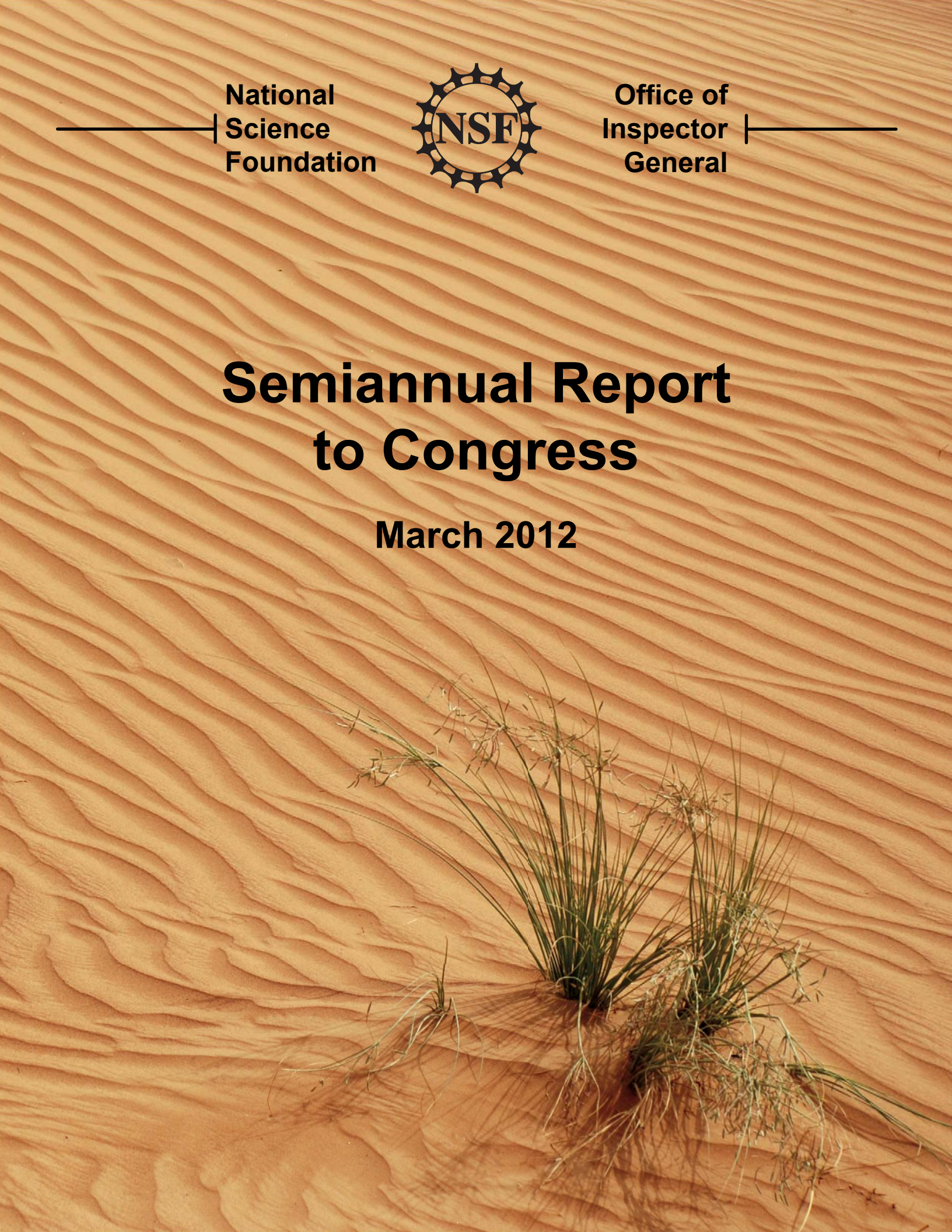
National Science Foundation

Office of Inspector General

Semiannual Report to Congress

March 2012



About The National Science Foundation...

The National Science Foundation (NSF) is charged with supporting and strengthening all research discplines, 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 the Inspector General...

NSF's Office of the 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 recieve NSF funding; and identifies and helps to resolve cases of misconduct in science. The 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

This Semiannual Report to Congress highlights the activities of the National Science Foundation, Office of Inspector General (OIG) for the six months ending March 31, 2012. During this period, sixteen audits and reviews were issued which identified more than $865,000 in questioned costs. In addition, our investigative staff closed 48 investigations, had eight research misconduct cases result in findings by NSF, and recovered nearly $1.4 million for the government.

The OIG values, and is firmly committed to, its mission to detect and prevent fraud, waste, and abuse within the NSF or by those who receive NSF funding. These are challenging times to be in federal public service as budgets tighten and the actions of a few federal employees erode the public's confidence in government's ability to use taxpayer dollars prudently. Yet, every day I witness the commitment of OIG auditors, investigators, and others to doing work that leads to recommendations to improve NSF's ability to exercise strong stewardship over the taxpayer dollars intended to advance scientific research.

Scientific research and discovery are the building blocks of the technological advances that are essential for our nation's economy to grow and to meet the challenges of the future, and NSF has an essential role to play in promoting scientific discovery. For the agency to achieve its mission, NSF must spend its research funds in the most effective and efficient manner while maintaining the highest level of accountability over taxpayer dollars.

Audits of proposal budgets for three of NSF's large construction projects have identified $226 million in unallowable contingency costs and have recommended that NSF stop awarding millions in unallowable contingency costs. It is also imperative that expenses for NSF's own operations and activities are scrutinized to identify opportunities for cost savings. Our reviews for NSF's expenditures for such things as wireless devices and plans and staff retreats have recommended actions that can result in more efficient purchasing practices and cost savings. We have also recommended that NSF explore more effective ways to conduct oversight of awardees with its existing staff.

Our investigations have recovered nearly $1.4 million from those who fraudulently sought to obtain funds intended for scientific research. We continue to aggressively pursue cases of research misconduct which undermines citizens' trust in government-funded research and referred eight research misconduct cases to NSF.

We are also actively involved in government-wide initiatives to reduce fraud in the Small Business Research Innovation program and to expand the use of suspension and debarment to protect federal funds.

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

- Our audit of NSF's Independent Research/Development (IR/D) program which allows employees and non permanent staff such as IPAs to be reimbursed for travel expense such as attending related conferences and returning to their home institution to pursue their research, found that NSF did not know the program's annual total cost and did not prevent individuals from exceeding the program's 50-day limit on IR/D activities.

- An audit of five awards questioned more than $451,000 and found significant internal controls weaknesses in the International Computer Science Institute's financial management of NSF funds.

- Based on our recommendation, NSF immediately suspended an award because an assistant professor plagiarized substantive text into the awarded proposal.

- Our investigation led to a Texas university returning over $477,000 to NSF after a PI improperly subcontracted work on his NSF grant to a company in which he had a 25 percent ownership, in violation of conflict of interests restrictions.

Audits & Reviews

Sixteen audit reports and reviews were issued during the past six months. Three audits of NSF's awardees identified more than $865,000 in questioned costs, and a review of a $386 million proposed budget for a large construction project confirmed that the budget included $88 million in unallowable contingency costs. Our audits of NSF programs and operations recommended improvements in management controls to monitor Independent Research/Development travel and stronger internal controls to ensure compliance with requirements pertaining to staff retreats. We also recommended that with existing staff, NSF explore more effective ways to conduct oversight of awardees. Finally, during this period, NSF sustained more than $900,000 of costs questioned in prior audits.

NSF Needs to Strengthen Management Controls over its Independent Research/Development Program

NSF's Independent Research/Development (IR/D) program allows employees and non permanent staff, such IPAs,[1] to maintain their scientific research and expertise by continuing their research at their home institutions and attending related conferences, and be reimbursed for the travel expenses. In 2010, the total costs for IR/D trips as reported on expense reports were approximately $1.8 million, and the range per traveler varied from approximately $225 to $45,000. Of 250 working days in a year, NSF allows IR/D participants to spend up to 50 days (20 percent) a year on IR/D activities.

Based on a referral from our Office of Investigations,[2] we conducted an audit of NSF's IR/D program. Our audit found that NSF did not have sufficient management controls to monitor the IR/D program. For example, NSF management had not determined the program's total annual cost nor did it prevent individual travelers from exceeding the 50-day limit. Further, NSF has not identified IR/D program goals or quantified the program's outcomes. As a result, NSF did not have the performance measures necessary to evaluate the value of the program to the agency's mission.

NSF has started to improve controls over the IR/D program in response to an OIG Management Implication Report and its own task force, but IR/D travel costs and time were not being monitored consistently across the agency.

1. Non permanent staff appointed under the Intergovernmental Personnel Act.
2. September 2010 Semiannual Report, pp.14-15, and March 2011 Semiannual Report, p. 30.

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We recommended that NSF strengthen management controls over the IR/D program and re-evaluate its current IR/D policy and processes to consider such things as how to reduce IR/D travel costs and whether the 50-day travel allowance should be reduced. NSF agreed to our recommendations.

Internal Controls Over NSF Staff Retreats Could Be Improved

The Office of Management and Budget directed all Federal agencies to review their policies and controls associated with conference-related activities and expenses. Concurrent with NSF's own internal review, we audited the internal controls governing staff retreats, a subset of conference-related spending.

It is important to note that we did not identify any instances of retreat participants inappropriately claiming reimbursement for meals that were provided. Further, it appeared that retreat planners generally attempted to be cost conscious. However, our review of nine NSF staff retreats held in Fiscal Years 2010 and 2011 disclosed several areas in which NSF could improve its internal control to better ensure cost containment and compliance with applicable standards. First, we identified a lack of support to ensure that retreat sites selected were the most cost effective as required by the Federal Travel Regulation (FTR). As a result, NSF may have overspent on staff retreats. Second, because NSF had not set a standard for how much should be spent on refreshments at retreats, the amount that could be spent varied across the agency and was left to the discretion of individual retreat organizers. We also found that NSF did not have an internal policy to ensure compliance with the FTR and adequate management control over retreat costs. Finally, we were concerned that planners for six of the eight retreats were unable to provide an invoice from the hotel where retreats were held. This was particularly troubling as hotel costs were generally the largest amount of retreat expenses.

Absent sufficient internal controls such as guidance and monitoring, NSF risks overpaying for staff retreats. We recommended that NSF develop policy incorporating the conference planning requirements of the FTR and reevaluate the practice of traveling outside of the Washington metropolitan area for staff retreats. NSF concurred with our recommendations. NSF stated that it is reviewing the results of its internal control study of NSF conference activity and anticipates including the Federal Travel Regulation conference planning guidance as part of the materials.

NSF Could Use Staffing Assessments to Change Processes to Provide More Cost Effective Oversight

NSF's Office of Budget, Finance, and Award Management (BFA) is responsible for issuing the thousands of awards NSF makes each year and for monitoring how awardees manage the funds they receive. We examined assessments that NSF conducts to determine the staffing level BFA needs to fulfill these responsibilities.

While we identified a few areas in which improvements could be made in the staffing assessment processes NSF and BFA used, it became clear that even if the processes were perfect, with the current fiscal environment, gaps between

the number of staff needed and the number funded would continue. Thus, we examined the need for NSF to use those processes to seek alternative methods to accomplish its mission and provide oversight in a more streamlined way within its current staffing limits.

Our audit found that BFA did not use the staffing assessments to change its processes to create more cost-effective ways to manage its workload or to prioritize work that adds value and eliminate work that did not advance its mission. In the current environment of increased concern about both accountability of Federal funds and budget constraints, BFA needs to find new and cost-effective ways to ensure that NSF recipients, especially high-risk ones, have the financial capability to properly manage federal funds.

As a result of not having sufficient staffing, BFA reduced the number of site visits to monitor high-risk awardees. Additionally, the number of audits with unresolved questioned costs grew from zero in FY 2003 to 26 in FY 2010. It is important for questioned costs to be resolved swiftly so funds can be returned to the Federal government and financial management deficiencies can be addressed before additional funds are placed at risk.

We recommended that BFA integrate its identification and evaluation of opportunities to streamline its operations into its annual workforce planning process to ensure sound financial management and oversight of awardees based on staffing levels. BFA concurred with the recommendation, stating that it would address the use of streamlining, including risk-based methodologies, in its annual workforce planning process.

Additional Audit Work Confirms $88 Million of Unallowable Contingency Costs in Construction Budget

Auditors conducted additional work to determine how contingency costs were estimated in the Consortium for Ocean Leadership's (COL) $386 million proposed budget for Ocean Observatories Initiative (OOI). COL disagreed with the conclusion of the original audit which questioned $88 million in contingency costs. COL also asserted that it was directed by NSF to include the contingency amount as allowable equipment costs in its proposed budget.

The additional work confirmed the auditors' original conclusion that the entire $88 million in contingencies was unallowable. DCAA found no evidence that COL can support its contingencies as required by OMB "with certainty as to time, intensity, or with an assurance of their happening." DCAA stated that while contingencies may be included in Government developed budgets, awardees are not allowed to include unallowable contingencies as allowable costs in the proposal they submit to the Government. COL's costs for pricing, administration, and settlement of awards must comply with OMB cost principles for nonprofit organizations, and there is no exception to how applicable cost principles are determined for an awardee.

In total, $226 million in unallowable contingency costs have been identified in the proposed budgets for NSF's three large construction projects – the Ocean Observatories Initiative project, the Advanced Technology Solar Telescope and

the National Ecological Observatories Network. We continue to recommend that NSF cease to award unallowable contingency costs. NSF should hold the contingency portion of the budget until the awardee can demonstrate a bona fide need and submit verifiable cost data to support its request for the funds.

The OIG is continuing to work with the Foundation to resolve the recommendations in the three proposal reviews.

Weaknesses in Financial Management Result in $451,189 in Questioned Costs

An audit of five awards totaling $5.2 million at the International Computer Science Institute (ICSI) questioned $451,189 and disclosed significant compliance and internal control deficiencies in ICSI's financial management of NSF grant funds. As of December 31, 2010, ICSI had 32 awards totaling over $18.9 million that included two Recovery Act awards over $600,000. If the compliance and internal control deficiencies contributing to these questioned costs are not corrected, unsupported and unallowable costs could continue to be claimed on current and future NSF awards.

The auditors identified three major deficiencies: inadequate sub-award monitoring, inadequate controls over the timely review and certification of effort reports, and inadequate controls over foreign travel restrictions.

We recommended that ICSI develop risk-based subawardee evaluation and monitoring procedures, develop policies that mandate the timely review and certification of labor effort, and establish written policies and procedures to address foreign travel restrictions. ICSI agreed with the recommendations.

$169,532 in Questioned Costs Found at Johns Hopkins University

An audit at Johns Hopkins University questioned $169,532 primarily for unsupported sub-grantee costs. As of March 2010, the university had 319 active NSF awards totaling $195 million. The audit found that Johns Hopkins could improve sub-grantee monitoring of its low risk sub-grantees, including ten sub-grantees amounting to over $8 million in claimed costs. The auditors believe that the same deficiencies may exist on other Johns Hopkins sub-grantee awards, which could lead to additional unallowable costs being claimed on other NSF awards.

Recommendations included that the Johns Hopkins University return the $169,532 in claimed costs and establish greater sub-grantee monitoring controls. The university disagreed with the questioned costs and the recommendations.

More Than $244,000 in Questioned Costs in Five Awards to University of Notre Dame

An audit of five awards made to the University of Notre Dame questioned $244,430 of claimed costs. The questioned costs consisted of $119,330 in unsupported participant support and travel costs; $44,300 for unsupported and unallowable subaward costs; and $80,800 in participant support costs that

were re-budgeted without the required prior approval from NSF. The auditors also identified several compliance and internal control deficiencies in financial practices at Notre Dame and its subawardees that, if not corrected, could impact current and future NSF awards.

Notre Dame is taking steps to address these deficiencies including revising its subawardee monitoring and participant support procedures.

Evaluation of NSF's Facebook Site Identifies Several Concerns

Our evaluation of NSF's use of its official Facebook site identified three primary concerns: lack of content control; lack of disclaimers; and lack of a policy to "like" external entities. As a result, third parties are able to post comments and links to sites that may include inappropriate content and there is a potential implied endorsement when NSF "likes" certain external parties. We made several recommendations consistent with best practices identified in other federal agencies' Facebook sites including that NSF limit the "like" status to other government agencies and that NSF post a visible disclaimer on its Facebook site. NSF was receptive to our recommendations and has stated that it is developing a policy to address the issues we identified.

Audit Resolution

NSF Sustains more than $630,000 in Questioned Costs at the Louisiana Board of Regents

In response to our recommendations, NSF sustained $631,852 in questioned costs at the Louisiana Board of Regents (LBR). In addition, LBR agreed to expand monitoring of its sub-awardees and to strengthen its policies and procedures for time and effort reporting.

Field Museum Audit Results in $123,663 Returned to Treasury

In response to our recommendations, NSF sustained $123,663 in questioned costs at the Field Museum of Natural History and returned these funds to the U.S. Treasury. In addition, the Field Museum agreed to revise its policy to prevent future claims against expired appropriations and revise its property management policy to ensure proper segregation of duties regarding property management.

NSF Sustains More than $150,000 in Questioned Costs at Ohio State University

In response to our recommendations, NSF sustained $150,995 in questioned costs at Ohio State University. In addition, Ohio State is strengthening monitoring of costs claimed by subawardees and developing new cost sharing documentation standards to address internal control deficiencies identified in the audit.

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 Receives Unqualified Opinion on Financial Statements for the Fourteenth Consecutive Year, but Monitoring of Construction Type Cooperative Agreements Should be Strengthened

Under a contract with the OIG, Clifton Gunderson LLP conducted an audit of NSF's FY 2011 financial statements. Clifton Gunderson issued an unqualified opinion on the financial statements; however, it identified a significant deficiency in monitoring of construction- type cooperative agreements which had been reported in FY 2010 as a component of a significant deficiency related to the monitoring of cost reimbursement contracts.

As of September, 30, 2011, NSF had 14 active cooperative agreements totaling about $1.9 billion that included about $334 million in contingency funds, or 18 percent of the total award amount. For FY 2011, cooperative agreement awardees had received NSF funds of approximately $151 million in contingency costs, which are at heightened risk to be disallowed once subject to audit.

Specifically, the auditors noted issues in the following areas:

- DCAA issued inadequacy memoranda for two awardees with unallowable contingency costs.
- DCAA audited the supporting documentation of proposed contingency costs and identified eight deficiencies in an awardee's accounting system and estimating practices that could result in misstated costs, and therefore deemed the awardee's accounting system and estimating practices unacceptable for award.
- There are no systemic barriers to prevent awardees from drawing down on the contingency funds budget without prior NSF approval.

In summary, the DCAA's audits and other internal control testing collectively indicate that there is significant risk concerning cooperative agreements with budgeted contingency funds in terms of the validity of cost proposals, the allowability of contingency funds budgeted, and the adequacy of NSF's control over the use of contingency funds. Although NSF does not concur with the significant deficiency, it is committed to developing a mutually acceptable solution.

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.

The FY 2011 Management Letter identified six findings, some of which incorporated elements of prior years' findings related to NSF's operations and financial reporting controls. The Management Letter reported that NSF's policies for awarding and administering grants and cost reimbursement contracts continue to need improvement. The auditors made several recommendations, including that NSF fully implement its cost surveillance oversight procedures and continue improving its control over cost reimbursement contracts, and continue to evaluate the effectiveness of its internal control procedures over processing grant transactions.

NSF generally concurred with the recommendations in the Management Letter and is working to resolve the findings. The FY 2012 financial statement audit will evaluate NSF's actions in response to the recommendations.

Annual Evaluation of NSF's Information Security Program Completed

NSF Corrects Weakness from 2010 FISMA Review, but Improvements Needed in IT Operating Environment and Disaster Recovery Plans for Antarctic Program

The Federal Information Security Management Act (FISMA) requires an annual independent evaluation of an agency's information security program. Under a contract with the OIG, Clifton Gunderson LLP conducted this independent evaluation for FY 2011. Clifton Gunderson reported that NSF has an established information security program and has been proactive in reviewing security controls and in identifying areas to strengthen its controls; however, some improvements are needed. NSF concurred with the report and has made progress in addressing the findings. The agency's corrective action plan will be reviewed as part of the FY 2012 evaluation.

A-133 Audits

64 Percent of Single Audit Findings Identify Significant Concerns with Awardees' Ability to Manage NSF Funds

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 114 audit reports reviewed and referred[3] to NSF's Cost Analysis and Audit Resolution (CAAR) Branch this period covered NSF expenditures of $1.01 billion during audit years 2008 through 2011, and resulted in 77 findings at 43

3. We also reviewed and rejected one report based on audit quality deficiencies. Upon receipt of the revised report, the Federal Audit Clearinghouse determined that another federal agency had oversight, and there was no need for us to conduct additional review.

NSF awardees. Four awardees received qualified or adverse opinions on their compliance with federal grant requirements, including 1 awardee who received a qualified opinion on compliance for a program which included NSF Recovery Act expenditures. Forty-nine of the 77 findings (64 percent) were identified as material weaknesses or significant deficiencies in internal control over compliance, calling into question the awardees' ability to adequately manage their NSF awards. Six findings identified by the auditors, including 2 material weaknesses, resulted in $191,639 in questioned costs to NSF awards, of which $181,191 was caused by lack of adequate supporting documentation of the amounts charged to NSF awards.

Awardees' lack of internal controls and noncompliance with federal requirements included: untimely and/or incorrect reporting of time and effort; inadequate support for salary/wages, equipment, travel, and indirect costs charged to awards; inadequate monitoring of subrecipients; inability to prepare the financial statements; and late submission of financial and/or progress reports.

We also examined 37 management letters accompanying the A-133 audit reports and found 16 deficiencies that affected NSF. Auditors issue these letters to identify internal control deficiencies that are not significant enough to include in the audit report, but which could become more serious over time if not addressed. The deficiencies included inadequate tracking, managing, and accounting for NSF costs, ineffective segregation of duties, and inadequate subrecipient monitoring. These deficiencies affected control processes that are essential to ensuring stewardship of NSF funds and preventing fraud and abuse.

Desk Reviews Find Audit Quality and Timeliness Issues in More than 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. Because of the importance of A-133 reports to this oversight process, the OIG reviews 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 reports that are deemed inadequate to the awardees to work with the audit firms to take corrective action.

We reviewed 51 audit reports[4] for which NSF was identified as the cognizant or oversight agency for audit, and found that 31 fully met federal reporting requirements. Twenty reports (39 percent), including 6 of the 17 reports with ARRA expenditures, contained audit quality and timeliness issues. The quality issues we identified included 6 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. Of the 6 reports which included audit findings related to compliance with federal requirements, 3 reports (50 percent) failed to adequately present the required elements of the finding to assist auditee management in correcting the reported deficiency, and 3 reports failed to adequately present the required elements of

4. The audits were conducted by 45 different independent accounting firms.

management's plan to correct the deficiencies reported. In addition, 4 reports failed to include all of the report language required by the American Institute of Certified Public Accountants (AICPA) and OMB Circular A-133, and 3 reports were submitted after the due date required by OMB Circular A-133. Finally, 4 of the reports repeated errors which we had identified to the awardees and auditors during reviews of prior years' 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, or the error did not materially affect the results of the audit. However, we rejected one report due to substantial non-compliance with federal reporting requirements. 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.

OIG Quality Control Review Finds Significant Audit Deficiencies In Single Audit by Public Accounting Firm

Quality Control Reviews consist of on-site reviews of auditor documentation in support of Single Audits. Quality control reviews are an important tool for determining whether Single Audits met government auditing and reporting requirements, and for helping to improve future audit quality.

During this period, we issued a report of our quality control review of the Single Audit of an NSF awardee. We found significant audit quality deficiencies in the audit and instructed the auditors to conduct additional work. The audit quality deficiencies in the single audit performed at WNET.ORG and Subsidiaries (WNET) resulted in a failure to appropriately identify and test for compliance with the requirements applicable to Allowable Costs, Subrecipient Monitoring, and the Schedule of Expenditures of Federal Awards. The auditors agreed with our recommendation to conduct additional test work in these areas. We will review the additional work during the next period.

OIG Follow-up Actions on Quality Control Reviews

Our follow-up review of the audit of Drilling, Observation and Sampling of the Earth's Continental Crust (DOSECC)[5] found that the additional work performed by the auditors generally met applicable Federal requirements.

5. September 2011 Semiannual Report, pp. 29-30.

Investigations

Research Misconduct Investigations

Research misconduct damages the scientific enterprise, is a 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 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. The NSF definition of research misconduct encompasses fabrication, falsification, and plagiarism.

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 delayed promotions and loss of salary. During this period, NSF's actions in research misconduct cases ranged from letters of reprimand to three years of debarment.

We referred eight cases to NSF, which are summarized below. In every case, we recommended that NSF make a finding of research misconduct, send the subject a letter of reprimand, require the subject to complete a Responsible Conduct of Research training program, and other actions as described below. NSF's decisions are pending in all eight cases.

Principal Investigator Plagiarized Text and Figures in Multiple Proposals

A California Principal Investigator's (PI's) documentation practice was so poor that it resulted in a pattern of plagiarism. The PI was the Authorized Organizational Representative and President of a small company without the resources to complete an independent investigation; therefore, we conducted our own investigation. We found substantial copying of text and figures without appropriate attribution, as well as numerous embedded references. The PI told us the practice among the company employees was to use material from any "company documents." The PI considered all documents in his company's possession, as well as any past or current employee's notes from conferences and conversations, to

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be company documents. Indeed, the PI marked material in his proposal as proprietary that had been copied from publicly available papers, because it was in the company's possession and he was unaware of the true source of the text.

The PI's methodology for obtaining and maintaining reference materials is the sloppiest we recall seeing in the history of this office. The PI admitted he is unable to determine the source of much of the plagiarized text we identified. We concluded the PI's practices, coupled with the amount of plagiarism, warrants a one-year debarment to protect the government until the PI can improve the process by which written materials are produced at the company. Additionally, we recommended NSF: require the PI to certify that proposals he submits to NSF, for three years after his debarment ends, contain no plagiarized, falsified, or fabricated material; and bar the PI from serving as a reviewer, advisor, or consultant on an NSF proposal for three years after his debarment ends.

PI Presents Material from a Previously Awarded NSF Proposal as His Own

A New Jersey PI plagiarized text into his proposal from a previously awarded NSF proposal. The PI had received the source proposal from his colleague and co-PI, who had received the proposal from NSF for merit review and gave it to him as an example of a successful proposal. The PI's institution investigated and concluded that the PI knowingly committed plagiarism and placed a formal letter of reprimand in the PI's personnel file; made him ineligible to apply for full professorship until January 2015; and required that he serve on the institution's academic integrity committee for two years.

We concurred with the institution's assessment and recommended that NSF: debar the PI for one year; require that he provide certifications and assurances for three years following the debarment period; and bar him from participating as an NSF reviewer for four years.

NSF Suspends Award After Intentional Plagiarism Found in One Funded and Two Declined Proposals

An assistant professor at an Illinois institution plagiarized text into three proposals. The professor acknowledged copying material without citation, but she argued that: the text included basic, common information in her field; she acted in "honest error;" she misunderstood the rules of plagiarism as they apply to proposals; and she was under time pressure. She also "state[d] unequivocally" that the proposals did not contain any additional inadequately cited text.

The institution's investigation found a number of contradictions in the assistant professor's statements and identified additional plagiarized material in her NSF proposals. The assistant professor plagiarized text and misrepresented data in a written statement she submitted to the institution's investigation committee – and in that statement she asserted that she now has "a clear understanding of the definition of research misconduct as well as the consequence of any deviation from the applicable standards."

The institution concluded that the professor intentionally committed plagiarism and required her to: inform her co-PI of the investigatory findings; complete a course on Responsible Conduct of Research and ensure each of her graduate students also completes a course; submit to a university administrator for review all publication manuscripts and proposals she intends to submit to external entities; and encourage the use of plagiarism detection software for both her work and the work of her students. We concurred with the institution's assessment.

The NSF program officer who recommended one of the plagiarized proposals for funding told us the plagiarized text in the section was material to his decision to recommend the proposal for funding, which meant the plagiarism amounted to fraud. We referred the violation to an Assistant United States Attorney, who declined prosecution in lieu of administrative action.

Based on our recommendation, NSF immediately suspended the award. We subsequently issued our report of investigation and recommended that NSF require the professor to provide certifications and assurances for three years, and terminate her NSF award, which will make $11,000 available to NSF to put to better use.

University Terminates Two Faculty Members for Plagiarism

Our office concluded that a PI and co-PI at a Georgia university committed research misconduct when they plagiarized into two NSF proposals. Their university's investigation found that the PI and co-PI intentionally plagiarized. They were recommended for termination, but both chose to retire instead.

We concurred with the university's assessment and recommended that NSF, for three years: require both the PI and co-PI to: provide certifications stating all documents submitted to NSF are free from plagiarism, falsification, and fabrication; require both to obtain assurances from an appropriate official that documents they submit to NSF are free from plagiarism, falsification, and fabrication; and bar both from serving as a reviewer, advisor, or consultant on an NSF proposal.

Assistant Professor Plagiarizes in Two NSF Proposals

An assistant professor at a Mississippi university plagiarized a substantial amount of text and a figure from 19 sources into two NSF proposals. The professor admitted to the copying, but said he believed the embedded references in the copied text were sufficient to attribute the original source of the intellectual content. His university's investigation found that the professor committed plagiarism intentionally that was part of a pattern that started as early as his doctoral dissertation. The university declined renewal of the professor's contract and placed limitations on his access to research funding in the interim. The professor subsequently resigned.

We concurred with the university's assessment and recommended that NSF, for three years, require certifications and assurances, and ban the subject from serving NSF as a reviewer, advisor, or consultant.

Faculty Member Accepts Responsibility for Plagiarizing from an Awarded Proposal

An assistant professor at a New York university submitted a proposal to NSF that contained a large amount of material plagiarized from a previously awarded NSF proposal authored by a PI at another university. The university's investigation determined that the professor received a copy of the awarded NSF proposal from the PI, which he gave to a graduate student who was drafting the professor's NSF proposal. The professor said that he told the student merely to use the awarded proposal as guidance, and although he said the student did the actual copying, the professor accepted full responsibility. The university concluded that he was guilty of reckless plagiarism due to improper oversight of the graduate student and insufficient care with the content of the draft proposal. We concurred and recommended that NSF, for two years, require certifications and assurances, and ban the PI from serving NSF as a reviewer, advisor, or consultant.

University Identifies a Pattern of Plagiarism by PI

A PI at an Illinois university plagiarized in an NSF proposal, which he attributed to his writing style, computer problems, and physical illness. During the university's investigation, the PI provided the committee with what he claimed was the "final" proposal he had intended to submit to NSF. While there was no copied text within the final proposal, the committee could not determine with confidence when that document had been created and, most significantly, noted that the only editorial changes that document contained were in the paragraphs our office had flagged.

The university concluded that the PI recklessly committed plagiarism in his NSF proposal. It also found instances of plagiarism in nine non-NSF proposals prepared by the PI, which constituted "a clear and ongoing pattern of plagiarism." The university reduced the assistant professor's salary by one-ninth; prohibited him from applying or receiving a university-level grant for one year; required him to take an academic integrity course; and required him to develop resource material related to academic integrity.

We concurred and recommended that NSF, for two years, require certifications and assurances, and bar him from participating as an NSF reviewer, advisor, or consultant.

Co-PI Confuses Public Domain with Common Knowledge

A Puerto Rico university co-PI committed research misconduct when she plagiarized from multiple documents in an NSF proposal. The co-PI argued that much of the text she copied did not require attribution because it was found on government web pages. The committee explained the difference between information that is common knowledge, which does not require citation, and information that is in the public domain, such as on a government web site, which requires citation.

The university concluded the co-PI committed research misconduct and reprimanded her, required monitoring of her proposals and publications for three years, and required her to take a research ethics course. We agreed and recommended that NSF, for two years, require her to provide certifications and assurances, and bar her from serving as a reviewer, advisor, or consultant on NSF proposals.

PI Plagiarized Text and Figures in Multiple Proposals

A PI from an Ohio university plagiarized text and figures into multiple NSF proposals. The PI's university's investigation concluded that the PI intentionally plagiarized and required the PI to withdraw all pending grant applications from NSF and will prohibit the PI from submitting proposals to NSF for three years; allowed the PI to submit proposals to other funding agencies only under the supervision of a dean following a one-year suspension; and prohibited the PI from taking on additional graduate students and participating in graduate student committees. The PI is required to review the progress of her current graduate students with a dean and it is up to the dean's discretion as to whether the PI can continue to mentor students.

We concurred with the university and recommended that NSF, for two years, bar the PI from serving as a reviewer, advisor, or consultant on an NSF proposal, and require certifications and assurances.

Actions by NSF Management on Previously Reported Research Misconduct Investigations

NSF has taken administrative action to address our recommendations on nine research misconduct cases reported in previous semiannual reports. In each case, NSF made a finding of research misconduct and issued a letter of reprimand. NSF also took additional significant actions in response to our recommendations as summarized below.

NSF debarred for one year a Louisiana university administrator who knowingly copied from a funded NSF proposal into his own proposal.[6] The one-year debarment will be followed by certifications, assurances, and a ban from serving as a reviewer, advisor, or consultant for three years following the debarment period.

In the case of a faculty member at an Illinois university who plagiarized text into six NSF proposals,[7] NSF required certifications and assurances for four years, barred service as an NSF reviewer for four years, and required that the faculty member complete a course in the Responsible Conduct of Research. The faculty member appealed all of these actions to the NSF Director, whose decision is pending.

6. March 2011 Semiannual Report, pp.25-26; September 2011 Semiannual Report, p.16.
7. September 2011 Semiannual Report, p.12.

In the case of a researcher at a small research firm who copied hundreds of lines of text into six proposals submitted to NSF's Small Business Innovation Research (SBIR) program,[8] NSF required three years of certifications and assurances, barred service as an NSF reviewer for three years, and required the researcher to complete a course in the Responsible Conduct of Research. The researcher appealed the imposition of assurances to the NSF Director, who rescinded the requirement.

In the case of a faculty member at an Illinois university who plagiarized text into seven NSF proposals,[9] NSF required certifications and assurances for three years, barred service as an NSF reviewer for three years, and required the faculty member to complete a course in the Responsible Conduct of Research.

In the case of a professor at a South Dakota university who plagiarized from a proposal he received from his mentor, who had been asked to review the proposal for NSF,[10] NSF required certifications and assurances for two years, required completion of a Responsible Conduct of Research course, and barred him from serving NSF as a reviewer, advisor, or consultant for two years.

In the case of a new research faculty member at a New York university who plagiarized in an NSF proposal,[11] NSF required certifications and assurances for two years, required completion of a Responsible Conduct of Research course, and barred him from serving NSF as a reviewer, advisor, or consultant for two years.

In the case of a department chair at a Michigan university who plagiarized text and figures into three NSF proposals,[12] NSF required two years of certifications, banned service as an NSF reviewer for two years, and required the chair to complete a course in the Responsible Conduct of Research. The chair member appealed the training requirement to the NSF Director, who upheld it.

In the case of a CEO/PI of a small business who submitted an SBIR proposal containing a significant amount of plagiarized text,[13] NSF required certifications for two years, and required certification of attending an ethics class within one year.

In the case of a researcher in Texas who plagiarized text into a paper provided to NSF,[14] NSF required him to attend a Responsible Conduct of Research course, and required him to provide certifications for one year. The researcher appealed NSF's finding, arguing he did not physically copy the text (his consultant did) and he was more of an editor than author of the paper. NSF's Director denied his appeal, concluding that, as author, he is responsible for the content of the paper.

8. September 2011 Semiannual Report, pp.12-13.
9. September 2011 Semiannual Report, pp.11-12.
10. September 2011 Semiannual Report, p.14.
11. September 2011 Semiannual Report, p.13.
12. September 2011 Semiannual Report, p.14.
13. September 2011 Semiannual Report, p.13.
14. September 2011 Semiannual Report, pp.14-15.

Missing Laboratory Notebooks Result in Hawaii University Receiving Questionable Administrative Practices Letter

We received multiple complaints about possible research misconduct and misuse of NSF funds by a PI at a Hawaii university. Based on our request, the university conducted an inquiry and found that the research misconduct allegations were not substantiated. However, the laboratory notebooks were missing, and the university stated that it would address this questionable practice of post-production data storage.

We reviewed the financial documents for all expenditures incurred by the grant, and concluded that the misuse of funds allegation was also unsubstantiated. We issued a questionable administrative practices letter to the university to emphasize the importance of maintaining proper data storage, asking it to ensure its faculty are aware of the requirement to keep all grant records, including original data, for three years after the close of the NSF grant.

Maintaining Laboratory Records

Research laboratory records can vary widely between scientific disciplines and even between laboratories within the same discipline. Publications exist that describe methods for maintaining accurate and detailed laboratory records. Absent adequate records, the validity of any subsequently presented or published data can be called into question. In the course of our investigations into allegations of research misconduct, we typically assess the quality of laboratory records by considering the following:

Completeness: The record should describe all the activities of the researcher, not just the successful experiments. Corrections to the record are to be expected, and should be fully documented. A laboratory notebook can contain anything, and should contain everything related to the research effort.

Linkage: A written laboratory notebook should reference electronic records by name and location in sufficient detail to enable the electronic records to be located. A clear link between the electronic data files and the lab notebook, along with the experimental methods used, should be adequately documented. Notebooks should also reference the appropriate instrument logs and billing records if appropriate.

Accuracy: Records should display a contemporaneous chronology of laboratory activity and results. The record must facilitate the reconstruction of activities by another competent researcher.

In addition, we believe the following should be considered best practices in the maintenance of research notebooks:

Review: A regular (weekly or monthly) documented review of laboratory notebooks by a supervisor or a faculty advisor ensures consistency and quality.

Safekeeping: All laboratory records should be backed up with copies stored in an alternate location. Sensitive records should be access-restricted, or in read-only form.

Several recent investigations of alleged data falsification and/or data fabrication have been complicated by the poor quality or absence of laboratory notebooks and original data, both hardcopy and digital. In addition to being contrary to accepted research practices, failure to maintain data is a violation of NSF's award conditions, which state that awardees "must retain financial and programmatic records for a period of 3 years from the date the [final financial report] is submitted.[15] Data acquired during experiments and the subsequent analyses are part of these programmatic records, and it is the awardee's legal obligation to retain these records even if the researcher leaves the institution. Failure to maintain data is considered a departure from accepted research practices and is an indicator of possible research misconduct. Furthermore, failure to retain data also prevents sharing of data with the research community, which is also expected under NSF's award conditions.[16]

Civil and Criminal Investigations

Texas University Returns Over $477,160 to NSF

As previously reported,[17] a PI at a Texas university improperly subcontracted work on his NSF grant to a company in which he had 25 percent ownership, in violation of conflict of interests restrictions. The university cancelled the subcontract and credited the $30,000 that had been charged to the grant, and the PI agreed to resign from the university. After the PI submitted a progress report that reflected no work attributable to the funded project, the university reviewed the PI's work on the grant and concluded that it did not justify the funds that had been expended. The university decided it should return the full grant amount totaling $386,200 to NSF, as well as $90,960 remaining on the PI's other NSF grant.

NSF to Recover $164,000 from North Carolina Small Business Owner

A North Carolina small business owner reached a settlement agreement with the United States Attorney's Office to repay $164,000 to NSF, in addition to the $225,000 that was retained by NSF upon termination of the award. The small business received four NSF SBIR awards totaling $653,500, of which $362,500 had been distributed. During our investigation, NSF suspended a Phase II SBIR award to the company and ultimately terminated the award, retaining $225,000 of the remaining funding.

15. Research Terms and Conditions § 53(a).
16. NSF Agency-Specific Requirements § 30.
17. September 2011 Semiannual Report, p.9.

Our investigation concluded that the owner misrepresented company personnel in proposals and reports he submitted to NSF, requested more NSF funds than necessary to complete the proposed projects, and retained profit beyond what is permissible under the SBIR program. While the settlement agreement requires the company to pay $164,000, neither the company nor the owner admitted to any wrongdoing.

PI Pleads Guilty to Wire Fraud, False Statements, and Money Laundering

We previously reported[18] on the termination of a duplicative NSF award, resulting in $261,509 put to better use. The PI has now pled guilty to wire fraud, false statements, and money laundering in our joint investigation with the Department of Energy, the Department of Health and Human Services, and the Internal Revenue Service. The charges relate to fraud involving a National Institutes of Health SBIR award to the PI's company, as well as duplicative funding between the Department of Energy and NSF at his former university. The PI is scheduled to be sentenced in July 2012.

Former School Superintendent Pleads Guilty to Mail Fraud Charges Related to NSF and Department of Education Grants

We previously reported the indictment of a former superintendent of an elementary school district and two former university professors in California for fraud related to NSF and Department of Education grants to support elementary school science and math education.[19] On March 12, 2012, the former superintendent pled guilty to one count of mail fraud for seeking and obtaining multiple duplicate travel reimbursements totaling $59,882.

With this plea, he admitted that he presented inaccurate and unreliable data to show the results of standardized science testing of students validated his teaching methods. He also pled guilty to one count of mail fraud related to a scheme involving the two former university professors that diverted NSF and Department of Education grant funds to their personal benefit. The former superintendent is scheduled to be sentenced in June 2012.

Conviction for Small Business Technology Transfer Fraud Leads to More than $56,000 in Restitution to NSF

We previously reported[20] on the indictment and arrest of the owner of a South Dakota company for false claims involving a Small Business Technology Transfer (STTR) award, which were uncovered in the course of investigating an allegation of plagiarism in the award proposal. The false claims involved false statements about the employment of the PI by the company, and about the use of the initial $100,000 payment of award funds, most of which was spent to pay balances on personal credit cards.

18. September 2011 Semiannual Report, p.9.
19. March 2011 Semiannual Report, pp.20-21.
20. September 2011 Semiannual Report, p.8.

The owner pled guilty to one count of making false claims and agreed to pay restitution of $56,700 to NSF and $32,485 to the South Dakota university that performed subcontract work under the award. The owner will be sentenced in June 2012.

Former NSF Senior Executive Service Employee Debarred For 10 Years

As previously reported,[21] a former NSF employee pled guilty to felony charges for filing a false financial disclosure to NSF and a false federal tax return and was sentenced to six months home detention, $15,393 restitution, and a $100,000 fine. Based on our recommendation, NSF debarred the former employee for ten years, and proposed to debar for ten years the Maryland nonprofit organization that facilitated his crime.

Former University Employee Debarred

We previously reported[22] on the conviction of a former employee at an Arizona university who charged nearly $17,000 for personal items to an NSF award. Subsequent to the conviction, NSF accepted our recommendation and debarred the former employee for three years.

School District Repays NSF Over $79,000

An investigation of a Missouri public school district's financial administration of an NSF award indicated that the school district submitted false certifications in violation of the civil False Claims Act. The school district entered into a settlement agreement with the Department of Justice, under which it agreed to repay NSF $79,486, as well as abide by a five-year compliance plan.

PI and His Company Suspended Government-Wide

Our investigation substantiated that a company improperly received funding based upon false effort information in project reports submitted to NSF by the PI. During the investigation, the PI formed a new company and sought additional NSF funding. Based on our recommendations, NSF terminated the award and suspended the PI and his new company government-wide pending the conclusion of our investigation.

Company Returns $7,300 to NSF

Our investigation of a company that obtained an SBIR grant from NSF found that the company failed to comply with NSF SBIR grant conditions regarding use of the funds. As a result, the company refunded $7,300 to NSF.

Two Companies and Individuals Suspended Government-Wide and $75,000 of Funds to Better Use

An investigation identified two related companies that may have improperly received federal funding based upon misrepresentations of PI eligibility and overlapping funding. Based on our recommendation, NSF suspended the

21. March 2011 Semiannual Report, p.20; September 2011 Semiannual Report, p.10.
22. September 2010 Semiannual Report, p.8.

companies and two associated individuals government-wide pending the conclusion of our investigation. NSF also terminated a current award to one of the companies, leaving $75,000 of funds put to better use.

Florida Businessman Pleads Guilty to Misuse of NSF Logo

We previously reported on the indictment and arrest of the owner of a company in Florida who used the NSF name and logo fraudulently for commercial gain.[23] The company owner has since pled guilty to falsely making, forging, and using the NSF seal and he is scheduled to be sentenced in May 2012.

Administrative Investigations

Former Program Officer Shares Confidential Documents with Colleagues

Our investigation concluded a former NSF program officer and Intergovernmental Personnel Act employee shared confidential NSF proposals, reviews, a panel summary, and annual reports with a colleague upon her return to her home institution. We received an allegation that the program officer had provided the documents to her colleague to use in their research. We were particularly concerned about documents that would not have been publically available, even through a Freedom of Information Act request. When interviewed, the program officer offered different accounts of the circumstances through which her colleague could have obtained the documents, none of which was consistent with the evidence. During our investigation, we also learned that NSF was considering bringing the program officer back to NSF as a permanent program officer.

Based on our investigation we recommended that NSF consider appropriate actions to protect the integrity of its operations, and consider under what conditions, if any, it would permit the program officer to return to NSF in a trusted position such as program officer, reviewer or panelist. We also recommend that NSF bar the program officer from serving as a reviewer or advisor for three years. NSF agreed with our recommendations and said it had no plans to hire the program officer, it would not use her as a reviewer for three years, and it would emphasize the importance of confidential documents to program staff.

More than $310,000 Recovered by NSF Due to Human Subjects Research Concerns

As previously reported,[24] NSF suspended awards for a PI at a Texas university due to concerns about violations of human subjects regulations and management of grant funds. The PI's noncompliance included poor record keeping, unapproved protocol or consent form modifications and the over-enrollment of human subjects in research studies. Following our evaluation, the university instituted a revision of its Institutional Review Board (IRB) review processes and additional oversight and education regarding occurrences of IRB noncompli-

23. September 2011 Semiannual Report, p.8.
24. September 2011 Semiannual Report, p.20.

ance. The university imposed several corrective measures upon the PI, and the PI subsequently left the institution. The suspended NSF grants were terminated and the remaining obligations cancelled with $310,454 recovered by NSF.

Researcher Changed Research Activities Without NSF Approval, Resulting in More than $170,000 Recovered by NSF

As previously reported,[25] a PI at a California university performed human subjects research activities which, although within IRB approval, were outside the scope of the NSF award and were conducted without NSF's prior approval. NSF suspended the award and required the PI to submit an erratum for a recent publication, removing the acknowledgement of NSF funding for studies related to the out-of-scope activities.

The university identified $50,309 to be returned to NSF for the costs related to the out-of-scope research activities. In addition, following completion of the work, NSF will deobligate $120,847 of unexpended award funds to be put to better use. Several remedial training sessions were imposed on the PI and faculty on responsible grants management topics such as effort reporting, scientific/methodological scope changes, multiple award administration, IRB protocol documentation, annual progress reporting and appropriate citation practices in research publications.

Management Implication Reports

Review of NSF Employee Use of Transit Subsidy Program Finds Significant Abuse

Our review of NSF's Transit Subsidy Benefit Program, which provides a tax-free subsidy to be used solely for commuting, found that almost half of the participants in the sample misused the subsidy by using it to pay for parking or for apparent personal trips. Two-thirds of the misuse involved paying for parking, while the remaining third involved travel that was not related to commuting.

We issued a subpoena to the Washington Metropolitan Area Transit Authority (WMATA) for records of use of the subsidy by 750 NSF employees participating in the program. Because retrieving records from its system is burdensome, WMATA provided records for a fourth of the employee participants covering a period of just eight months. We found that the amount misused ranged from $111 to $658 over eight months, and was more than $100 for approximately a third of the employees in the sample. We estimated that a review of all records of subsidy users would reveal misuse totaling nearly $120,000 annually if the findings from this random sample were representative of all NSF subsidy users.

While our review was underway, the subsidy program was modified and, as of October 2011, employees are not able to use the subsidy for parking, and employees cannot build up large balances of unused subsidy funds (which

25. September 2011 Semiannual Report, pp.19-20.

facilitated misuse). As a result, misuse of the subsidy for parking will no longer be an issue, and the potential for misuse for non-commuting travel is greatly reduced.

We also found that some NSF employees in our sample misused the Pre-Tax Parking Benefit program. Under this program, employees do not have to pay taxes on the portion of their income they use for parking when they commute to work. Our review revealed that sixteen of the employees who used $3,600 of their transit subsidy to pay for parking appear to have also received almost $12,000 in pre-tax parking benefit over eight months.

When employees apply for the transit subsidy, they certify to knowledge of the program's restrictions, and that making a false certification may make them ineligible for the program, but they are not warned that making false statements or using subsidy funds for personal use is a federal crime. When they apply for the Pre-Tax Parking Benefit program, NSF employees do not have to certify that they will use the tax-exempt money for parking, and they are not warned that failure to use the benefit properly constitutes tax evasion.

We referred the employees who appeared to be misusing the Transit Subsidy Program and/or Pre-Tax Parking Benefit program to NSF for appropriate action (including recovery of the misused funds), and encouraged NSF to evaluate other employee participants' usage as well. Prospectively, we recommended that NSF:

- Require annual certifications of participants in the Public Transportation Subsidy Program that they: will comply with all the requirements of the program; understand that providing false information to obtain benefits and using benefits for personal travel are crimes.

- Require annual certifications of participants in the Pre-Tax Parking Benefit Program that they: will use the tax-exempt funds for work parking only; will adjust the amount of tax-free income they receive according to actual parking costs incurred; understand that providing false information to obtain benefits is a crime; and understand that failing to report as income withheld funds that were not used for parking constitutes tax evasion.

NSF Implements Recommended Changes to Improve Oversight Plans for Projects Involving International Subawardees

We reviewed Oversight Plans for institutions collaborating with international subawardees in an NSF program.[26] The lead institutions were required to submit and implement Oversight Plans to ensure subawardee compliance with a variety of requirements, and our review determined that the Plans generally did not substantively address all of the requirements.

Based on our recommendations, NSF modified its solicitation for the next round of proposals for the program to clearly require Oversight Plans that address all of the program's requirements, and it asked the current grantees to describe

26. September 2011 Semiannual Report, p.21; March 2011 Semiannual Report, p.30; September 2010 Semiannual Report, p.14.

how they would address RCR training and research misconduct enforcement. Because most of the awardees did not substantively improve their Plans in this regard, we conducted a follow-up review.

We found that the majority of the original awardees' Plans, as well as three of the four new awardees' Plans, were deficient regarding RCR training and research misconduct. In response to our recommendations, NSF agreed to:

- Determine how to bring the current program awardees' Oversight Plans in line with the requirements for RCR training and research misconduct reporting and enforcement; and

- Make no future awards for proposals that do not provide comprehensive Oversight Plans that were demonstrably developed in collaboration with the international subawardees, including strong plans for RCR training and research misconduct reporting and enforcement.

NSF and NSB Improve Special Handling of National Science Board Member and Nominee Proposals

Our office received information that two proposals submitted by current National Science Board (NSB) members did not undergo the special handling process detailed in NSF's Proposal and Award Manual. We reviewed these proposals as well as other proposals submitted by NSB members. We determined that, while no misconduct occurred, there were procedural lapses in implementing the Manual's stated process. NSF and NSB were receptive to our recommendations for improvement and have outlined a plan to implement our recommendations.

NSF Implements Recommended Changes to the SBIR/STTR Programs

We previously discussed our review of recent investigations related to SBIR/STTR programs, and our recommendations to help NSF reduce the risk of fraud by requesting additional information from awardees.[27] NSF agreed to all of our recommendations and now requires awardees to provide additional documentation to support use of outside facilities, a list of all company owners and officers and their current employers, and disclosure of relationships between the PI and any subcontractor, consultant, lessor, owner or other position in the awardee company prior to the award.

27. September 2011 Semiannual Report, p.18.

Congressional Testimony

In November 2011, the Inspector General testified before the Senate Homeland Security and Government Affairs Committee at a hearing titled, "Weeding out Bad Contractors: Does the Government have the Right Tools?" The testimony focused on the Suspension and Debarment (S&D) Working Group's September 2011, report, *Don't Let the Toolbox Rust: Observations on Suspension and Debarment, Debunking Myths, and Suggested Practices for Offices of Inspectors General*, which built upon OIG survey information.

The overarching purpose of the report was to raise the profile of suspension and debarment within the IG community and to identify practices that could assist OIGs in utilizing these tools. Based on the report, factors that may adversely influence the pursuit of suspension and debarment include a general lack of awareness or full understanding about these tools and concerns about their potential impact on contemporaneous civil or criminal proceedings.

As a step toward addressing these challenges, the report discusses and attempts to dispel some common misconceptions about suspension and debarment, namely:

1. that contemporaneous civil or criminal proceedings will be compromised if suspension or debarment is pursued,
2. that suspension and debarment actions must be tied to judicial findings (conviction, civil judgment, or indictment), and
3. that referrals may not be based on OIG audits or inspections.

Finally, the report identified a number of suspension and debarment practices that could help boost the overall use and effectiveness of these tools within the IG community. These practices included assigning dedicated personnel within OIGs; identifying and recommending improvements to agency suspension and debarment programs; using investigative, audit, and inspection reports to identify suspension and debarment candidates; enhancing OIG referral practices; and developing strong OIG S&D policies.

An agency's vigorous and appropriate use of suspension and debarment protects not just the integrity of that agency's programs, but the integrity of procurements and financial assistance awards across the entire federal government. Through its various efforts, the Working Group has actively sought to raise the profile of suspension and debarment as integral tools to help protect taxpayer dollars.

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Also in November, the Inspector General testified before the House Committee on Science, Space, and Technology Subcommittee on Investigations and Oversight about the OIG's continuing efforts to monitor the $3 billion in Recovery Act funds provided to the National Science Foundation. The OIG's approach to ARRA oversight has consisted of two phases: 1) an initial *proactive* phase for risk mitigation activities that was accomplished primarily during the funding stage to help prevent problems and prepare for more substantive work; and 2) an *operational* phase during which we planned to undertake more traditional audits, investigations, and other types of reviews.

Our work during the proactive phase consisted of real-time reviews of NSF's ARRA-related activities, identifying high-risk ARRA awardees, and recommending ways to make NSF's award process more accountable and transparent. Now that NSF's $3 billion in ARRA funding has been fully obligated, our focus has shifted to an *operational* phase during which we are conducting more traditional audits, investigations, and other types of reviews.

Therefore, we are directing significant oversight resources to NSF's three major construction projects: the Alaska Region Research Vessel, the Ocean Observatories Initiative (OOI), and the Advanced Technology Solar Telescope (ATST) due to the large amounts of ARRA funding they received, the complexity of the projects, and the management challenges inherent in such projects.

We began this oversight activity with audits of the cost proposals for OOI, which had a total projected cost of $386 million (including $106 million in ARRA funds), and for ATST, which had total projected costs of $298 million, (with $146 million in ARRA funds). We reviewed these cost proposals because they constitute the basis upon which the awardees can draw down funds over the course of their awards.

DCAA also found that there is a lack of meaningful controls over the contingency funds provided to recipients. While awardees are supposed to seek NSF approval before drawing down contingency funds in excess of a certain threshold, DCAA found that at present there are no effective technical barriers to prevent them from being drawn down in advance and used for purposes other than a contingent event. Accordingly, there is a heightened risk of fraud or misuse of these funds.

Outreach

Outreach remains an essential component of our mission to prevent and detect fraud, waste, and abuse and to promote economy, efficiency, and effectiveness in NSF programs and operations. The numerous proactive activities undertaken by OIG staff have addressed programmatic and financial responsibilities of NSF awardees, education of NSF awardees about fraud recognition and prevention, and research misconduct and responsible conduct of research.

The Inspector General continues to lead the SBIR working group under the auspices of the Council of Inspectors General on Integrity and Efficiency (CIGIE). Pursuant to the National Defense Authorization Act which reautho-

rized the SBIR program, this group has been working with SBA to develop the certifications called for in the SBIR/STTR Reauthorization and to strengthen the anti-fraud provisions in the certifications. Our office has urged uniform certifications, modeled on those at NSF, as an effective weapon against fraud in SBIR/STTR programs and as a means to improve the government's ability to prosecute such fraud when it does occur.

With the Federal Housing Finance Agency Inspector General the NSF Inspector General also continues to lead a Suspension and Debarment (S&D) Working Group, under the auspices of the CIGIE Investigations Committee. In October 2011, the group hosted an S&D workshop aimed at increasing understanding and effective use of S&D to protect government funds against fraud, waste, and abuse. The workshop was attended by more than 450 investigators, auditors, Inspectors General, and S&D officials from over 60 agencies and organizations.

The IG is also leading the Grant Reform Initiatives Working Group which is focused on several areas including the Single Audit threshold and changes in time and effort reporting. The group's overarching concern is ensuring that meaningful controls and robust accountability are maintained.

The NSF Inspector General led a presentation to the Japanese ministry responsible for formulation of science and technology policy and with the Assistant Inspectors General for audit and investigations, explained our policies and procedures for oversight of NSF programs and operations. The Inspector General and OIG staff also provided information to representatives from Korea's National Research Foundation about our efforts to identify and prevent waste and fraud.

Our office has extensive knowledge and experience in both investigating grant fraud and research misconduct, and in monitoring financial compliance with grant conditions and accounting principles and we are often requested by universities and others in the research community to participate in meetings, make presentations, and provide instruction. For example, in the past six months, the IG and staff gave presentations for new grant recipients and to a number of organizations including the Society of Research Administrators International; the Association of Government Accountants; the College Cost Accounting Conference; the National Council of University Research Administrators; and the Society of Corporate Compliance and Ethics.

We also participated in meetings of the National Single Audit Coordinators, Federal Audit Executive Council, and the Financial Statement Audit Network. The Assistant Inspector General for Audit continues to serve as the chair of the Federal Audit Executive Council and has been instrumental in providing peer review training in the IG community. Finally, we provided research misconduct briefings at six universities and provided instructors to FLETC for grant fraud-related courses.

New Assistant Inspector General for Investigations

Alan Boehm assumed the duties of Assistant Inspector General for Investigations in March 2012. Mr. Boehm comes to the OIG with over forty years of experience in the federal investigative community. Most recently he served as the Assistant Director for Accountability at the Recovery Accountability and Transparency Board where he was instrumental in re-engineering the Recovery Operations Center into a premier tool for identifying potential fraud risks.

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		$226,238,105
B.	Recommendations that were issued during the reporting period		$0
C.	Adjustments related to prior recommendations		$0
Subtotal of A+B+C			$226,238,105
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 recommenda-tions that were not agreed to by management	$0
E.	For which no management decision had been made by the end of the reporting period		$226,238,105
For which no management decision was made within 6 months of issuance			$226,238,105

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	37	$30,247,504	$6,029,095
B.	That were issued during the reporting period	9	$1,056,790	$1,026,555
C.	Adjustment related to prior recommendations	4 [28]	$129,736	$319
Subtotal of A+B+C			$31,264,498	$6,899,362
D.	For which a management decision was made during the reporting period	26	$5,478,698	$3,804,061
	i) dollar value of disallowed costs ii) dollar value of costs not disallowed	N/A N/A	$2,154,256 $3,324,442	N/A N/A
E.	For which no management decision had been made by the end of the reporting period	20	$25,955,332	$3,251,908
For which no management decision was made within 6 months of issuance		12	$24,898,766	$2,225,353

28. Additional questioned costs were identified during audit resolution for one OIG-performed audit and three A-133 audits.

Status of Recommendations that Involve Internal NSF Management Operations

Open Recommendations (as of 09/30/2011)	
Recommendations Open at the Beginning of the Reporting Period	52
New Recommendations Made During Reporting Period	32
Total Recommendations to be Addressed	84
Management Resolution of Recommendations[29]	
Awaiting Resolution	28
Resolved Consistent With OIG Recommendations	56
Management Decision That No Action is Required	0
Final Action on OIG Recommendations[30]	
Final Action Completed	36
Recommendations Open at End of Period	**48**

Aging of Open Recommendations

Awaiting Management Resolution	
0 through 6 months	28
7 through 12 months	0
More than 12 months	0
Awaiting Final Action After Resolution	
0 through 6 months	7
7 through 12 months	1
More than 12 months	12

29. "Management Resolution" occurs when OIG and NSF management agree on the corrective action plan that will be implemented in response to the audit recommendation.
30. "Final Action" occurs when management has completed all actions it agreed to in the corrective action plan.

List of Reports

NSF and CPA-Performed Reviews [31]

Report Number	Subject	Questioned Costs	Unsupported Costs	Better Use of Funds
12-1-001	ICSI International Computer Science Institute	$451,189	$444,551	$0
12-1-002	Johns Hopkins University – MD	$169,532	$156,607	$0
12-1-003	University of Notre Dame – IN	$244,430	$244,430	$0
12-2-002	NSF's FY 2011 Financial Statement Audit	$0	$0	$0
12-2-003	NSF FY 2011 Special Purpose Financial Statement	$0	$0	$0
12-2-004	FISMA 2011 Independent Evaluation	$0	$0	$0
12-2-005	FY 2011 FISMA Independent Evaluation	$0	$0	$0
12-2-006	NSF's FY 2011 Management Letter	$0	$0	$0
12-2-007	NSF's Financial and Administrative Staffing Needs	$0	$0	$0
12-2-008	NSF's Independent Research and Development Program	$0	$0	$0
12-2-009	NSF Funded Conference Activities	$0	$0	$0
12-3-001	Request of Specific Cost Information Related to Contingencies on COL	$0	$0	$0
12-6-007	QCR of Marks Paneth and Shron, LLP (WNET.org)	$0	$0	$0
12-7-001	SIGAR Peer Review of Special Inspector General for Afghanistan Reconstruction	$0	$0	$0
12-7-002	IQCR of #11-2-006 Workforce Management	$0	$0	$0
12-7-005	IQCR CPE Review 4-1-2001 to 3-31-2011	$0	$0	$0
	Total:	**$865,151**	**$845,588**	**$0**

31. The office issued 16 reports this semiannual period.

NSF-Cognizant Reports

Report Number	Subject	Questioned Costs	Unsupported Costs
12-4-001	12-10 Astrophysical Research Consortium – WA	$0	$0
12-4-002	12-10 American Association of Community Colleges – DC	$0	$0
12-4-003	12-10 Boyce Thompson Institute for Plant Research – NY	$0	$0
12-4-004	12-10 Stroud Water Research Center – PA	$0	$0
12-4-005	12-10 American Association of Physics Teachers – MD	$0	$0
12-4-006	12-10 Woods Hole Oceanographic Institution – MA	$0	$0
12-4-007	12-10 Triangle Coalition for Science & Technology – VA	$0	$0
12-4-008	12-10 AIM American Institute of Mathematics – CA	$0	$0
12-4-009	12-08 DOSECC Drilling Observation and Sampling of the Earth's Continental Crust – UT	$179,779	$179,779
12-4-010	3-10 Decision Research – OR	$0	$0
12-4-011	12-10 CUAHSI Consortium of Universities for the Advancement of Hydrologic Science – DC	$0	$0
12-4-012	12-10 DOSECC Drilling Observation and Sampling of the Earth's Continental Crust – UT	$0	$0
12-4-013	12-10 Space Science Institute –CO	$0	$0
12-4-014	12-10 USMFS George E. Brown US-Mexico Foundation for Science – DC	$0	$0
12-4-015	12-10 Shodor Education Foundation, Inc. – NC	$0	$0
12-4-016	12-10 REJECTED Larta Institute – CA	$0	$0
12-4-017	6-11 GSU Georgia Southern University Research and Service Foundation – GA	$0	$0
12-4-018	5-11 Oregon Museum of Science & Industry	$0	$0
12-4-019	6-11 New Mexico Consortium	$0	$0
12-4-020	6-11 Cal Poly Corporation – CA	$0	$0
12-4-021	6-11 Viewpoints Research Institute, Inc. – CA	$0	$0
12-4-022	6-11 Woods Hole Research Center, Inc. – MA	$0	$0
12-4-023	6-11 NISS National Institute of Statistical Sciences – NC	$0	$0
12-4-024	6-11 CBIA Education Foundation, Inc. – CT	$0	$0
12-4-025	6-11 Cary Institute of Ecosystem Studies, Inc. – NY	$0	$0
12-4-026	6-11 California Academy of Sciences	$0	$0
12-4-027	6-11 Science Museum of Minnesota	$0	$0
12-4-028	6-11 University Enterprises, Inc. – CA	$0	$0
12-4-029	6-11 Public Radio International, Inc. – MN	$0	$0
12-4-030	6-11 Queens Borough Public Library – NY	$0	$0
12-4-031	6-11 Exploratorium – CA	$0	$0
12-4-032	6-11 Pacific Science Center Foundation – WA	$0	$0
12-4-033	12-10 Detroit Area Pre-College Engineering Program – MI	$0	$0
12-4-034	6-11 Maine Mathematics and Science Alliance – ME	$0	$0

12-4-035	6-11 Bigelow Laboratory for Ocean Sciences – ME	$0	$0
12-4-036	3-11 Berkeley Geochronology Center – CA	$0	$0
12-4-037	9-11 ARCUS Arctic Research Consortium of the US – AK	$0	$0
12-4-038	8-11 Association of American Geographers – DC	$0	$0
12-4-039	6-11 IRIS Incorporated Research Institutions for Seismology – DC	$0	$0
12-4-040	6-11 Maryland Academy of Sciences	$0	$0
12-4-041	6-11 National Alliance for Partnerships in Equity Education Foundation – PA	$0	$0
12-4-042	9-11 Concord Consortium – MA	$0	$0
12-4-043	6-11 Paleontological Research Institution – NY	$0	$0
12-4-044	6-11 NEON National Ecological Observatory Network, Inc. – CO	$0	$0
12-4-045	9-11 UCAR University Corporation for Atmospheric Research – CO	$0	$0
12-4-046	12-08 World Technology Evaluation Center, Inc. – PA	$0	$0
12-4-047	6-11 CORD, Inc. – TX	$0	$0
12-4-048	6-11 Institute for Advanced Study – NY	$0	$0
12-4-049	9-11 Museum of Science and Industry, Inc. – FL	$0	$0
12-4-050	9-11 KQED, Inc. – CA	$0	$0
12-4-057	9-11AUI Associated Universities, Inc. – DC	$0	$0
	Total:	**$179,779**	**$179,779**

Other Federal Reports

Report Number	Subject	Questioned Costs	Unsupported Costs
12-5-002	9-10 Institute for Defense Analyses – VA	$224	
12-5-025	6-11 St. Joseph's College – ME	$188	$188
12-5-031	5-11 Augsburg College – MN	$424	$0
12-5-033	6-11 Howard University – DC	$1,268	$1,000
12-5-048	6-11 Clark Atlanta University – GA	$9,756	$0
	Total:	**$11,860**	**$1,188**

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 15 reports remaining that met this condition. The status of recommendations that involve internal NSF management is described on page 37.

Report Number	Subject	Questioned Costs	Unsupported Costs	Better Use of Funds
05-1-005	RPSC Costs Claimed FY2000 to 2002	$12,334,824	$0	$0
06-1-023	RPSC 2003/2004 Raytheon Polar Services	$6,860,500	$0	$0
07-1-003	Triumph Tech, Inc.	$80,740	$1,192	$0
07-1-019	ABT Associates	$22,716	$0	$0
09-1-011	Wisconsin Ice Core Drilling Services	$2,475,308	$27,308	$0
09-1-014	University of Michigan	$1,604,713	$1,418,889	$0
09-5-048	8-07 College of the Mainland – TX[32]	$110,629	$0	$0
10-1-012	COL OOI Proposed Budget	$0	$0	$88,118,848
10-1-014	JOI 20 Month Incurred Cost	$392,309	$324,500	$0
10-1-015	COL 4 Month Incurred Cost	$195,937	$80,000	$0
11-1-001	REVISED ATST Price Proposal	$0	$0	$62,338,903
11-1-011	NCCU Internal Control Review for North Carolina Central University	$351,340	$268,628	$0
11-1-012	Trustees of Boston University	$412,400	$47,486	$0
11-1-021	NEON National Ecological Observatory Network	$0	$0	$75,780,354
11-5-154	6-10 University of Illinois	$57,350	$57,350	$0
	Total:	**$24,898,766**	**$2,225,353**	**$226,238,105**

32. This report was on hold at the request of OIG.

INVESTIGATIONS DATA
(October 1, 2011 – March 31, 2012)

Civil/Criminal Investigative Activities

Referrals to Prosecutors	6
Criminal Convictions/Pleas	4
Arrests	0
Civil Settlements	2
Indictments/Information	2
Investigative Recoveries	$1,397,041.51

Administrative Investigative Activities

Referrals to NSF Management for Action	18
Research Misconduct Findings	7
Debarments	8
Administrative Actions	69
Certifications and Assurances Received[33]	0

Investigative Case Statistics

	Preliminary	Civil/Criminal	Administrative
Active at Beginning of Period	62	90	93
Opened	96	23	45
Closed	04	14	35
Active at End of Period	54	99	103

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	38
Requests Processed	38
Appeals Received	5
Appeals Upheld	5

Response time ranged between 5 days and 20 days, with the median around 16 days and the average around 15 days.

33. 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.

PEER Reviews
October 1, 2011 – March 31, 2012

Audit organizations that perform audits and attestation engagements in accordance with the Controller General's Government Audits Standards (GAS) must have external peer reviews every three years by independent reviewers. During this reporting period the NSF OIG completed a peer review of the Special Inspector General for Afghanistan Reconstruction (SIGAR) Office of Audit for the year ending September 30, 2011; the system report contained no recommendations. Peer reviews focus on quality control, which includes organizational structure and policies and procedures that help ensure compliance with GAS. A copy of the NSF OIG peer review report is available on the SIGAR website.[34]

In addition, the Corporation for National Community Service (CNCS) completed a peer review of the NSF OIG Office of Audit for the year ending September 30, 2011; the system report contained no recommendations.

In accordance with peer review guidelines, we have provided copies of the CNCS peer review report to the Director of NSF, the chairs of the National Science Board and its Audit and Oversight Committee, and the chairs of the Councils of Inspectors General on Integrity and Efficiency and its Audit Committee. We have also posted a copy of the final peer review report on our OIG website.[35]

34. The SIGAR Office of Audit peer review is at: *http://www.sigar.mil/pdf/peerreview/2012-03-26-system-review-rpt.pdf*.
35. The NSF OIG Office of Audit peer review report is at: *http://www.nsf.gov/oig/2012auditpeerreview.pdf*.

About the Cover...

Photograph entitled “Sand Waves” by Investigative Scientist, Scott J. Moore.

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