NSF

National Science Foundation

SEMIANNUAL REPORT TO THE CONGRESS

March 2006

Office of the Inspector General

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 $5 billion per year in a portfolio of approximately 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 receive 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.

About the Cover...

Spattering or glowing vents inside Pu`u `O`o, Kilauea's active vent. Kilauea is the youngest and southeastern-most volcano on the big island of Hawaii. (Photo by Tom Pfeiffer / www.decadevolcano.net/VolcanoDiscovery.com; selected by Ken Straka)

Table of Contents

From the Inspector General

Letter from the IG…

This report highlights the activities of the National Science Foundation (NSF) Office of Inspector General (OIG) for the six months ending March 31, 2006. During this period, our office issued 17 audit reports and reviews that identified $2,671,061 in questioned costs and $940,046 of promised cost-shared funds at risk of not being contributed. In addition, we closed 43 civil/criminal cases, 30 administrative cases, and recovered $2,331,397 as a result of our investigative efforts.

Although the amount of questioned costs is one important measure of an OIG's effectiveness, it is not the sole objective of the audits we conduct of NSF grant funds. Over the past few years we have changed the focus of our audits to look more closely at the financial internal controls of the research institutions funded by NSF and to assess their effectiveness. We have learned that to simply question the allowability of costs claimed for an award is not enough to assure appropriate accountability for federal dollars. Our goal is to prevent fraud, waste and abuse by helping institutions to recognize weak internal controls and to strengthen them so that future funding will be better managed.

I again reaffirm our support for amending the Program Fraud Civil Remedies Act of 1986 (PFCRA) to include NSF. PFCRA enables designated agencies to handle allegations of program fraud, when the claims are less than $150,000, without the assistance of the Department of Justice. In March, the National Science Board sent a letter to Congress formally requesting that PFCRA be amended to include the National Science Foundation. I urge Congress to consider that request.

On page 18 of this report, we discuss some of our recent audit work involving the reporting and dissemination of NSF research results. Effective communication of the outcomes of scientific research serves many purposes, including maximizing the impact of NSF's investments in research, affording the agency appropriate recognition as a sponsor of cutting-edge science and technology, and facilitating access to scientific results by researchers in related fields. In February, we issued a report that examined NSF's dissemination practices and found that NSF relies heavily on the individual researchers to publicize their own results. We believe that the agency could, and should, do more. For example, other federal grant-making agencies make citations in journals resulting from their research available to the public, and often go further by providing free and convenient access to the final reports or published articles. In an era in which technology allows the instantaneous and widespread communication of scientific results, NSF is not taking a good opportunity to provide a useful service to the science community. A follow-up audit report exploring other issues related to dissemination will be issued within the next few months.

Finally, in May 2006, the terms of eight key members of the National Science Board will expire. Dr. Warren Washington, Dr. Diana Natalicio, Dr. Mark Wrighton, Dr. Nina Federoff, Dr. Michael Rossman, Dr. Jane Lubchenco, Dr. Daniel Simberloff, and Dr. John White will be leaving the Board. The six-year terms of these members coincide with my tenure as Inspector General and I am very pleased to have worked with them and to have observed first-hand their contributions to NSF and to the scientific and engineering research, and education enterprises. In particular, I want to express my deep appreciation to Dr. Washington, Chairman of the National Science Board, and Dr. Wrighton, Chairman of the Audit & Oversight Committee, for their interest and support of the OIG over the past four years.

Christine C. Boesz, Dr.P.H.
Inspector General
May 8, 2006

Executive Summary

- The audit of NSF's FY 2005 financial statements resulted in an unqualified opinion. However, in its Report on Internal Controls Over Financial Reporting, the auditors identified two reportable conditions relating to NSF's post-award administration and contract monitoring. In February, NSF submitted its proposed action plans to address six recommendations related to these reportable conditions. The proposed corrective actions were reasonable and generally responsive to all but two recommendations. The OIG and the independent auditor will continue working with NSF management to ensure these issues are resolved in a timely manner. **(Page 13)**

- The OIG contracted with the Defense Contract Audit Agency (DCAA), to complete a series of audits of the financial reports and practices of Raytheon Polar Services Company (RPSC) which provides operations and maintenance support to NSF's United States Antarctic Program (USAP). Most recently, the OIG and DCAA completed three more reviews that assessed RPSC's compliance with its federally disclosed cost accounting practices and the adequacy of its financial business systems and controls. The auditors found that RPSC improperly claimed $ 21.1 million of indirect costs as direct costs for the contract period 2000 to 2002 contrary to its disclosure statement. As a result, the Department of Defense (DOD), which is responsible for overseeing RTSC's compliance with its CASB disclosure statement on all federal contracts, issued an initial determination of non-compliance to RTSC for RPSC, its subsidiary. **(Page 14)**

- In February 2006, OIG issued an audit report on NSF's policies and practices for publicly disseminating the results of NSF-funded research, including the information that it receives in the final project reports. Although NSF provides the public with information about proposed research selected for funding, the auditors found that it does little to publicize information about the results of that research. While NSF collects citations of journal articles resulting from its funded research, it is the only federal agency that does not provide this information to the public. The audit report recommends that NSF make the publication citations more widely available by including them in the award abstracts database already publicly available through its website. **(Page 18)**

- A scientist who owned a small business, was sentenced to 12 months home confinement, five years probation, and fined $20,000 for Mail Fraud and Tax Evasion charges related to grants and contracts received from SBIR awards made by NSF and other agencies. The scientist previously pled guilty to sending SBIR Phase II progress reports to NSF that included research previously conducted by the company under an Air Force SBIR Phase II contract, and failing to pay income tax on grant funds he converted to his personal use. He paid $288,414 for penalties and interest related to tax evasion, and the court prohibited him from participating in federal grants, contracts, or employment for five years. In addition, the scientist paid $1,111,586 to the government to settle a False Claims Act case based on investigative findings that the scientist submitted false reports to various agencies related to SBIR awards. **(Page 27)**

- A university paid $2.5 million and entered into a settlement agreement with the federal government to resolve civil allegations that it submitted false claims on approximately 500 federal grants awarded from 1997 through 2004. The National Science Foundation's share of the settlement was $345,808. The grants were made by numerous federal agencies for work to be performed at two of the university's specialized service facilities (SSFs). A multi-agency investigation concluded that the university submitted grant applications containing incorrect or overstated information about anticipated expenses in the SSFs, because the university did not use a proper basis for setting and regularly updating its billing rate structure, as required by OMB Circular A-21. As part of the settlement, the university also signed a compliance agreement with the federal government that will require it to make significant changes in its grant administration program. **(Page 27)**

- An OIG investigation concluded that a PI plagiarized text and figures from multiple source documents into two SBIR Phase I proposals he submitted to NSF. We recommended NSF send the PI a letter of reprimand informing him that NSF has made a finding of research misconduct against him, and require that when proposals are submitted by the PI, or on his behalf, to NSF, he be required to submit a certification to OIG for 3 years that, to the best of his knowledge, they contain nothing that violates NSF's research misconduct regulation. **(Page 32)**

- The 2005 OIG Performance Report describes progress in the achievement of our three goals: 1) to promote NSF efficiency and effectiveness; 2) safeguard the integrity of NSF programs and resources; and 3) utilize OIG resources effectively and efficiently. **(Page 37)**

Legal Review

The Inspector General Act of 1978, as amended, mandates that our office monitor and review legislative and regulatory proposals for their impact on the Office of Inspector General (OIG) and the National Science Foundation's (NSF) programs and operations. We perform these tasks for the purpose of providing leadership in activities that are designed to promote economy, effectiveness, efficiency, and the prevention of fraud, waste, abuse and mismanagement. We also keep Congress and NSF management informed of problems and monitor legal issues that have a broad effect on the Inspector General community. During this reporting period, we reviewed 42 bills that either affected NSF, OIG, or both. The following legislation merits discussion in this section.

Program Fraud Civil Remedies Act of 1986 (PFCRA) (31 U.S.C. 3801-3812)

A legislative priority that we support is amending PFCRA to include NSF and the 26 other agencies that are currently excluded from participation under the Act's enforcement provisions. The amendment would enable NSF and the other agencies to fully perform their statutory mission to prevent fraud, waste and abuse by availing themselves of the enforcement capabilities contained within the Act. We have raised the issue of NSF's inclusion under the PFCRA legislation in several prior Semiannual Reports.

PFCRA sets forth administrative procedures that address allegations of program fraud when the claims are less than $150,000.00.   Currently, the executive departments, military departments, establishments, as defined under the Inspector General Act of 1978, and the United States Postal Service, are the only agencies permitted to proceed under PFCRA. NSF and the other agencies with Inspectors Generals appointed by agency heads are not included.

We believe that using the enforcement provisions of PFCRA will enhance NSF and other agency recoveries in instances of fraud that fall below PFCRA's jurisdictional threshold of $150,000.00.   In short, including NSF and the other agencies under PFCRA will further the OIG community's statutory mission to deter fraud, waste and abuse. In a March

HIGHLIGHTS

2006 letter to Congress, the National Science Board made a formal request "that Congress amend the PFCRA to include NSF" and afford the agency the investigative resolution authorities provided other federal agencies.

Outreach

NSF OIG continues to reach out to the national and international research communities, other federal agencies and OIGs, and NSF staff in an effort to provide information and raise awareness regarding our mission and the need for effective collaboration. During this semiannual period, NSF OIG worked to communicate to each audience how our mission contributes to the overall success of the research community. Our message remains clear: research requires *money*, and those who spend the taxpayers' money must be *accountable*. Compliance systems are a practical way to ensure accountability and must be created and nurtured in institutions throughout the research community, not just to achieve technical compliance but also as a way to enhance the research enterprise through better management and administration.

During this semiannual period, our message was strengthened by the participation of Assistant United States Attorney, Paula Newett, during our presentation at NSF's Regional Grants Conference in Boulder, Colorado, in March. Ms. Newett is the Deputy Chief (Acting), Civil Division, United States Attorney's Office, Eastern District of Virginia (EDVA). She is the Head of the Affirmative Civil Enforcement (ACE) Unit, which prosecutes a broad array of civil frauds in health care, grants, and procurement. She explained that ACE had recovered over $200,000,000 from federal contractors and grantees between 2003 and 2005. Her comments addressed the importance of including integrity agreements[1] as part of settlement agreements. She explained that integrity agreements are drafted by an OIG in conjunction with the United States Attorney's Office, but once approved by all parties, are monitored by the affected agencies. Ms. Newett explained that because of NSF's location within EDVA's jurisdiction, her office had jurisdiction over NSF grant recipients and that she therefore worked closely with NSF OIG investigators. Her presentation made clear the accountability requirements for organizations and individuals receiving federal grants.

Working with the Research Community

IG Delivers Keynote Address at Symposia Held in China. Professor Zhang Cunhao, Chairman of the National Natural Science Foundation of China (NSFC) invited the Inspector General to deliver keynote presentations about the importance of compliance plans in strengthening internal controls on research and business functions, at three symposia held in China during October 2005. At the same sessions Dr. Ken Busch, Investigative Scientist presented five case

---

[1] An integrity agreement includes a set of compliance measures committed to by a grant recipient organization to ensure the integrity of all claims for reimbursement made to the federal government.

studies involving misconduct in research investigations for his audience to consider. The purpose of the symposia was to educate university-based research faculty and discuss best practices for handling issues of research misconduct. Professor Zhang noted China's appreciation for the excellent collaboration between NSF OIG and the NSFC over the past five years and expressed his desire that the partnership continue.

OIG Staff Participate in Conferences. Members of the OIG staff were invited to attend and present at a wide range of workshops, conferences, meetings, and other events conducted by institutions and associations of research professionals. At each event, OIG staff not only presented detailed, practical information about our work, but also framed the subject matter in the context of the larger goal of ensuring the integrity of the research endeavor. We fielded questions from our audiences on a wide range of topics and followed up with individuals to ensure complete and accurate information was provided. It remains the goal of our outreach presentations to assist individuals and organizations within the national and international research communities in their efforts both to create systems to identify, resolve, and prevent recurrence of misconduct or mismanagement, and to foster an environment of ethical conduct in research, education and grant administration.

During this semiannual period, OIG staff participated in events with the Society for Research Administrators International; the National Council of University Research Administrators; the Federal Audit Executive Council; the Science Foundation of Ireland; the American Chemical Society; the Washington Academy of Sciences; the University Corporation for Atmospheric Research; the Federal Law Enforcement Training Center / Department of Homeland Security; and the Inspector General Academy. In each of these forums, our staff engaged a broad spectrum of the community involved with provision, use, administration, and oversight of federal grant funds.

OIG Staff Speak at Universities. Members of the NSF OIG have received numerous invitations to provide training to, and answer questions from, university personnel. University officers and individuals involved in applying for and administering NSF awards, individuals involved in performing supported research, and individuals involved in conducting university-level inquiries into allegations of research misconduct, are among those who have received presentations from OIG personnel. During this semiannual period, we visited seven universities or university systems for such presentations. At each, the participants demonstrated great interest in the presentations and engaged OIG staff in constructive questions and answers to refine their understanding of the subjects being discussed.

International Auditor Exchange. An OIG audit manager spent three months working in the United Kingdom (UK) for the Research Council's Internal Audit Service (RCIAS). The office is responsible for auditing the operations of the seven UK Research Councils that fund approximately $4 billion annually in

government research grants to educational institutions. The purpose of the exchange was to compare the respective approaches to auditing employed by the two countries, and learn the techniques and methodologies used by the other to audit grant funds and ensure proper management and accountability. Both the OIG and RCIAS found the exchange enlightening and beneficial.

Working with the Federal Community

NSF OIG investigators reach out to their counterparts in the IG community on a regular basis. During this semiannual period, we frequently worked with other federal agencies and Offices of Inspector General on a host of professional matters. These agencies include the Departments of Agriculture, Energy, Justice, Office of Management and Budget, Government Accountability Office, and Social Security Administration. These professional interactions were conducted both on an office-to-office level to address requests for particular assistance, and also within the context of the Council of Counsels to Inspectors General (CCIG) and committees of the President's Council on Integrity and Efficiency /Executive Council on Integrity and Efficiency (PCIE/ECIE). NSF OIG continues to actively participate in the PCIE/ECIE Investigations Committee, the ECIE Investigative peer review effort, the Misconduct in Research Working Group (chaired by the NSF IG), the PCIE/ECIE Inspections and Evaluation Committee, and the PCIE GPRA Roundtable and the PCIE/ECIE Information Technology Roundtable.

Deputy U.S. Attorney General Nominee Addresses the 2005 OIG Grant Fraud Training. Deputy U.S. Attorney General Nominee Paul J. McNulty was the keynote speaker during this year's Grant Fraud Workshop organized by our office. Subsequent to the workshop, he was confirmed as Deputy U.S. Attorney General. Mr. McNulty acknowledged the significant challenges facing federal agencies having responsibility for ensuring that the $400+ billion of taxpayers' money, awarded in the form of grants, is expended in accordance with the law.

Paul McNulty (right) with Matt Quinn, Investigations and Dr. Boesz at OIG's Grant Fraud Workshop.

He discussed his efforts to address the growing problem of procurement fraud. In his former capacity as the U.S. Attorney for the Eastern District of Virginia, Mr. McNulty spearheaded the Procurement Fraud Working Group, which consists of representatives from OIGs and others in the federal law enforcement community. The investigators meet quarterly to share investigative information and discuss their common objective: identifying those who intentionally misuse government funds and violate the trust placed in them.

Mr. McNulty emphasized his commitment and active partnership with the OIG community in pursuing and bringing to justice those individuals and organizations that deliberately violate the public's trust and the criminal and civil laws of the United States. He specifically

acknowledged NSF-OIG's efforts in bringing the OIG community together to provide relevant training and to discuss best practices and lessons learned pertaining to grant fraud. This year's Grant Fraud Workshop resulted in the largest turnout to date, with a total of 125 attendees, representing 31 different offices. Among those attending were 75 investigators, 20 auditors, 20 attorneys, and 10 other professionals.

Working with NSF

OIG/NSF Liaison Program. NSF OIG has built on its previous success in establishing and maintaining effective communication and professional relationships with the individual directorates and offices within NSF. During this semiannual period, our liaison teams (generally one investigator and one auditor) have served as a valuable conduit of information between our offices in the course of approximately 50 liaison events.

This year, we again conducted a survey of Assistant Directors, Division Directors, and other staff principals, to assess the efficacy of the OIG Liaison Program and the quality of communications between the agency and OIG. We received replies from approximately 75% of those offered the survey. We are pleased to report that all of the NSF respondents indicated they were comfortable communicating with their OIG liaisons and understood the OIG role and how it supports the NSF mission. OIG remains committed to building and maintaining strong and open lines of communication with the agency. We will use the results of this year's survey to identify opportunities to further improve those communications.

Program Managers' Seminar Briefings. OIG staff continue to participate as Resource Personnel in the NSF Program Managers' Seminar, which provides new NSF staff with detailed information about the Foundation and its activities. During each seminar, the OIG Resource Person makes a presentation about our office to the new Program Managers. These sessions have been successful in fostering personal and professional relationships between OIG and agency staff, as well as in educating NSF personnel on the mission and responsibilities of NSF OIG.

Conflict-of-Interests Briefings. The NSF Designated Agency Ethics Official continues to offer OIG staff an opportunity to address NSF staff at mandatory conflict-of-interest briefings which are conducted approximately twice per month. This generous offer provides OIG with a forum in which we can communicate our mission and responsibilities, our ongoing liaison program with NSF, and the manner by which employees can bring matters to our attention.

Certifications

Office of Audit Receives A Clean External Peer Review Report. In accordance with Government Auditing Standards, we are required to have an external quality control review conducted of our audit operations and quality control system at least once every three years. The purpose of the peer review is to determine whether the audit organization has a quality control system in place to provide reasonable assurance that it is following all applicable auditing standards. During this reporting period, the Board of Governors of the Federal Reserve System (FRS) OIG conducted an external quality control review of our audit operations. We are pleased to report that FRS-OIG found that our audit quality control system provides reasonable assurance of conforming to professional auditing standards in the conduct of our audits. In the report, FRS-OIG made four suggestions regarding our internal quality assurance program and enhancing our internal audit policies and procedures.

NSF OIG Recertifies Its Compliance with Whistleblower Act. The NSF OIG has been recertified by the Office of Special Counsel as meeting its statutory obligation to inform its workforce about the rights and remedies available under the Whistleblower Protection Act (WPA) and related civil service laws. In 1994, Congress enacted 5 U.S.C. §2302(c) to address concerns about ignorance among federal workers of their right to be free from prohibited personnel practices, especially retaliation for whistleblowing. That provision charges "the head of each agency" with responsibility for "ensuring (in consultation with the Office of Special Counsel) that agency employees are informed of the rights and remedies available to them" under the prohibited personnel practice and whistleblower retaliation protection provisions of Title 5.

Audits *&* Reviews

Significant Reports

Financial Statement Audit and Review of Information Systems

The federal government has made the improvement of financial management a high priority for many years. The President's Management Agenda identified improved financial management as one of its top five government-wide initiatives, with the aim of producing accurate and timely information to support decisions affecting operations, budget, and policy.

The Chief Financial Officer's (CFO) Act of 1990, as amended, requires federal agencies to prepare annual financial statements and the agency OIG, or an independent public accounting firm selected by the OIG, to audit these statements. The Federal Information Security Management Act (FISMA) requires an independent evaluation of the agencies' information security controls. During this reporting period, we completed these two required audits for fiscal year (FY) 2005.

Fiscal Year 2005 Independent Auditors Issue Unqualified Opinion, Continue to Cite Need for Improved Award Oversight

Under a contract with the OIG, KPMG LLP conducted an audit of NSF's financial statements for FY 2005 and issued another unqualified opinion to NSF. However, in its Report on Internal Controls Over Financial Reporting, KPMG identified two reportable conditions relating to NSF's post-award administration and contract monitoring.

At any point in time, NSF administers some 35,000 awards amounting to approximately $23 billion in the agency's total portfolio to support basic science and engineering research and education. Assessing scientific progress and ensuring effective financial and administrative oversight of these funds are critical elements in managing NSF's award programs. In FY 2005, NSF made progress in addressing prior post-award monitoring recommendations by implementing a number of new procedures. However, the auditors reported that additional improvements are still needed. Specifically KPMG rec-

ommended that NSF: (1) establish and implement a detailed strategic plan to monitor all institutions identified as having high risk awards; (2) clearly state how site visit selections are to be determined; and (3) ensure that both objective and subjective factors are applied during the risk assessment process to capture all high risk awards.

KPMG also identified problems with NSF's process of monitoring the financial performance of its largest contractors who receive advance payments. The auditors reported that NSF does not adequately review quarterly expenditure reports submitted by contractors receiving advance payments for 1) accuracy and propriety, 2) correct computations, and 3) authorized purpose under the contractual agreement. In addition, NSF's process for reviewing and approving expenditures does not include periodic testing. Without adequately performing such procedures, substantial misstatements and unauthorized expenditures may go undetected.

In February, NSF submitted its proposed action plans to address the recommendations related to these reportable conditions. The proposed corrective actions were reasonable and generally responsive to all but two recommendations. The OIG and the independent auditor will continue working with NSF management to ensure these issues are resolved in a timely manner.

FY 2005 FISMA Information Systems Reports

The FY 2005 *Federal Information Security Management Act (FISMA) Independent Evaluation Report and the FY 2005 FISMA Evaluation Summary Report* state that NSF has an established information security program and has been proactive in reviewing security controls and identifying areas to strengthen this program. The report identified eight areas in which NSF can further improve its information system security program. Management agreed with the findings and recommendations in these reports and indicated that, in many instances, it has already initiated corrective action.

Audits of Raytheon Polar Services Company Find Compliance and Control Problems

At NSF's request, the OIG contracted with the Defense Contract Audit Agency (DCAA), to complete a series of audits of the financial reports and practices of Raytheon Polar Services Company (RPSC). RPSC provides science, operations and maintenance support to sustain year round research in NSF's United States Antarctic Program (USAP). In the March 2005 Semiannual[2],we reported that the auditors questioned $33.4 million, or 9.2 percent, of the $363 million costs claimed by RPSC for the three-year period ended December 31, 2002. During this semiannual period, the OIG and DCAA completed three more reviews that assessed RPSC's compliance with its federally disclosed

---

[2] March 2005 Semiannual Report, p.15.

cost accounting practices and the adequacy of its financial business systems and controls to accurately account for and report its indirect and other direct costs in accordance with the NSF contract requirements.

The NSF USAP contract is of such a magnitude that the contractor must submit a written Cost Accounting Standards Board (CASB) disclosure statement to the government, which identifies the accounting policies and practices it will consistently follow for classifying costs as direct or indirect. RPSC, a subsidiary of the parent company, Raytheon Technical Services Company (RTSC), operated under RTSC's CASB disclosure statement between 2000 and 2004. The auditors found that RPSC improperly claimed $ 21.1 million of indirect costs as direct costs for the contract period 2000 to 2002 contrary to its disclosure statement. As a result, the Department of Defense (DOD), which is responsible for overseeing RTSC's compliance with its CASB disclosure statement on all federal contracts, issued an initial determination of non-compliance to RTSC for RPSC, its subsidiary.

In addition, as of January 1, 2005, RPSC was removed from RTSC's disclosure statement, and was therefore operating without any disclosed practices, raising further questions as to the basis on which RPSC is billing NSF's USAP contract. RTSC only recently submitted a draft CASB disclosure statement to the government specifically for RPSC. Until RTSC makes an official disclosure statement submission, the basis on which RPSC is billing NSF's USAP contract remains unclear.

A second audit found that RPSC did not: 1) have adequate controls to properly identify allowable and allocable NSF costs; 2) perform internal compliance oversight reviews; and 3) provide staff with adequate training to properly classify costs for the NSF contract. These weaknesses, coupled with the lack of compliance with RTSC's disclosed accounting practices, caused RPSC to claim $33.4 million in questionable indirect and other direct costs from 2000 to 2002 on its NSF contract. The third audit found that RPSC's accounting records did not reconcile with costs recorded in two major business systems that NSF uses for financial and project management of the USAP. As a result, RPSC overcharged NSF approximately $206,000 for indirect costs and may be relying on inaccurate project cost information for project management decisions.

The audit report recommended that NSF coordinate with DCAA and DOD to have RPSC correct its cost accounting practices, recover all questioned costs plus interest, and audit future quarterly expenditure reports to identify and withhold payments to RPSC for incorrectly claimed indirect costs. It also recommended that NSF ensure that RPSC establish adequate policies and procedures, including an internal compliance oversight program and an employee-training program to ensure compliance with the NSF contract require-

Emperor penguins in Anarctica line up to dive for food as scientists study the birds for information pertinent to human physiology.

ments. Finally, the report recommended that NSF ensure that RPSC reconciles the costs recorded in the various accounting and project management systems to its official accounting records.

In the next semiannual period, we expect to provide NSF with the results of the audit of claimed costs for 2003 and 2004. In addition, we will report on assessments of controls over RPSC's billing process, New Zealand operations, and a major subcontractor.

Major Internal Control Weaknesses Found at Three Academic Institutions

In three separate audits, two school districts and a university were found to have serious deficiencies in the ability to track and report expenses claimed on NSF awards. All three institutions lacked adequate systems to track an aggregate total of $42 million of claimed cost sharing. In addition, weak controls over accounting for salaries, wages, and associated fringe benefits resulted in nearly $1.4 million of questioned costs.

Two School Districts Share Similar Control Deficiencies

The OIG audited cost reports submitted by Detroit City School District (DCSD) and San Francisco Unified School District (SFUSD), as part of our ongoing review of awardees under NSF's Urban Systemic Initiative (USI) and Urban Systemic Program (USP). Consistent with prior USI/USP audit findings, grant accounting control deficiencies were identified at these school districts in the areas of salaries, wages, fringe benefits, indirect costs and cost sharing.

The audits found that both school districts had a number of material control weaknesses that allowed the submission of inaccurate cost reports to NSF. Each district lacked the required employee certifications and personnel activity reports to support the claim that $5.7 million in salary and fringe benefit costs was incurred and benefited NSF awards. In addition, both districts lacked an efficient system to properly identify and account for a total of $29.6 million in cost sharing attributed to their NSF awards. Neither district had adequate policies and procedures for determining allowable indirect costs for their NSF grants. Finally, DCSD's accounting system did not separately track participant support costs incurred under the award, and SFUSD did not timely reconcile claimed costs with its accounting records to ensure the validity of its reports of claimed costs to NSF.

As a result, the auditors questioned approximately $1.4 million of the $10.9 million DCSD claimed as costs to NSF, including $1.2 million of unallowable and unbudgeted salaries, wages and fringe benefits, and $188,053 of costs unrelated to the NSF award. For SFUSD, the auditors identified $712,620 in questioned costs of the $9.2 million SFUSD claimed to NSF. Among the items questioned were $427,844 of costs that were not recorded in SFUSD's

accounting records, $215,445 for overcharges of indirect costs, and $69,315 of salaries and associated fringe benefit costs that should have been charged to SFUSD's general fund.

Both DCSD and SFUSD agreed with most of the audit report findings and indicated they are working on corrective actions. The audit reports were forwarded to NSF's Division of Institution and Award Support for audit resolution.

University Has Systemic Weaknesses Affecting Oversight of NSF Grant Funds

An audit of Howard University found that the University lacks a system of internal controls that provides reasonable assurance that NSF grant funds were being used for the purpose they were provided, or spent for allowable expenses. While the University has made some progress in improving its grant operations, it needs to do more to correct longstanding systemic weaknesses that were also identified in prior internal and external audits. These weaknesses have persisted because Howard University did not have comprehensive financial management policies, procedures, and controls to effectively manage, account for, and monitor NSF grant funds. As of June 30, 2004, Howard had 35 active NSF grants worth approximately $18.8 million.

The audit identified significant weaknesses in the University's internal controls over cost sharing, funds passed-through to subawardees, faculty salaries, and trainee stipends for the five NSF grants audited, which totaled $10 million. The auditors could not determine whether the University actually provided $12.3 million of cost sharing claimed because the University commingled the funds with other accounts and was unable to demonstrate that the costs actually supported NSF projects. The University also lacked comprehensive sub-award agreements that would have obligated its subrecipients to provide $5.4 million of cost sharing and restricted $2.3 million of funds to participant and/or trainee support. The auditors also questioned FY 2004 faculty salary costs of $91,877 or 52 percent of the total faculty salaries claimed on the five audited awards because the University charged NSF for duplicate, unauthorized, and unsupported salaries. Given the pervasive nature of these weaknesses, we believe that other NSF funds amounting to $8.8 million are at similar risk.

The report recommended that Howard University implement a program for monitoring and overseeing its grant management processes that includes improved controls and accountability over NSF cost sharing obligations, sub-awards, and faculty salary charges. Howard should also obtain an independent evaluation to verify that timely and appropriate corrective actions are implemented to address all audit report recommendations. If the evaluation continues to disclose grant management problems, we recommended that NSF withhold additional funding until appropriate corrective actions are implemented. Generally, Howard University agreed with the audit recommendations and indicated that they have initiated corrective actions. We have forwarded the audit report to NSF's Division of Institution and Award Support for

development of an appropriate corrective action plan in conjunction with the University and the cognizant audit agency, the Department of Education.

Improvements Needed in Reporting and Disseminating Research Results

This semiannual period, we completed the second in a series of audits aimed at assessing NSF's performance in reporting and disseminating the results of the research it funds. Effective communication of the results of scientific research advances knowledge, stimulates new research ideas, and helps train future scientists, engineers, and educators. Additionally, communicating research results assures taxpayers that they have received value for their investment and helps to increase the public's understanding and appreciation of science and technology.

In February 2006, OIG issued an audit report on NSF's policies and practices for publicly disseminating the results of NSF-funded research, including the information that it receives in the final project reports. A related audit is now underway examining whether NSF's dissemination policies and practices meet the needs of the research community and other NSF constituents and taxpayers. And NSF is taking corrective actions as a result of an audit report issued last year on NSF's performance in collecting research results through project reports. The status of each audit is discussed below.

Public Access to Research Results Should Be Expanded

Although NSF provides the public with information about *proposed* research selected for funding, it does little to publicize information about the *results* of that research. NSF historically has relied on the researchers to disseminate information about their NSF-funded work through peer-reviewed publications and professional conferences. However, these methods of communication may not reach other interested parties outside the scientific research community, such as students and educators.

In addition, NSF's dissemination policies and activities are much more limited than those of other federal agencies funding basic research, including the National Aeronautics Space Administration, the National Institutes of Health, and the Departments of Energy, Agriculture, and Defense. While NSF collects citations of journal articles resulting from its funded research, NSF is the only agency that does not provide this information to the public.

The audit report recommends that NSF make the publication citations more widely available by including them in the award abstracts database already publicly available through its website. Interested parties will be able to determine what publications resulted from NSF's investment in research. NSF agreed with the recommendation and is currently determining the actions necessary for implementation.

Audit To Further Examine NSF's Dissemination Policies

We are continuing to explore issues surrounding NSF's policies for disseminating the results of its research. In particular, we are evaluating whether NSF should provide the public with direct access to other types of information containing research results, including project reports, research summaries, and abstracts of published journal articles. We are also assessing whether interest exists among NSF's various stakeholders for making more information available about the results of individual research projects on the agency's website.

Update on Improvements in Project Reporting

An audit report issued last year stated that from 1999 to 2004, over 42 percent of the 108,000 required *annual* project reports due to NSF were never submitted, and 53 percent of the 43,000 *final* project reports were submitted, on average, 5 months late.[3] The report contained a series of recommendations to NSF on how it could improve responsibility and oversight to ensure the timely submission of these reports. In response to our audit recommendations, NSF initiated policy changes and is in the process of designing a more comprehensive project report tracking system that will calculate reporting milestones and notify principal investigators as deadlines approach. NSF expects to implement this new tracking system in fall 2006.

Challenges with Sunshine Act Compliance Persist

At the request of Congress, OIG conducts an annual review of the NSB's compliance with the Sunshine Act. During 2005, the National Science Board continued to encounter challenges in meeting each of the procedural requirements of the Act. The audit report indicates that the Board still lacks a structure and protocol for handling the many Sunshine Act issues that arise in the daily conduct of Board operations. Without this structure and protocol, the Board will continue to experience procedural inconsistencies such as inadequate documentation of votes to close meetings and failure to submit required reports.

In addition, the report discusses how the Board makes its decisions to close some of its meetings. The Sunshine Act presumes that meetings will be open to the public unless the Board plans to discuss a topic that may disclose material that falls under one of ten narrow exemptions. However, at the time the Board set its meeting agendas, it appears to have included open agenda items in its closed meetings. This occurred because the decision to include agenda items in open or closed sessions necessarily is made in advance of the actual meeting. Because the Board does not document the discussion,

---

[3] March 2005 Semiannual Report, p.16-17.

the auditors were unable to determine whether the Board properly applied the Sunshine Act's standard when it decided on closed meeting agenda items. Consequently, the public may not receive all the benefits of open government promised by the Sunshine Act.

Based on these findings, the report reiterates our previous recommendations that the Board develop, implement, and provide training to its members and staff on policies and procedures for addressing the procedural requirements of the Sunshine Act. In addition, it recommends that the Board develop, implement, and provide training on a process for documenting the reason for placing each agenda item in a closed meeting rather than an open meeting. The Board has generally agreed with our findings and is planning appropriate action.

Audit Resolution

NSF Secures Matching Contributions and Improved Controls at Two Foreign Institutions

Prior audits of awards to the United States-Mexico Foundation for Science in Mexico[4] and the Inter-American Institute for Global Change Research in Brazil[5] have resulted in the establishment of controls to improve accountability of federal grant funds at both foreign awardee institutions and NSF. Pursuant to the OIG audit recommendations, NSF has amended its grant agreements with both foreign grantees to include special award conditions to ensure financial and administrative integrity over its award funds. Also, NSF has conducted site visits to both awardee organizations to provide technical assistance to aid the awardees' understanding of NSF grant requirements and to verify corrective actions addressing the audit recommendations.

United States-Mexico Foundation for Science (USMFS)

Our audit of $11 million of awards made by NSF and three other federal agencies to establish an endowment fund for USMFS found that conditions for the funding stipulated by Congress were not included in the grant agreements. Consequently, USMSF did not obtain $5 million or 45 percent of matching contributions from Mexico, or implement adequate financial controls to account for and administer the US endowment. Pursuant to the audit recommendation, NSF amended the award agreement governing its $4 million share of endowment contributions to comply with the Congressionally-mandated requirements.

Also, as a result of the coordinated efforts of our office, the Office of Science and Technology Policy, and the OIGs of the three other federal funding agen-

---

[4] March 2005, Semiannual Report, p.17.

[5] September 2004, Semiannual Report, p.17

cies, USMFS has recently executed an agreement with the Mexican Government to obtain the remaining $5 million of matching endowment contributions. NSF recently conducted a site visit to ensure that USMSF has implemented adequate financial controls to account for and administer the US endowment funds. We are currently reviewing the site visit report.

Inter-American Institute for Global Change Research (IAI)

A prior audit of NSF awards worth over $16 million to IAI disclosed that NSF, on behalf of the United States, was funding a disproportionate share of the organization's total research costs, and that the organization had not properly monitored 14 subawards, valued at over $10 million. Following our audit recommendations, NSF has worked closely with IAI to establish a project management manual providing written subaward policies and procedures for administering and monitoring NSF research funds passed-through to other institutions. As a result of NSF's technical assistance and two on-site visits to IAI's offices in Brazil, the Institute is better able to manage its new NSF research grant for $10.4 million, awarded on September 30, 2005.

Furthermore, NSF has continued to work with IAI's governing body to promote and oversee its fundraising efforts. IAI's new Executive Director, hired in August 2005, has already undertaken positive steps in preparation for obtaining additional funds. He obtained a declaration of support from the Organization of American States and an agreement from the Brazilian Embassy to issue demarches on IAI's behalf for unpaid member contributions. The IAI Director is also continuing to develop fundraising strategies to increase the number of research projects involving global change in the Americas. We are awaiting receipt of the Director's final strategies, expected after a May 2006 Conference of the Parties, which are intended to guide IAI efforts of funding a greater proportion of the organization's total research costs with non-US funds.

Company Specializing in Science and Technology Content Agrees to Improve Accountability

Last year, we reported on our audit of ScienCentral, Inc. (SCI) and Center for Science in the Media, Inc. (CSMI)[6]. SCI, a for profit company, is closely related to CSMI, a non-profit company that conducts research and develops mass media approaches that bring science and technology news and information into mainstream communications. The audit found that SCI/CSMI did not have adequate financial management, cost sharing, or other systems to provide for segregation of key accounting duties, adequate documentation of award costs, cost segregation, or compliance with other award terms and conditions. In addition, CSMI did not have the required OMB Circular A-133 audits

---

[6] March 2005 Semiannual Report, pp.18-19.

for its fiscal years 2000 and 2001. The audit report questioned $921,489, or 34 percent of total claimed costs.

In response to the report's compliance and internal control recommendations, SCI stated that it: (1) implemented a new accounting system that allows segregation of grants by account, direct, indirect, and production cost pools and made other improvements to its internal controls; (2) hired an accounting firm to review its accounting and reporting systems, suggest improvements, and perform future OMB Circular A-133 audits; and (3) provided training to staff on all changes and new written procedures to ensure future compliance. NSF agreed with the awardees' corrective actions and sustained $517,973, or 56 percent, of the amount questioned in the audit.

Actions to Implement Visiting Personnel Recommendations Remain Incomplete

In September 2004, we reported on our audit of the costs associated with NSF's use of visiting personnel,[7] or "rotators," in place of permanent staff. While NSF has implemented new policies and procedures for documenting lost consulting income for which it reimburses the rotators, NSF has not completed implementing the remaining two recommendations. Although funding constraints have delayed NSF's plans for developing a program to automate its IPA salary and benefit computation process, it expects to conduct a requirements determination and develop a cost estimate for the system during this fiscal year. As recommended, NSF is currently developing an alternative methodology for calculating Visiting Scientists' salaries to prevent duplicate payments. NSF expects to have its new methodology implemented by July 2006.

---

[7] Visiting personnel are temporary professional staff appointed under the Intergovernmental Personnel Act (IPAs) or NSF's Visiting Scientists, Engineers, and Educators (VSEEs) program. The article on visiting personnel appeared in the September 2004 Semiannual Report at pages 14-15.

Work In Progress

Labor Effort at Universities

As stated in our last semiannual report,[8] OIG has undertaken an initiative to assess the adequacy of accounting and reporting processes for labor costs at a representative sample of NSF's top-funded institutions. Approximately one third of all NSF award funds to universities are for salary and wages, amounting to $1.3 billion annually. Recent legal actions involving overcharges of staff time amounting to millions of dollars at several major universities, including some funded by NSF, have raised public awareness of the potential for abuse in reporting labor efforts. As the first in this series of audits, we issued a draft report on the labor effort practices at the University of Pennsylvania in February 2006 and expect to issue the final report in the next semiannual reporting period. In addition, we plan to initiate similar audits at another five universities this summer.

A-133 Audit Reports

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, entities that expend $500,000 or more a year in federal awards are required to have 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 audits. OIG reviews these reports for any findings and questioned costs related to NSF awards, and to ensure that the reports themselves comply with the requirements of OMB Circular A-133.

During this reporting period, the A-133 audits of NSF grantees found compliance deficiencies and internal control weaknesses, resulting in nearly $1 million of questioned costs. The findings contained in A-133 reports help to identify potential risks to NSF awards and are useful to both the agency and OIG in planning site visits, post-award monitoring, and future audits. Our reviews also revealed problems with the quality and timeliness of the A-133 reports that were similar to findings identified in a Quality Control Review we completed during this reporting period. Because of the importance of A-133s in monitoring grantees, the OIG returns reports that are judged inadequate to the firms that prepared them.

Findings Related to NSF Awards

In this reporting period, we reviewed 89 audit reports covering NSF expenditures of $812 million from fiscal year 2002 through 2005. These reports revealed 182 instances in which grantees failed to comply with federal requirements, and

---

[8] September 2005 Semiannual Report, p.20

45 instances in which weaknesses in grantees' internal controls could lead to future violations. The auditors questioned a total of $868,337 of costs claimed by recipients of NSF awards. The most common violations were related to financial and award management and salaries and wages, as detailed in the table below:

Findings Related to NSF Awards by Category

Category of Finding	Type of Finding			
	Compliance	Internal Controls	Monetary	Total
Financial and Award Management	61	32		93
Salary/Wages	22	4	5	31
Other	20	5	3	28
Subawards	18			18
Procurement System	13		1	14
Equipment	11	1	1	13
Indirect Costs	9	1	2	12
Other Direct Costs	7		1	8
Travel	6		2	8
Cost-Sharing	4			4
Fringe Benefits	3		1	4
Consultant Services	3			3
Property Management System		2		2
Total	177	45	16	238

We also examined Management Letters accompanying the A-133 audit reports. Auditors use these letters to report 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 letters we examined disclosed a total of 96 deficiencies that could affect NSF awards, in areas such as salaries and wages, and financial management.

Findings Related to Quality and Timeliness

For 25 of the 89 audit reports we reviewed in which NSF was the cognizant or oversight agency, we found that 40 percent had been submitted late or the audit reporting package was incomplete. OMB Circular A-133 requires audits to be completed and reports submitted within the earlier of 30 days after receipt of the auditor's report(s), or nine months after the end of the audit period, unless a longer period is agreed to in advance by the cognizant or oversight agency

for audit. In each case, we informed the audited organization that the late submission of a complete reporting package could affect the organization's risk profile and suggested that all future A-133 audits be performed and submitted in a timely manner.

The A-133 reports we reviewed also revealed problems with audit quality. Auditors are required to follow OMB Circular A-133 guidelines to calculate dollar-value thresholds for classifying and selecting federal programs to recommend in the audit. However, the Federal Audit Clearinghouse (FAC) identified potential errors affecting 14 NSF awardees. The OIG reviewed each of the potential errors and contacted the respective auditors for explanations. In each case, the auditors either provided adequate explanations, or additional information to demonstrate compliance with the Circular, or the error did not affect the results of the audit. While some of the errors were clearly immaterial, the auditors generally acknowledged the errors allowing for improved compliance in future audits.

A-133 Audit Quality Control Review

During this reporting period, we completed a Quality Control Review (QCR) of an A-133 audit conducted by a public accounting firm at Michigan State University. This was one of 208 QCRs conducted as part of the *National Single Audit Quality Project,* a government-wide undertaking by the Inspector General community to assess and provide a baseline measurement of A-133 audit quality. The project began in November 2004, and a final report is expected late this year.

Our review found that the external auditor did not sufficiently document significant conclusions and judgments involving work performed or omitted as required by Government Auditing Standards. Specifically, there was inadequate justification to support the auditor's decision to exclude 5 of 14 compliance areas from the audit scope. Further, the auditor did not review the University's risk assessment process to ensure it met compliance requirements for managing major federal grant programs, one of five key components of an effective internal control system. Finally, the auditor did not clearly document the details of its work related to the schedule of federal expenditures including tests of labor, fringe benefits, procurement, and subrecipient costs.

Although the auditors did not agree with all of the eleven findings cited, they agreed to improve workpaper documentation to ensure compliance with Government Auditing Standards. We submitted the results of our review to the *National Single Audit Quality Project* management staff to be incorporated with those being reported government-wide. Given the importance of A 133 audit quality to NSF's post-award administration, our office will continue to be involved in overseeing and reporting on the results of this government-wide project.

[Blank Page]

Civil and Criminal Investigations

Scientist Sentenced for Mail Fraud and Tax Evasion, Pays $1.4 Million Settlement

Following a multi-agency investigation, a scientist, who was the owner of a small business in Massachusetts, was sentenced to 12 months home confinement, five years probation, and fined $20,000 for Mail Fraud and Tax Evasion charges related to grants and contracts that the scientist received from SBIR awards made by NSF, the National Aeronautics and Space Administration, the Department of the Air Force, the Department of Energy, and the Department of Agriculture. The scientist previously pled guilty to sending SBIR Phase II progress reports to NSF that included research previously conducted by the company under an Air Force SBIR Phase II contract, and failing to pay income tax on grant funds he converted to his personal use.[9] The scientist also paid $288,414 for penalties and interest related to tax evasion, and the court prohibited him from participating in federal grants, contracts, or employment for five years.

In addition, the scientist paid $1,111,586 to the government to settle a False Claims Act case based on investigative findings that the scientist submitted false reports to various agencies related to SBIR awards.

Based on our recommendation, NSF had suspended the scientist after he pled guilty.[10] After the sentencing we recommended that NSF debar the scientist and his company. NSF's response to this recommendation is pending.

University Pays $2.5 Million to Settle Investigation of Mischarges to Federal Awards

A New England university entered into a settlement agreement with the federal government to resolve civil allegations that the university violated the False Claims Act by submitting false

---

[9] September 2004 Semiannual Report, p.25.
[10] March 2005 Semiannual Report, p.29.

NSF and OIG Jointly Oversee Compliance Agreements

Compliance agreements are frequently a component of settlement agreements entered into to resolve investigations involving institutions. They serve as compacts between the subject institution, NSF management, and OIG, to ensure the subject institution takes affirmative actions to create policies and procedures to ensure compliance with all federal regulations concerning the proper custody, use, and accounting for NSF grant funds. As signatories to the plan, both NSF management and OIG have a strong interest in the success of these actions, and therefore jointly monitor their progress for the term of the compliance agreement.

During this semiannual period, we have been actively monitoring two such compliance plans: one from a large school system and the other from a university. Both compliance agreements have five-year terms. In one case, NSF management and OIG representatives traveled together to conduct an on-site inspection and to meet new compliance officials. In both cases, representatives from NSF management and OIG met to review reports submitted pursuant to the compliance plans, assessed the success of the institutions' implementation of policies and procedures, and jointly worked toward a common goal of ensuring NSF grant funds were protected.

claims on approximately 500 federal grants awarded from July 1997 through October 2004. The grants were made by numerous federal agencies including DOD, EPA, NSF, and NASA, for work to be performed at two of the university's specialized service facilities (SSFs). The National Science Foundation's share of the settlement was $345,808.

A coordinated multi-agency investigation concluded that the university submitted grant applications containing incorrect or overstated information about anticipated expenses in the SSFs, because the university did not use a proper basis for setting and regularly updating its billing rate structure, as required by OMB Circular A-21. The university's failure to revise and appropriately set its billing rate structure resulted in numerous false claims being submitted for payment to the granting agencies.

The investigation also concluded that the university failed to follow federal law for calculating how extra compensation should be paid to the university faculty members for additional work on grant-supported research activity at the SSFs, resulting in improper excess charges being charged to the federal grants. Finally, the university failed to provide the required cost sharing under certain awards.

As part of the settlement, the university also signed a compliance agreement with the federal government that will require the university to make significant changes in its grant administration program. The changes include the implementation of written policies regarding compliance with all laws and regulations related to the receipt of federal grant money, the implementation of additional training programs for grant administrators, and the submission to the federal government of annual reports detailing the university's compliance efforts.

NSF had significantly more awards implicated in the wrongdoing in this case than any other agency. Currently, the university has approximately 190 active NSF awards totaling more than $51 million, with more than 120 proposals pending. Accordingly, we recommended that NSF (1) work with the agency overseeing the compliance agreement to ensure that NSF's interests are addressed, and (2) designate the university to be "high risk," resulting in the imposition of appropriate additional conditions on the university's performance under all extant and new NSF awards. NSF agreed with our recommendations. This is the first time that NSF has designated an awardee institution as "high risk."

Small Business Owner Submits Altered Letters of Support

In a proposal for a Small Business Innovation Research (SBIR) Phase II award sent to NSF, the owner of a Florida company misrepresented the results of the Phase I award by indicating that several previously filed patents were the results of the award. We also determined that the owner altered previous letters of support by changing the dates, in several cases by more than a year, to imply current support for various SBIR proposals. The 10 original letters were altered and resubmitted a total of 27 times within 13 proposals.

We ultimately concluded there was not sufficient evidence to proceed with a referral to the Department of Justice for civil or criminal prosecution, because 1) the misrepresentations were not material to NSF's funding decisions, and 2) several of the authors of the support letters believed it was an acceptable practice to change dates on previously submitted letters of support to resubmit them with additional proposals. However, we recommended that NSF make a finding that the owner committed research misconduct and require him to submit additional certification with any future proposals for a period of 2 years. This certification would assure NSF that all of the information contained in the proposal is true and accurate. NSF's decision is pending.

During this investigation, we discovered that NSF has not established guidance regarding the proper use of letters of support for those seeking grants. The absence of any such guidance makes it difficult to hold potential awardees accountable for the accuracy of their submissions. We recommended that NSF provide appropriate guidance to applicants by implementing the following actions:

• Update current NSF policies and guidelines to identify specific requirements for letters of support that are submitted with proposals.
• Provide additional guidance to PIs and awardees by including a presentation on the requirements for letters of support in the Regional Grants Conferences and professional meetings.
• Independently confirm the authenticity of all letters of support that commit specific support, financial or otherwise, to the proposal.

These recommendations are currently under consideration by NSF.

University Returns Award Funds to NSF

As a result of an OIG investigation, a California university returned $29,477.02 in residual award funds to NSF. We received information that the university transferred residual funds from federal awards into surplus holding accounts, and we opened an investigation. The investigation revealed that the university transferred both positive and negative account balances of several local, state, federal, and private closed grant accounts to a single holding account in order

to facilitate the conversion to a new accounting system. The university failed to restore these residual grant funds in a timely manner. In addition to returning the NSF funds, at our request, the university disclosed to five other federal agencies the existence of a total of $33,388.02 of their federal grant funds that were being held in its holding account.

NSF Agrees to Increase Monitoring of Awardee

NSF agreed with OIG recommendations to declare an active award with a Minnesota institution as high risk and to impose special award conditions on current and future awards. OIG had previously recommended that NSF take action to protect funds awarded to the institution, because DOJ had determined that the institution lacked adequate internal controls to ensure that cost transfers were made in a timely fashion, for appropriate reasons, and with adequate documentation.[11] DOJ entered into a settlement agreement in which the institution agreed to return $6.5 million to the United States, with approximately $5,000 being returned to NSF. The Department of Health and Human Services is in the process of working with the institution to bring its accounting systems into compliance with the applicable requirements regarding the request, receipt, and use of federal grant proceeds.

Employee Misuses Government Travel Credit Card

NSF notified us that within a 5-week period, an employee charged $1,654.78 to her government travel credit card for transactions that did not appear to coincide with official travel. The employee admitted to OIG investigators that she repeatedly misused her government travel credit card for purchases outside the scope of official business. We referred our findings to NSF, which canceled the employee's government travel credit card account and suspended her from duty without pay for 5 days.

Participant Support Funds Returned

We previously summarized cases where the grantees were either unfamiliar or non-compliant with the rules regarding participant support costs.[12] In this semiannual period we continued to review cases in which universities recognized they had misspent participant support funds and agreed to return those funds. The cases we resolved this period included instances in which principal investigators used participant support funds to pay for travel and laboratory supplies, and violations of the Fly America Act. The universities returned a total of $20,710.27 to NSF.

---

[11] September 2005 Semiannual Report, p.25.
[12] September 2005 Semiannual Report, p.27, and March 2005 Semiannual Report, p.37.

Administrative Investigations

Actions by the Deputy Director

NSF Finds That Director of Grants Committed Research Misconduct

In a previous Semiannual Report, we discussed our recommendation for a finding of research misconduct for a Director of Grants at a New York community college who submitted two NSF proposals with plagiarized text.[13]   Based on our investigation and recommendations, NSF: 1) found he committed research misconduct; 2) sent him a letter of reprimand; 3) required him to certify completion of a course in scientific ethics; and 4) required him to certify that any proposals he submits to NSF for 11 months after its finding of research misconduct do not contain plagiarized material.

NSF Proposes Debarment of Visiting Scientist for Plagiarism

The investigation of a foreign, visiting scientist who committed plagiarism on multiple proposals submitted to, or reviewed by, NSF appeared in our last Semiannual Report.[14]   Based on our investigation and recommendations, NSF: made a finding of research misconduct; proposed debarment of the subject for 2 years; and prohibited him from serving as an NSF reviewer, advisor, or consultant for 2-years. The subject has not yet indicated whether he plans to contest the debarment action.

Agency Reprimands Graduate Student for Fabrication of Data

Based on the investigation discussed in our last Semiannual Report,[15] NSF concluded that a graduate student who fabricated data in her thesis committed research misconduct. NSF issued a letter of reprimand in which it explained that, although fabrication of data is a serious matter, mitigating factors resulted in no further action taken by NSF, as recommended by OIG. These factors included the student 1) taking full responsibility, 2) cooperating fully with the university's and OIG's investigations, 3) expunging fabricated data, which were not published, from the thesis, and 4) apologizing to NSF. Further, NSF acknowledged that the university had already taken substantive actions that protected the federal interest.

---

[13] September 2005 Semiannual Report, p.29-30.
[14] September 2005 Semiannual Report, p.30.
[15] September 2005 Semiannual Report, p.30.

Report Forwarded to the Deputy Director

PI Plagiarized Text and Figures in Two Proposals

An OIG investigation concluded that a PI from New Jersey plagiarized text and figures from multiple source documents into two SBIR Phase I proposals he submitted to NSF. Initially, our investigation included three NSF SBIR proposals submitted by the PI, each of which contained apparently plagiarized text and figures. As part of our procedures, we provided the PI with a copy of the draft investigation report with a request for comments prior to forwarding it for adjudication. In his response the PI disclosed for the first time that he was not the author of one of the proposals (the other proposal). The SBIR firm provided the name of another company scientist who authored the other proposal. The CEO requested the PI submit the other proposal as well as the ones the PI had authored. The PI also told us in his response that all his answers to our inquiry and investigation questions about the other proposal were written by the other scientist and the PI copied them into his response.

We removed the other proposal from our investigation of the PI's plagiarism, and opened an inquiry into the apparent plagiarism by the other scientist. We modified our assessment of this case to reflect these new facts, and determined that the two remaining proposals the PI admitted he wrote contained sufficient plagiarized text and figures to warrant a finding of research misconduct.

We recommended NSF send the PI a letter of reprimand informing him that NSF has made a finding of research misconduct against him, and require that when proposals are submitted by the PI, or on his behalf, to NSF, he be required to submit a certification to OIG for 3 years that, to the best of his knowledge, they contain nothing that violates NSF's research misconduct regulation.

Other Significant Administrative Cases

Sloppy Research Is Not Misconduct

A New York institution notified us it was conducting an investigation into an allegation of data falsification. After the subject left the institution, some of her former colleagues were unable to replicate her published results, prompting the institution's investigation. The subject's research was primarily supported by the National Institutes of Health, so we coordinated our efforts with the Office of Research Integrity (ORI).

The institute's investigation committee concluded the subject's laboratory notebooks were unacceptably poor and did not meet community standards for recording and archiving data, and were not helpful in resolving the allegation. As part of her defense, the subject hired an independent laboratory to replicate her results. The committee coordinated with the journal that published her research so the three scientists who reviewed her published paper could also

review the replication efforts. The three reviewers disagreed about whether the replicated results supported the original data and interpretation.

The committee concluded that the allegation could not be resolved because there was not enough evidence to reach a definitive conclusion. The adjudicator found that the evidence did not support a finding, and we concurred and closed our case. We admonished the subject for poor record keeping and agreed with the committee's observation that if her records had been better, the allegation might have been avoided or at least resolved more definitively.

Appellate Court Opinion Triggers Review of Retaliation Claim

We received a request to reopen a fifteen-year old case on the basis that a state appellate court had concluded that a Texas institution retaliated against a professor for making protected disclosures. Retaliation is a serious matter, and we had committed to review this case again if new facts came to light. In 1991, a complainant alleged that, as a result of his disclosures to us regarding possible false statements in a proposal submitted to NSF, his institution retaliated against him by reprimanding him, reducing his pay, and failing to renew his contract. In addition to filing a complaint with us, he pursued redress for this and other alleged wrongs in a variety of forums, including the institution itself, the Equal Employment Opportunity Commission, and state and federal court. In all forums, except the state court, the complainant's claims were not sustained. In 1996, with the state court suit still pending, we closed our case with the proviso that if new facts came to light, we would consider reopening it to determine whether we needed to take action. As a result of this review, and in the exercise of our discretion, we determined that we did not need to take additional action to protect the federal interest.

Use of Animals Without IACUC Approval

A subaward was terminated when a scientist used animals in his research without obtaining official approvals. We received an allegation that a scientist working on an NSF-funded subaward had improperly used vertebrate animals without first submitting and receiving Institutional Animal Care and Use Committee (IACUC) approvals as required by NSF policy and applicable federal regulations. During our review, we determined that the proposal submitted to NSF did not indicate that vertebrate animals were to be used and that the PI did not intend to use animals during this award.

Although both the awardee and subawardee have policies and training on the use and care of animals, we determined that the scientist working on the subaward unilaterally decided to use the animals. He did not seek or obtain permission from his university's IACUC or inform the PI of his intentions. Subawardee officials did not find out about the use of the animals until the scientist sought reimbursement. The subawardee quickly informed both NSF and the primary awardee of the matter. In addition, the subawardee referred the

matter to its IACUC committee. Because the scientist had no prior history of wrongdoing and cooperated fully in the investigation, the subawardee took no action against him. Ultimately, he was not reimbursed for the animals, and no NSF funds were used. The awardee's IACUC terminated the subaward as a result of the scientist's actions.
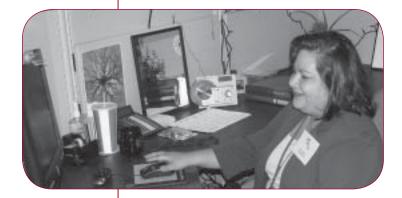
Reviews

Computer Software Used to Catch Plagiarism

OIG is currently experimenting with the use of computer software to identify plagiarized text in NSF proposals. There are a number of free or commercially available software packages that have the ability to identify text that is common to multiple documents. Some software packages are designed to perform a side-by-side comparison of two or more documents, while others compare the text of a document to text found on websites.

We obtained one "freeware" package and one commercially available to test their capabilities. Interns with linguistics training ran randomly selected proposals through the software to determine if they contained plagiarism. The interns analyzed over 600 proposals, and found that approximately 2.5% of the proposals contained more than *de minimus* unattributed copied text from other sources. Plagiarism rates were relatively uniform across scientific disciplines, although we noted that the rate of possible plagiarism in NSF CAREER proposals was significantly higher at 15%.

The process of identifying plagiarism using computer software still requires interaction with a professional to be effective, especially with software packages that compare text in proposals to documents available on websites. Nonetheless, the software packages identify common text and a possible source document where that text is located. These features can significantly expedite the process of identifying plagiarized text.

Investigator Anna Amores tests software designed to detect plagiarism.

NSF Responds Rapidly to Failures to Track Human Subjects Research

During this period we worked closely with a directorate to complete our review of NSF's tracking of human subjects research in one of the directorate's programs. This project is the most recent in a series of reviews we have conducted over the past 10 years in which we have urged NSF to improve its human subjects research tracking systems. These reviews have shown a continuing, significant failure of NSF's processes for ensuring the protection of humans during funded human subjects research, and have included a number of recommendations intended to comprehensively address the systemic problems identified. This particular review was a follow on to a pilot review of the previously referenced program in which we found some instances of noncompliance with NSF human subjects rules.

NSF is a signatory on the federal government's *Common Rule on the Protection of Human Subjects.* NSF requires that the "HUMAN SUBJECTS" box on the proposal cover page be completed for all proposals describing human subjects research. When making an award recommendation, the program officer enters information into a database that enables NSF staff to track this research. Awardees are required to inform NSF that the research has been reviewed and approved by the Institutional Review Board (IRB) before NSF funds the project. In lieu of such notification, NSF may fund the project and stipulate that human subjects research may not be initiated until the IRB approval notification is received.

We determined that for a vast majority of the research projects we reviewed in this NSF program, information was lacking in NSF's internal databases. We noted that, in the absence of fully and accurately recorded data, NSF cannot draw firm conclusions about the amount or extent of the human subjects research it funds. Other instances of problems were also identified, primarily in projects funded in the program's first year of operation. These included: incomplete Cover Pages on proposals prepared by submitting institutions, and funding for human subjects projects prior to receipt of IRB approval or NSF prohibition on conducting the human subjects research. We also noted incomplete training information for NSF program officers.

> ### *Humane Care Required*
>
> *NSF awardees are responsible for the humane care and treatment of any vertebrate animal used in projects supported by NSF awards.[16] When vertebrate animals are to be used in an NSF-funded project, the proposal must include sufficient information to enable reviewers to evaluate the choice of species, number of animals to be used, and any necessary exposure of animals to discomfort, pain, or injury. The proposal must have received the approval of the submitting organization's Institutional Animal Care and Use Committee (IACUC). Finally, NSF requires that the "Vertebrate Animal" box on the NSF cover sheet be checked.[17]*

---

[16] NSF Grant Policy Manual (July 2005) § 713. Awardees must: comply with the Animal Welfare Act and the regulations promulgated thereunder by the Secretary of Agriculture; follow the guidelines described in the National Academy of Science (NAS) Publication, "Guide for the Care and Use of Laboratory Animals"; and comply with the "Public Health Service Policy and Government Principles Regarding the Care and Use of Animals."

[17] Grant Proposal Guide (July 2004), II.D.5

In response to our recommendations, NSF ensured that the affected awards from the program under review were updated with the appropriate information. The Directorate formed a Grants Management Team to review recommended award actions and train its entire staff in post-award grants management. NSF has committed to including language describing an institution's responsibilities regarding human subjects in all future program announcements and solicitations. It also will require all program officers to indicate whether or not human subjects are involved in a project, and to confirm compliance with human subjects regulations. NSF stated that when grants.gov is fully implemented, all applicants will be required to provide human subjects research information, and in the meantime, NSF will include those requirements in FastLane. NSF has also committed to providing enhanced training to its program officers and to ensure that the web-based tutorial on program officers' responsibilities regarding human subjects research is accurate and its internal web links are functional.

Shortly after NSF responded to our recommendations, we encountered an institution that had been conducting human subjects research under a 2003 NSF award in a different program and confirmed that this project was not coded for human subjects research in NSF's database. The institution asked us if it needed to cease the research until the IRB approval was received, and we relayed NSF's prompt affirmative response that it should cease that research until IRB approval was obtained. The institution stopped the research until IRB approval for the nonexempt project was obtained, conducted training sessions for its PIs, and included information about the requirements for conducting human subjects research in its electronic newsletter. NSF has corrected the award information in its databases.

This section describes OIG's accomplishments towards the three goals set forth in the *OIG Performance Plan for 2005-2006*:

1. Promote NSF efficiency and effectiveness.
2. Safeguard the integrity of NSF programs and resources.
3. Utilize OIG resources effectively and efficiently.

Under each of these goals, we identified several strategies for achieving the goal. For each strategy, we listed specific actions that we planned to complete during the performance period, which ran from April 1, 2005, to March 31, 2006.

Goal 1:
Promote NSF Efficiency and Effectiveness

1. Identify and implement approaches to improve audit product quality and timeliness.

- Implement a tool to assess effectiveness of the story-conferencing process as a means to improve audit product quality and timeliness.
- Analyze the costs and benefits of moving to electronic workpapers; if feasible, conduct pilot testing with the performance audit team.
- Work with a consultant with Government Auditing Standards expertise to review and comment on the statement of work for contract auditors; establish a timeline to address the consultant's comments, and make revisions.
- Complete 75% of all OIG audits within one year of conducting the audit planning conference.
- Complete 65% of all CPA external audits within one year of conducting the audit planning conference.
- Assess results of the annual employee survey and retreat and develop appropriate steps to address the highest priority concerns of audit staff.
- Develop and issue an audit follow-up and resolution policy statement for OIG staff to facilitate the timely, consistent, and coordinated resolution of audit recommendations.

OIG made substantial progress in improving audit timeliness and quality.

Team-based auditing is an approach that relies on formal meetings called story conferences between auditors and managers at key points in an audit. These meetings are intended to facilitate improved communications and result in more-timely, higher-quality audit reports. Since FY 2003, the OIG's Office of Audit (OA) has used the team based auditing approach on high-risk audits. In FY 2006, to determine whether the process is working as intended, we began distributing questionnaires to staff after each audit to obtain their thoughts on its effectiveness . Overall, audit staff and senior managers agree that team-based auditing is an effective way to improve audit product quality and timeliness. We initiated research on electronic workpaper alternatives, but did not reach the point where we were ready to pilot test a program.

OA retained a consultant with expertise in Government Auditing Standards to review and comment on our draft audit guide for use during audits performed by Independent Public Accounting (IPA) firms under contract with OIG. To increase the effectiveness of our grant audits and more closely align the results with the needs of our stakeholders, the consultant recommended the OIG adopt the use of performance audit standards to carry out its grant audits. These standards, in contrast to financial audit standards, enable the auditor to focus more on auditees' management controls rather than just the allowability of costs claimed, and identify root causes of audit findings. As such, these audits should be useful in obtaining more effective corrective actions. Therefore, we are currently developing a statement of work and audit program to provide detailed guidance to OIG staff and audit contractors on applying the performance audit standards.

We met the performance target for completing at least 65 percent of CPA performed audits within one year. While we did not meet the target for OIG performed audits, audit supervisors and staff have been asked to identify and commit to ongoing audit workload targets, which should allow us to meet the performance targets for the upcoming performance year.

OA made significant progress in developing an audit follow-up and resolution policy for OIG staff. The draft is currently under review by OIG senior management. In response to last year's employee survey and retreat, we began circulating the monthly work- in- progress reports to audit staff to ensure that issues of common concern and importance were regularly communicated to all audit staff. Together, these policies and procedures should ensure a more consistent approach to the conduct of audits.

2. Strengthen our focus by refining approaches for selecting work and setting priorities.

- Assess the audit planning process.
- Develop appropriate steps to address ideas of audit staff as summarized by the audit planning team.
- Develop and execute the annual audit plan.
- Develop a catalog of publications, etc., for an audit planning library.
- Conduct annual risk assessment of NSF's award portfolio using specified risk factors.

OA successfully used team communication and brain-storming techniques to assess its process for developing and reporting the results of audit planning. We first convened the entire audit staff to discuss our historic processes and then used small group discussion to identify ways to streamline and improve the process. The meetings resulted in a number of substantive recommendations, including a new layout and content for the external audit plan based on the NSF award cycle. We then formed an audit planning sub-committee, consisting of members from each audit group, which successfully implemented the recommendations and completed the audit plan on schedule. The results were presented to the National Science Board at its September 2005 meeting.

The quality of our audit planning efforts depends largely on the accuracy and value of the information that is brought into the process. Therefore, we continued our efforts to develop a catalog of publications for our audit planning library, which will carry into the coming year. In order to further inform our selection of grants for audit, we also analyzed NSF's electronic award data using specified risk factors, such as the type of award instrument and funded institution, and prior audit findings. Over the next 12 months, we will expand our efforts to access additional information sources and develop techniques to improve the risk assessment process.

Goal 2:
Safeguard the Integrity of NSF Programs and Resources

1. Identify ways to improve case product quality and timeliness.

- Ensure investigations are consistent with OIG procedures and the PCIE/ECIE quality standards for investigations.
- Implement modified case milestones and assess their effectiveness on case processing and monitoring.
- Ensure referral of audit issues arising from investigations.
- Improve the quality of forensic audit services in support of investigations.
- Assess whether investigative statistics reported in semiannual and annual reports are appropriate performance measures.

- Assess methods for reducing the duration of Research Misconduct investigations.
- Assess whether tracking NSF Management's response time to our Reports of Investigations helps to ensure timely completion of cases.
- Review grant-funding agencies' OIG semiannual reports to Congress to develop a list of best practices and lessons learned to facilitate internal process improvement discussions.
- Increase the number of cases in which investigators conduct on-site visits.

The OIG's Office of Investigations (OI) continues to employ the strategies listed above, as well as those articulated in previous plans, to meet the objective of improving case quality and timeliness. We maintained our leadership role in the ECIE community for investigative peer review and quality standards by coordinating the timing and completion of ECIE reviews and responding to requests for assistance. We satisfactorily completed our annual internal peer review and modified our processes and Investigative Manual according to the recommendations of the review team. Our process was enhanced by our review of other OIGs' Semiannual Reports to the Congress, including their reported statistics.

In addition to continuing a rigorous quality control and assurance program on all case files, we completed a thorough analysis of our case milestones. As a result, we reduced the duration of several milestones and eliminated one that we determined to be unnecessary. We also began a project to track milestone completion by individual staff member. We have focused aggressively on tracking our cases and their results with OIG's Knowledge Management System (KMS). Working closely with OIG's software engineers, we have been able to make improvements to the system that reduce manual tracking and increase the accuracy of our data. By routinely sharing our list of referred reports with NSF management, we have increased the effectiveness of our communications, better ensured that appropriate actions are taken against wrongdoers, and reduced the time to obtain management responses.

Our focus on ensuring adequate outcomes to our investigative efforts afforded us the opportunity to refer a number of matters to either the Office of Audit or NSF management for resolution. We have expanded our use of a forensic auditing firm to support investigations and have continued to emphasize the value of on-site visits as compared to telephonic or written inquiries. Our efforts have resulted in significant improvements in our information analysis. These efforts are being rewarded with increased recoveries, more agreement by NSF management on our recommendations for improvement, and improved capability to process a significantly increased case load with the same number of investigators.

2. Strengthen proactive activities

- Ensure that the relevant OIG information presented to NSF and the public is current.
- Emphasize OIG liaison activity with NSF and outreach to the research community.
- Convene one Grant Fraud Investigation's Training Program.
- Monitor and assess the effect of proactive activities on case processing time, priorities, and allegation assessment.
- Ensure all FOIA/PA requests are responded to in a timely manner.
- Analyze the effectiveness of our plagiarism software as a proactive tool.
- Meet all needs for dissemination of outreach materials, including outreach posters.
- Emphasize regular and on-going interaction with the OIG and Department of Justice/ U.S. Attorney Office communities.

The objective of this strategy is to improve our abilities to detect wrongdoing and communicate the results of our investigative efforts. We continued to emphasize the detection of fraud, waste and abuse through our proactive review program. We initiated and completed several studies that led to management implication reports with significant agency responses and fund recoveries from awardees. One study, focused on the effectiveness of plagiarism detection software, generated a number of significant research misconduct cases.

We updated the information on the OIG web site and reinvigorated our outreach program to NSF and the communities it serves through our liaison program. OIG staff participated in numerous outreach events, including presentations at universities, professional associations, NSF Program Management Seminars, Regional Grants Seminars, conflict of interest briefings, and other NSF and research community activities. Additionally, we convened a highly successful, well attended in-service training for the IG community on grant fraud, and our staff

NSF OIG's grant fraud workshop attracted law enforcement professionals from many federal agencies.

continued to participate in interagency task forces. We maintain an agile FOIA response team to ensure that all inquiries are completed on time. Our increasing work activities resulted in prioritizing performance goals, and we intend to complete, early in the coming performance year, the review of the NSF Bulletin that describes how to handle allegations of research misconduct.

This past year saw an increase in the number of professional interactions with civil and criminal prosecutors at the Department of Justice and with a number of United States Attorney's Offices, including numerous training events and meetings. Of particular note, the United States Attorney for the Eastern District

of Virginia (EDVA) made time in his busy schedule to address the NSF OIG Grant Fraud Training Workshop. Additionally, the Head of the EDVA Affirmative Civil Enforcement Unit (responsible for recoveries of over $200,000,000 from federal contractors and grantees between 2003 and 2005) participated with OIG staff members in a presentation to the NSF Regional Grants Conference in Boulder, Colorado. Our proactive activities in this area have paid huge dividends and have contributed to the establishment of excellent working relationships between our offices.

We maintained an active summer intern program through which we brought a number of law students and others interested in investigative careers into our office. The intern program made significant contributions to our proactive efforts, which were essential to the detection of wrongdoing. Our interns conducted reviews under the supervision of OI staff, thereby allowing us to leverage resources and complete this essential component of a well-rounded investigative effort.

Goal 3:
Utilize OIG Resources Effectively and Efficiently

1. Utilize professional expertise and talents of all OIG staff.

- Conduct annual survey of OIG staff to obtain its views on the effectiveness of
  - OIG use of its resources in personnel, equipment, technology and con tracting,
  - Management planning, policies, and procedures,
  - Internal communications and coordination., and
  - OIG impact on NSF, and
  - KMS and other management tools.
- Analyze survey results and develop corrective actions for the problems identified.
- Continue the use of the team approach in brainstorming and resolving OIG internal
  management issues and in developing OIG activities.
- Complete development of an integrated Knowledge Management System (KMS)
  within the OIG.
- Develop in-house technical expertise for maintaining KMS.
- Complete a KMS user manual for OIG staff.
- Conduct KMS focus groups to identify what IT applications or tools are used by staff to support their primary work processes, and what problems they have using these tools; analyze results to determine need for training or alternative tools.
- Explore appropriate alternative IT tools that may offer work process improvements.
- Develop and conduct KMS training.

- Update KMS user manuals.
- Provide prompt, effective responses to requests for IT support.
- Update auditor and management analyst position descriptions.
- Develop a core audit training program and core audit competencies. Introduce appropriate opportunities for cross-training.
- Complete training identified in Individual Development Plans.

Over 60 percent of OIG staff responded to the annual employee survey conducted in February 2006. Respondents gave the highest ratings overall to the support they received from management in the form of office space, supplies, training, and computer resources. Our staff also report that they have a good understanding of the mission and goals of the office, that they and their co-workers follow appropriate standards, and that they believe OIG makes an important contribution to NSF. As in past years, we focused attention during our 2005 retreat on areas that were identified by that year's survey as opportunities for improvement. Two issues received significantly higher ratings in 2006: satisfaction with our KMS system, and intra-office cooperation and coordination. With regard to the lowest rated issues overall, we noted that these issues mostly continued to trend higher than in past years and that none received ratings below 3.2.

OIG staff professionals volunteer to form teams to plan office programs and resolve issues. The team approach was used to analyze and comment on the results of the employee survey, organize and frame the discussions for the 2005 retreat, and review changes to existing policies and recommend new ones. Based on the 2005 survey and retreat discussions, a staff committee drafted recommended action items for management consideration and incorporated new issues in the 2006 employee survey. Teams of two to four staff each act as liaisons to the various NSF directorates to foster better communication between OIG and the agency.

We conducted focus groups to assess various issues and identify improvements for the office KMS system, which provides automated management and tracking capabilities to support audit, investigative, and administrative functions. We also held eight training sessions (four each for the Audit and Investigation groups), updated the KMS User Manual, and made numerous system enhancements during the year. The enhancements included new modules for tracking staff individual development plans and for handling forensic accounting requests, refinements to many existing KMS modules, and various new and redesigned reports for presenting KMS information in formats that met users' needs. We upgraded the OIG server to provide faster processing and acquired new software tools to assist in managing and performing audits and investigations.

In fulfilling its charge to update auditor and management analyst position descriptions, the Position Description Team extensively researched values and competencies in the OIG community, as well as work done on core competencies by a consultant under NSF contract. The team recommended 8 Core Values and 18 Core Competencies to be included in all audit staff position descriptions.

After discussions on rankings with senior audit managers and obtaining feedback from all audit staff, the team substantially revised the audit staff position descriptions. We believe these changes will provide staff and supervisors with a better understanding of the expectations for their performance, a clearer link with the OIG Performance Plan, and improved ability to identify training needs for future career development.

Approximately 75 percent of the training proposed on the individual development plans of OIG staff was completed during the past year. While we hope to increase this percentage in future years, we also recognize that not all proposed training is likely to be accomplished within the 12 month period.

2. Improve communication and collaboration within OIG.

- Provide timely information exchange and referrals among the audit, investigation, and administrative units.
- Share information about audit, investigative, and administrative activities at all-staff meetings.
- Strengthen Investigations/Audit/Administrative teams performing OIG/NSF liaison duties.
- Survey staff for suggestions on how to improve internal communications and collaboration.
- Continue periodic meetings between audit and investigation managers to discuss cross-cutting issues, mutual concerns, and cooperative efforts.

At the 2005 OIG retreat, management solicited suggestions for how to improve internal communications and collaboration from staff. The responses included 93 comments and suggestions on a variety of topics, including making meetings more productive, training, multi-disciplinary projects, internal communications, and supervision. Several of the suggestions, such as conducting more-frequent orientation for new staff, were implemented immediately, while others are still being considered. The results of the 2006 employee survey indicate that our efforts in improving coordination were largely successful, as the statement "there is a spirit of cooperation among our different OIG units" received a significant increase in its score over the previous year.

Improvements to the KMS Referral module facilitated the timely exchange of information among the audit, investigative, and administrative units within OIG. The office continues to emphasize active and meaningful exchanges among staff of the various units. The offices of audit and investigation convened a number of increasingly productive meetings to exchange ideas and discuss progress on referrals. The completion this year of the KMS module for reporting and tracking referrals between the two units greatly facilitated this process. All staff participate in OIG's monthly meetings to share information, ensure broad understanding of how their respective units operate, and present the results of recent reports and cases.

3. Ensure effective external communications and consultation with our stakeholders.

- Produce timely external reports on OIG results and issues.
- Provide testimony and other requested information to congressional committees.
- Provide briefings to the NSB, Congress, OMB, NSF, and others regarding OIG plans, priorities, and progress.
- Issue two OIG Newsletters by email.
- Update NSF leadership regularly on OIG activities and concern.
- Collaborate with federal and international agencies to advance common audit, investigative, and management goals.
- Provide leadership and active participation in the IG community.
- Improve presentation and content of OIG website.

OIG is responsible for keeping key stakeholders and oversight officials informed in a timely way about its activities and findings concerning NSF programs and operations. OIG's Semiannual Reports to the Congress, budget submissions to the Office of Management and Budget and to the Congress, NSF's Financial Statement Audit Report, Performance Report, and Management Challenges Letter were all delivered within the timeframe specified by law or by the prescribed target date. The IG testified before the House of Representatives Committee on Science Subcommittee on Research in March 2005 about the two most important management challenges facing NSF: strategic management of NSF resources and improved financial performance. In February 2005, Dr. Boesz submitted a statement for the record before the U.S. Senate Committee on Appropriations that discussed in more detail NSF's challenge in managing large infrastructure projects. In both instances the IG provided all information requested by congressional members and staff.

Our staff presented regular briefings to the Audit and Oversight Committee of the National Science Board on a variety of topics, such as the audit of NSF's financial statement, the OIG annual audit plan, the findings of several performance audits, the OIG budget request, and the Sarbanes-Oxley Act. We released two electronic newsletters to provide an interim update on our activities, between Semiannual Reports, to interested parties in the government and research communities. The IG and Deputy IG conducted eight briefings for the NSF Director and Deputy Director on recent, ongoing, and planned OIG activities, as well as other matters concerning the management and operations of the agency.

Our office actively participates in many committees and initiatives organized by the IG community, and we have played a leadership role in two key areas: establishing a dialogue among international organizations responsible for science research funding; and increasing awareness within the federal government about research misconduct. In June 2005, the IG and the Head of Scientific Affairs for DFG Germany co-hosted a workshop entitled Accountability in Science Research Funding – Meeting the Challenge, to discuss strategies for addressing

OIG open houses foster better communication between NSF and OIG staff. Darrell Drake, Lee Stokes, and Jill Schamberger stand ready to explain OIG's mission.

accountability challenges. Representatives of 13 countries attended the meetings that were held in Bonn. We also sent an auditor on a temporary detail to England to share auditing techniques, and one of our auditors provided advisory assistance to the Science Foundation of Ireland. OIG continues to lead the PCIE/ECIE Misconduct in Research Working Group, which is chaired by NSF's Inspector General. This group monitors the status of agencies' efforts to establish policies addressing research misconduct and organizes educational programs highlighting the issue.

OIG staff contribute in many ways toward advancing the common goals of our community. We organized and hosted a successful one-day Grant Fraud Workshop that was attended by 125 professionals from most grant-making agencies. Case studies on successful grant fraud investigations and prosecutions were presented and discussed at length. The IG serves as an elected member of the Executive Council of Inspectors General, a steering committee for PCIE/ECIE policies and activities. OIG staff continued to actively participate in the PCIE/ECIE Investigations Committee, the PCIE/ECIE Inspections and Evaluation Committee, the PCIE/ECIE IT Roundtable, the IG Steering Committee for E-Learning, and the PCIE GPRA Roundtable, which is a forum for discussion of the integration of GPRA requirements into the audit function. Staff members also assisted in organizing and coordinating the PCIE/GAO Roundtable on Financial Statement Audits, in which 200 auditors from GAO and the IG community addressed critical issues in auditing federal agencies' annual financial statements.

Our staff participated in the Comptroller General's Domestic Grant Working Group with auditors from federal, state, and local agencies to develop a guide for improving accountability for grant funds. Audit staff were also actively involved with the PCIE/ECIE Federal Audit Executive Council, which coordinates the implementation of federal initiatives that affect the policy and operations of IG audit organizations. Our auditors worked with the Financial Statement Audit Network, a committee of the Federal Audit Executive Council, which conducts a forum to discuss key issues concerning the preparation and audit of federal financial statements. Finally, OIG staff served as members of the Working Group on Stewardship and Accountability sponsored by the National Science and Technology Council Research Business Models Subcommittee. This working group is addressing ways to streamline sub-recipient monitoring and improve financial performance.

We continued to make a number of improvements to the OIG website to facilitate communications with our stakeholders.

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

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	16	$45,590,514	$5,500,231
B.	That were issued during the reporting period	20	$3,539,398	$22,331
C.	Adjustment related to prior recommendations	(1)	$154,322	$0
Subtotal of A+B+C		35	$49,284,234	$5,522,562
D.	For which a management decision was made during the reporting period	12	$1,831,340	$791,064
	i) dollar value of disallowed costs	N/A	$574,284	N/A
	ii) dollar value of costs not disallowed	N/A	$1,257,056	N/A
E.	For which no management decision had been made by the end of the reporting period	24	$47,452,894	$4,731,498
For which no management decision was made within 6 months of issuance		6	$44,316,118	$4,709,167

Audit Reports Involving Cost-Sharing Shortfalls

		Number of Reports	Cost-Sharing Promised	At Risk of Cost Sharing Shortfall (Ongoing Project)	Actual Cost Sharing Shortfalls (Completed Project)
A.	Reports with monetary findings for which no management decision has been made by the beginning of the reporting period:	5	$18,914,667	$940,046	$6,960,987
B.	Reports with monetary findings that were issued during the reporting period:	0	$0	$0	$0
C.	Adjustments related to prior recommendations		$0	$0	$1,154,340
Total of reports with cost sharing findings (A+B+C)		5	$18,914,667	$940,046	$8,115,327
D.	For which a management decision was made during the reporting period:	N/A	N/A	$0	$0
	1. Dollar value of cost-sharing shortfall that grantee agreed to provide	N/A	N/A	$0	$0
	2. Dollar value of cost-sharing shortfall that management waived[18]	N/A	N/A	$0	$0
E.	Reports with monetary findings for which no management decision has been made by the end of the reporting period	5	$18,914,667	$940,046	$8,115,327

---

[18] Indicates the dollar value waived by management. Most was waived as a result of additional documentation provided during audit resolution to support the questioned amounts.

Status of Recommendations that Involve Internal NSF Management Operations

Open Recommendations (as of 3/31/2006)	
Recommendations Open at the Beginning of the Reporting Period	86
New Recommendations Made During Reporting Period	30
Total Recommendations to be Addressed	116
Management Resolution of Recommendations[19]	
Awaiting Resolution	21
Resolved Consistent With OIG Recommendations	95
Management Decision That No Action is Required	0
Final Action on OIG Recommendations[20]	
Final Action Completed	30
Recommendations Open at End of Period	86
Aging of Open Recommendations Awaiting Management Resolution:	
0 through 6 months	10
7 through 12 months	8
More than 12 months	3
Awaiting Final Action After Resolution	
0 through 6 months	20
7 through 12 months	12
More than 12 months	33

---

[19] "Management Resolution" occurs when the OIG and NSF management agree on the corrective action plan that will be implemented in response to the audit recommendations

[20] "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

Report Number	Subject	Questioned-Costs	Unsup-ported-Costs	Better Use of Funds	Cost Sharing At-Risk
06-1-001	RPSC CAS 418	$0	$0	$0	$0
06-1-002	University of Miami	$0	$0	$0	$0
06-1-003	UNAVCO Incurred Cost Audit	$44,101	$0	$0	$0
06-1-004	RPSC ID/ODC Classification System	$0	$0	$0	$0
06-1-005	San Francisco Unified School District	$712,620	$0	$0	$0
06-1-006	Institute for Systems Biology	$23,721	$0	$0	$0
06-1-007	Detroit City School District	$1,749,024	$0	$0	$0
06-1-008	Howard University ECSEL	$141,595	$22,331	$0	$0
06-2-001	FY 2005 FISMA Evaluation Survey	$0	$0	$0	$0
06-2-002	FY 2005 Report on FISMA	$0	$0	$0	$0
06-2-003	RPSC POFMS Survey & Internal ControlAssessment	$0	$0	$0	$0
04-2-004	Data Dissemination	$0	$0	$0	$0
06-2-005	FY 2005 Financial Statement Audit	$0	$0	$0	$0
06-2-007	Independent Auditors' Report of Fiscal Year2005 & 2004 Special-Purpose	$0	$0	$0	$0
06-2-008	AUP-Intragovernmental Activity and	$0	$0	$0	$0
06-2-009	AUP International Ocean Drilling Program	$0	$0	$0	$0
06-2-010	2005 Government in the Sunshine Act	$0	$0	$0	$0
	Total:	$2,671,061	$22,331	$0	$0

NSF-Cognizant Reports

Report Number	Subject	Questioned Costs	Unsupported Costs	Cost Sharing At-Risk
06-4-001	Educause	$0	$0	$0
06-4-002	Earth & Space Research	$0	$0	$0
06-4-003	Dallas Independent School District	$203,827	$0	$0
06-4-004	Pasadena Area Community College District	$0	$0	$0
06-4-005	Kalispell Public Schools	$0	$0	$0
06-4-006	WGBH Educational Foundation	$0	$0	$0
06-4-007	Gadsden Independent School District	$0	$0	$0
06-4-008	Cleveland Municipal School District	$0	$0	$0
06-4-009	Stark County Educational Service Center.	$0	$0	$0
06-4-010	Consortium of Univ. for the Advancement Of Hydrologic Science	$6,160	$0	$0
06-4-011	The Exploratorium	$0	$0	$0
06-4-012	Southwest Center for Educational Excellence	$0	$0	$0
06-4-013	Oregon Museum of Science & Industry	$0	$0	$0
06-4-014	William Davidson Institute at the Univ. of MI Business School	$0	$0	$0
06-4-015	Town of Holbrook	$0	$0	$0
06-4-016	University Corporation for Atmospheric Research	$0	$0	$0
06-4-017	Joint Oceanographic Institutions	$0	$0	$0
06-4-018	Educational Broadcasting Corporation	$0	$0	$0
06-4-019	Institute of Ecosystem Studies, Inc.	$0	$0	$0
06-4-020	Museum of Science	$0	$0	$0
06-4-022	Carnegie Institution of Washington	$0	$0	$0
06-4-024	WGBH Educational Foundation	$0	$0	$0
06-4-025	The Computing Research Association, Inc.	$0	$0	$0
06-4-027	Horizon Research, Inc.	$0	$0	$0
	Total:	$209,987	$0	$0

Other Federal Audits

Report Number	Subject	Questioned Costs	Unsup-ported Costs	Cost Sharing At-Risk
06-5-001	University of Richmond & Its Affiliate	$388,000	$0	$0
06-5-003	Blackfeet Community College	$22,161	$0	$0
06-5-004	The College of Wooster	$130,929	$0	$0
06-5-007	Minuteman Regional Vocational School District	$18,694	$0	$0
06-5-009	Smithsonian Institution	$5,500	$0	$0
06-5-016	Brigham Young University	$12,397	$0	$0
06-5-022	The University of Alabama	$3,772	$0	$0
06-5-024	State of Mississippi Institutions of Higher Learning	$10,850	$0	$0
06-5-036	Northwestern University	$1,204	$0	$0
06-5-037	Central State University	$3,270	$0	$0
06-5-046	Polytechnic University	$47,253	$0	$0
06-5-059	Black Hills Special Services Cooperative	$9,225	$0	$0
06-5-061	American Indian Higher Education-Consortium	$5,095	$0	$0
	Total:	$658,350	$0	$0

Audit Reports With Outstanding Management Decisions

This section identifies audit reports involving questioned costs, funds put to better use, and cost sharing at risk where management had not made a final decision on the corrective action necessary for report resolution with 6 months of the report's issue date. At the end of the reporting period there were six reports remaining that met this condition. The status of recommendations that involve internal NSF management is described on page 51.

INVESTIGATIONS CASE ACTIVITY
(October 1, 2005 – March 31, 2006)

	Preliminary	Civil/Criminal	Administrative
Active Cases at Beginning of Period	26	59	61
Opened Cases	124	28	24
Closed Cases	86	43	30
Active Cases at End of Period	64	44	55

INVESTIGATIONS CASE STATISTICS

Referrals to DOJ	5
Criminal Convictions/Pleas	3
Civil Settlements	1
Administrative Actions	14
Investigative Recoveries	$2,331,397.68
Research Misconduct Findings	3
Cases Forwarded to NSF Management for Action	7
Cases Forwarded to NSF Management in Prior Periods Awaiting Action	0

INVESTIGATIONS CASE STATISTICS (CONTD.)

Assurances and Certifications[21]

Number of Cases Requiring Assurances During This Period	6
Number of Cases Requiring Certifications During This Period	4
Assurances Received During This Period	0
Certifications Received During This Period	0
Number of Debarments in Effect During This Period	7

[21] 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.

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. paragraph 552) and the Privacy Act (5 U.S.C. paragraph 552a). During this reporting period:

We received 12 FOIA requests. We responded to 10 with a response time that ranged between 3 days and 21 days, with the median around 10 days and the average around 11 days.

No appeals were filed.

Appendix 1

Reporting Requirements

Under the Inspector General Act, we report to the Congress every six months on the following activities:

Reports issued, significant problems identified, the value of questioned costs and recommendations that funds be put to better use, and NSF's decisions in response (or, if none, an explanation of why and a desired timetable for such decisions). (See pp. 5, 13, 47)

Matters referred to prosecutors, and the resulting prosecutions and convictions. (See pp. 27, 56)

Revisions to significant management decisions on previously reported recommendations, and significant recommendations for which NSF has not completed its response. (See pp. 20, 55)

Legislation and regulations that may affect the efficiency or integrity of NSF's programs. (See p. 7)

OIG disagreement with any significant decision by NSF management. (None)

Any matter in which the agency unreasonably refused to provide us with information or assistance. (None)

Appendix 2

ACRONYMS

CFO	Chief Financial Officer
COI	Conflict of Interest
COV	Committee of Visitors
DACS	Division of Acquisition and Cost Support
DCAA	Defense Contract Audit Agency
DD	Deputy Director
DFE	Designated Federal Entity
DGA	Division of Grants and Agreements
DoD	Department of Defense
DoJ	Department of Justice
ECIE	Executive Council of Integrity and Efficiency
FASAB	Federal Accounting Standards Advisory Board
FFRDC	Federally Funded Research and Development Centers
FISMA	Federal Information Security Management Act
FOIA	Freedom of Information Act
GAO	General Accounting Office
GPM	Grant Policy Manual
GPRA	Government Performance and Results Act
HHS	Department of Health and Human Services
IG	Inspector General
IRB	Institutional Review Board
KMS	OIG Knowledge Management System
MIRWG	Misconduct in Research Working Group
MREFC	Major Research Equipment and Facilities Construction
NIH	National Institute of Health
NSB	National Science Board
NSF	National Science Foundation
OIG	Office of Inspector General
OMB	Office of Management and Budget
OPP	Office of Polar Programs
ORI	Office of Research Integrity
PCIE	President's Council on Integrity and Efficiency
PI	Principal Investigator
PFCRA	Program Fraud Civil Remedies Act
QCR	Quality Control Review
SBIR	Small Business Innovation Research
STC	Science and Technology Centers
USAP	United States Antarctic Program
USI	Urban Systemic Initiative
USP	Urban Systemic Program