013	AURA Pre-Award Accounting System Follow-up	\$0	\$0	\$0
15-1-014	University of Wisconsin - Madison	\$1,669,588	\$0	\$0
15-2-001	FY 2014 Financial Statement Audit	\$0	\$0	\$0
15-2-002	FY 2014 Financial Statement Audit Closing Package	\$0	\$0	\$0
15-2-003	FY 2014 FISMA Metrics	\$0	\$0	\$0
15-2-004	FY 2014 FISMA Independent Evaluation	\$0	\$0	\$0
15-2-005	FY2014 Financial Statement Management Letter	\$0	\$0	\$0
15-2-006	FY 2014 Information Technology Management Letter	\$0	\$0	\$0
15-6-001	Observations that Warrant NSF's Attention Found during Audit of NEON	\$0	\$0	\$0
15-6-002	Routine Activity for AURA Pre-Award Accounting System Follow-up	\$0	\$0	\$0
N/A	White Paper on Management Fees			
N/A	Observations on NSF's Proposed Management Fee Policy			
	<b>Total:</b>	<b>\$5,438,611</b>	<b>\$27,278</b>	<b>\$0</b>

<sup>32</sup> The Office issued 15 reports this semiannual period.

### NSF-Cognizant Reports

Report Number	Subject	Questioned Costs	Unsupported Costs
15-4-001	12-13 Woods Hole Oceanographic Institution - MA	\$0	\$0
15-4-002	12-13 Boyce Thompson Institute for Plant Research - NY	\$0	\$0
15-4-003	6-13 Paleontological Research Institution - NY	\$0	\$0
15-4-004	12-13 Astrophysical Research Consortium - WA	\$0	\$0
15-4-005	12-13 CUASHI Consortium of Universities for the Advancement of Hydrologic Science - MA	\$0	\$0
15-4-006	12-13 Learning Games Network - MA	\$0	\$0
15-4-007	12-13 Mozilla Foundation - MA	\$2,362	\$2,362
15-4-008	12-13 Stroud Water Research Center - PA	\$0	\$0
15-4-009	12-13 The Shodor Education Foundation - NC	\$0	\$0
15-4-010	3-14 Berkeley Geochronology Center - CA	\$0	\$0
15-4-011	12-13 World Technology Evaluation Center - PA	\$0	\$0
15-4-012	12-13 Youth Radio - CA	\$0	\$0
15-4-013	12-13 AIM American Institute of Mathematics - CA	\$0	\$0
15-4-014	6-14 AACU Association of American Colleges & Universities - DC	\$0	\$0
15-4-015	6-14 Cal Poly Corporation - CA	\$0	\$0
15-4-016	6-14 CCAT Observatory - NY	\$0	\$0
15-4-017	6-14 Museum of Science - MA	\$0	\$0
15-4-018	12-13 Triangle Coalition for Science and Technology Education - VA	\$0	\$0
15-4-019	6-14 Maine Mathematics and Science Alliance - ME	\$0	\$0
15-4-020	6-14 NISS National Institute of Statistical Sciences - NC	\$0	\$0
15-4-021	6-14 Old Dominion University Research Foundation - VA	\$0	\$0
15-4-022	3-14 ASTC Association of Science Technology Centers - DC	\$0	\$0
15-4-023	5-14 OMSI Oregon Museum of Science and Industry - OR	\$0	\$0
15-4-024	6-14 The Adler Planetarium - IL	\$0	\$0
15-4-025	7-14 MSRI Mathematical Science Research Institute - CA	\$0	\$0
15-4-026	6-14 National Alliance for Partnerships in Equity Education Foundation - PA	\$0	\$0
15-4-027	6-14 The Exploratorium - CA	\$0	\$0
15-4-028	6-14 Toyota Technological Institute at Chicago - IL	\$0	\$0
15-4-029	6-14 Cary Institute of Ecosystem Studies - CT	\$0	\$0
15-4-030	6-14 National Collegiate Inventors & Innovators' Alliance, Inc. - MA	\$0	\$0
15-4-031	6-14 Oakland Museum of California - CA	\$0	\$0
15-4-032	6-14 Oregon Public Broadcasting - OR	\$0	\$0

15-4-033	6-14 Pacific Science Center Foundation - WA	\$0	\$0
15-4-034	6-14 The New Mexico Consortium - NM	\$0	\$0
15-4-035	8-14 Twin Cities Public Television - MN	\$0	\$0
15-4-036	6-14 University Enterprises, Inc. - CA	\$0	\$0
15-4-037	6-14 WGBH Educational Foundation - MA	\$0	\$0
15-4-038	9-14 Arctic Research Consortium of the US - AK	\$0	\$0
15-4-039	6-14 IRIS Incorporated Research Institutions for Seismology - DC	\$0	\$0
15-4-040	6-14 New York Hall of Science - NY	\$0	\$0
15-4-041	6-14 University Enterprises Corporation at CSUSB - CA	\$0	\$0
15-4-042	6-14 Los Angeles County Museum of Natural History Foundation - CA	\$0	\$0
15-4-043	6-14 Oregon Coast Community College - OR	\$0	\$0
15-4-044	6-14 The American Museum of Natural History - NY	\$0	\$0
15-4-045	6-14 The Science Museum of Minnesota - MN	\$0	\$0
15-4-046	6-14 Balboa Park Cultural Partnership - CA	\$0	\$0
15-4-047	6-14 Rancho Santa Ana Botanic Garden - CA	\$0	\$0
15-4-048	9-14 The Concord Consortium, Inc. - MA	\$0	\$0
15-4-049	6-14 The Fred Rogers Company - PA	\$0	\$0
15-4-050	6-14 The New York Botanical Garden - NY	\$0	\$0
15-4-051	6-14 Bigelow Laboratory for Ocean Sciences - ME	\$0	\$0
15-4-052	6-14 Center for Aquatic Sciences, Inc. (fka NJ Academy for Aquatic Sciences) - NJ	\$0	\$0
15-4-053	6-14 Institute for Advanced Study - NJ	\$0	\$0
15-4-054	6-14 Kennesaw State University Research & Service Foundation - GA	\$0	\$0
15-4-055	9-14 KQED, Inc. - CA	\$0	\$0
15-4-056	6-14 California Academy of Sciences - CA	\$0	\$0
15-4-057	9-14 NEON National Ecological Observatory Network - CO	\$15,000	\$0
15-4-058	9-14 UCAR University Corporation for Atmospheric Research - CO	\$0	\$0
15-4-059	Intentionally left blank	\$0	\$0
15-4-060	Intentionally left blank	\$0	\$0
15-4-061	9-14 Museum of Science, Inc. & Museum of Science Endowment Fund - FL	\$0	\$0
15-4-062	6-14 New York Public Radio - NY	\$0	\$0
15-4-063	6-14 REVISED Rancho Santa Ana Botanic Garden - CA	\$0	\$0
	<b>Total:</b>	<b>\$17,362</b>	<b>\$2,362</b>

## Other Federal Reports

Report Number	Subject	Questioned Costs	Unsupported Costs
15-5-002	12-13 International Food Policy Research Institute - DC	\$219	\$219
	<b>Total:</b>	<b>\$219</b>	<b>\$219</b>

## 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 13 reports remaining that met this condition. The status of recommendations that involve internal NSF management is described on page 40.

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 <sup>33</sup>	\$110,629	\$0	\$0
12-5-143*	9-11 Fort Berthold Community College - ND	\$25,343	\$24,659	\$0
13-1-001	REVISED University of Wisconsin ICE CUBE	\$2,134,379		
13-1-002*	Jackson State University	\$943,475	\$844,241	\$0
13-1-004	ARRA Cornell University	\$794,221	\$19,703	
13-5-094*	6-12 Fort Berthold Community College - ND	\$28,154	\$28,154	\$0
14-1-002	Virginia Polytechnic Institute & State University	\$1,604,129	\$0	\$0
14-1-004	UCLA	\$2,358,380	\$131,139	\$0
14-1-005	Audit of AURA Cost Book Evaluation for the Rebaselined ATST/DKIST Project			\$11,714,680
14-1-006	University of Illinois Urbana Champaign	\$173,290	\$63,725	
14-4-109	12-13 Marine Biological Laboratory - MA	\$751,581		
14-5-119	6-13 Fisk University - TN	\$3,750	\$0	\$0
	<b>Total: 13</b>	<b>\$10,532,044</b>	<b>\$2,530,510</b>	<b>\$11,714,680</b>

<sup>33</sup> This report was on hold at the request of OIG.

### Investigative Activities

Referrals to Prosecutors.....	11
Criminal Convictions/Pleas.....	8
Arrests .....	0
Civil Settlements.....	4
Indictments/Informations .....	0
Investigative Recoveries.....	\$2,661,983.24 <sup>34</sup>
Referrals to NSF Management for Action.....	34
Research Misconduct Findings .....	7
Suspensions/Debarments/Exclusions .....	6
Administrative Actions .....	38
Certifications and Assurances Received <sup>35</sup> .....	18

### Investigative Case Statistics

	<u>Preliminary</u>	<u>Civil/Criminal</u>	<u>Administrative</u>
Active at Beginning of Period	8	124	110
Opened	7	24	40
Closed	10	42	36
Active at End of Period	5	106	114

### 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	6
Requests Processed	8
Appeals Received	0
Appeals Upheld	0

Response times ranged between 8 days and 31 days, with the median around 23.5 days and the average around 23.5 days.

<sup>34</sup> During the most recent reporting period, three NSF awards that had been suspended per our recommendations were terminated by NSF when the awards 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.

<sup>35</sup> 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.



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