



**SEMIANNUAL REPORT TO CONGRESS
SEPTEMBER 2008**

**National Science
Foundation**

**Office of
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 over \$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.

Cover photo by Dr. Ken Busch, OIG.

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From the Inspector General

This Semiannual Report to Congress highlights the activities of the National Science Foundation (NSF) Office of Inspector General (OIG) for the six months ending September 30, 2008. During this period we issued 11 audit reports with questioned costs totaling \$5,288,102. We also closed out 23 civil/criminal and 35 administrative investigations that recovered \$1,047,170 for the government, while referring nine cases for prosecution. As always, we thank our NSF colleagues for their assistance in helping us to accomplish these excellent results.

As I prepare to retire in January from the National Science Foundation, I want to express my gratitude to the National Science Board for allowing me the privilege of serving the Congress, the administration, and the taxpayers as NSF's Inspector General. During my first year as IG, our entire staff participated in the creation of a strategic plan that has successfully guided our priorities throughout my tenure. Those priorities have been to: focus our investigations, audits, and other reviews on the most significant issues and the highest-risk programs; exercise government-wide leadership in the area of misconduct in research; be proactive in preventing problems before they occur; and ensure that all OIG activities maintain the independence necessary to perform the IG oversight role with integrity and objectivity.

Our office followed the principles presented in the plan, and we take pride in our achievements. Over the past nine years, we have been a strong advocate for improved management of large infrastructure projects and more vigilant post-award administration. I am pleased to report that NSF has made steady progress in these areas. We have also focused attention on several other important management challenges, including the administration of cost sharing, workforce planning, contract administration, and research ethics. With regard to research misconduct, our office has assumed a leadership role within the federal community by founding and chairing the Misconduct in Research Working Group, and internationally as the U.S. representative to the Global Science Forum. In addition, we are one of the few OIGs to invest significant time and resources in an outreach program through which we have engaged our NSF colleagues and the larger research community in an ongoing dialogue about the responsibilities that go along with accepting government funding.

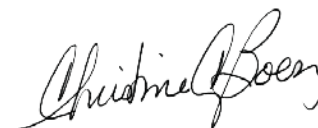
In my view, the accomplishments and reputation of this office were implicitly recognized last year when the OMB Deputy Director for Management appointed me to lead the Executive Council for Integrity and Efficiency (ECIE). The ECIE is comprised of 34 agency-appointed federal Inspectors General. My tenure as Vice-Chair coincided with the passage last month of the IG Reform Act of 2008, the first comprehensive amendment to the original IG Act in two decades. The new law includes measures that further enhance IG independence, while also increasing our accountability to the public. Though many of the inherent difficulties of the Inspector General's role remain, given the natural tension that exists between agency management and a separate overseer, the new law reaffirms the view that IGs best serve their agencies and the nation when their objectivity and credibility are not compromised by a lack of organizational independence.

Finally I would like to thank the many people who have supported me and contributed to the overall success of the OIG. First, there is the OIG staff. I am proud of the dedicated team of individuals who continuously carry out the responsibilities and tasks associated with our complex mission. They do this with the highest standards of professionalism, with high productivity and dedicated perseverance. I thank the

members of Congress for their ongoing support and for their dedicated staff who have worked closely with me to strengthen NSF programs and management. I greatly appreciate the cooperation that the OIG receives from NSF management and staff as the OIG carries out its mission. NSF has many accomplishments and will continue to play a fundamentally important role in the science, engineering, and educational communities. The OIG is a proud partner with NSF as it prepares for the future, striving to enhance the scientific enterprise. Although I previously mentioned the National Science Board, I want to emphasize the support I have received, collectively and from individual members. In its oversight role, the Board shares with the Inspector General the responsibilities for accountability. I greatly appreciate the Board's responsiveness to OIG recommendations. Additionally, I want to express my appreciation to my colleagues in the IG community for their assistance, advice and friendships. I will miss the people. I wish all much future success as government begins its transition to a new administration and faces the many challenges that exist.

Finally I want to express my grateful appreciation to my family and friends who have supported me throughout my career. They have become ardent supporters of Inspectors General, and are avid readers of our Semiannual Reports to the Congress.

With sincere gratitude and great appreciation,



Christine C. Boesz, Dr.P.H.
Inspector General
November 19, 2008

Report Highlights

- An audit found that the terms and conditions included in NSF's cooperative agreements for the management and operation of its large facilities need to be strengthened for NSF to fully ensure its facilities accomplish their programmatic goals and objectives. Only two of the six large facility cooperative agreements reviewed include terms and conditions addressing all four of the primary components of a robust program evaluation and measurement system: 1) clear and agreed upon goals; 2) performance measures and, where appropriate, performance targets; 3) periodic reporting; and 4) evaluation and feedback to assess progress. With NSF's large facilities funded at over \$1 billion annually, it is important that NSF have a process to ensure that all large facility agreements contain each of the four performance evaluation and measurement components. **(See p. 14)**
- The OIG is performing a series of reviews at NSF's top-funded universities to assess the adequacy of accounting and reporting processes for labor costs charged to federal awards. During this reporting period, reviews of two more universities with significant NSF and federal funding were completed and identified significant weaknesses in the documentation, certification and accuracy of labor effort reports supporting approximately \$33 million of research salaries charged to NSF awards. **(See p. 15)**
- Records supporting two awards to the School District of Philadelphia (SDP) were found to be unauditible, as auditors could not determine whether approximately \$13 million of direct and associated indirect costs, and \$3.2 million of cost sharing claimed by SDP were allowable, allocable, and reasonable. This occurred because SDP failed to address significant internal control weaknesses in its financial management of NSF awards first reported in an OIG audit performed in 2000. Due to the significant and repetitive nature of the internal control weaknesses, OIG recommended that NSF make no future awards to SDP until it verified that corrective measures have been implemented. **(See p. 17)**
- A university returned \$283,488 in NSF grant funds that were improperly charged over a five-year period by a PI with personal issues. OIG initiated the investigation based on anonymous allegations that a PI at a Tennessee university misused NSF grant funds by submitting extravagant travel reimbursement requests and questionable supply expenses. A detailed review by our investigators and university auditors and found that some of the travel expenses submitted by the professor were unreasonable, and some purchases appeared personal in nature.

The university determined that many of these unallowable charges were not prevented because department administrators did not stringently supervise her use of grant funds out of concern for her well being. **(See p. 27)**

- A subject who pretended to be an NSF official to lure young women to hotel rooms to carry out “research” agreed to plead guilty of one count of violation of 18 U.S.C. § 912, False Personation of an Officer or Employee of the United States, a felony. Our investigation determined that over 3½ years, the subject placed two dozen advertisements on the internet recruiting people to help with a spurious “research” project in San Francisco. The subject only responded to inquiries from mid-20’s female victims, to whom he sent multiple emails identifying himself (with a false name) as an NSF official. **(See p. 28)**
- An OIG investigation into an allegation of plagiarism, determined that a PI from a South Carolina university, plagiarized material from a proposal he received from NSF for peer review into his own NSF proposal. Based on a review of all the facts, our investigators concluded that the PI purposefully plagiarized a substantial amount of text from the confidential proposal he reviewed, and knowingly plagiarized a small amount of text from one internet source. The Deputy Director: made a finding of research misconduct; debarred the PI for 1 year; required the PI to provide certifications for 3 years after the debarment; and prohibited the PI from reviewing proposals for 3 years. **(See p. 36)**
- OIG’s annual list of the most serious management challenges facing the National Science Foundation appears in the appendix. **(See p. 55)**

OIG Management Activities

LEGAL REVIEW

Program Fraud Civil Remedies Act of 1986

As reported in the past two Semiannual Reports, the 2007 NSF Reauthorization Act, which passed in August 2007, amended the PFCRA to bring the National Science Foundation (NSF) within the statute's coverage. This amendment was supported by both OIG and NSF because it gave the agency authority to use administrative procedures to recover losses resulting from fraud cases under \$150,000 when the Department of Justice declines to prosecute. To take advantage of these provisions, however, the agency must first develop NSF regulations to implement PFCRA. In our last semiannual report, we noted that NSF expected to publish final regulations in early August 2008; to date, however, none have been issued. Until NSF promulgates such regulations, it remains unable to use this powerful tool to recover funds diverted due to fraud and ensure that appropriated funding serves its intended purposes.

OUTREACH

OIG continues to reach out to a broader and deeper audience by partnering with major organizations and associations whose memberships extend across large segments of the research community. Through these organizations, we are able to communicate directly with hundreds of research professionals about: 1) compliance-based operations that promote ethical conduct, and 2) strong accountability of federal research dollars to ensure public confidence and continued support for science. To date, our staff has opened communications with the Association of American Colleges and Universities, the American Association of Community Colleges, the Association of American Universities, the American Council on Education, the Association of Governing Boards, and the National Association of State Universities and Land Grant Colleges. We appreciate the response our message received from these organizations and look forward to working with them to prevent problems in the administration of the research enterprise.

Hotline Survey. Our office also launched an initiative to enhance the effectiveness of our Hotline program, after a recent government survey raised concerns about ethics and the federal workplace. The Ethics Resource Center's National Government Ethics Survey reported that only 30% of federal workers surveyed believe their organizations have well-implemented ethics and compliance programs, and only one in

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10 said there is a strong ethical culture in their agency. The survey also found that confidential whistleblower hotlines, a means for workers to safely report the misdeeds of colleagues or superiors, were not used by most employees who witnessed misconduct. Overall, only 1% of government workers used such hotlines to report misconduct.

OIG decided to conduct its own survey of NSF employees' opinions about our Hotline and to solicit recommendations on how to increase its profile and use among both NSF personnel and the research community. We received numerous suggestions on how to improve both the Hotline and its presentation. Based on the comments received, we have updated our webpage to increase the prominence of the Hotline and to make it easier for even a first-time visitor to our webpage to provide confidential information to our office. We have also asked NSF to include a direct link on its webpage to our Hotline. Highlighting the link will serve two purposes: increase the visibility of the Hotline among those who might use it; and demonstrate to NSF personnel that management is committed to maintaining an ethical workplace. In addition, we have emphasized the use of the Hotline as a topic in our briefings during the NSF new employee orientations. Finally, we drafted an article for inclusion in the NSF Annual Report to Employees, which fully explains the confidential nature of all communications with OIG, including the Hotline, and encourages NSF employees to use one of the many channels available to report any serious concerns.

Working with the International Community

During this semiannual period, the Inspector General participated in international forums addressing issues involving research misconduct and financial accountability. Dr. Boesz presented to the International Network of Research Management Societies in Liverpool England, where she also served as co-host

of an International Workshop on Accountability Challenges. Representatives from 13 countries attended the workshop in which Deborah Cureton, AIG for Audit presented on the Single Audit Act. In her role as U.S. representative to the Global Science Forum (GSF), Dr. Boesz and AIG for Investigations, Dr. Peggy Fischer, attended meetings in Vienna. The GSF is engaged in an ongoing effort to develop common standards for the conduct of research that define plagiarism and data falsification as a prelude to developing a common process for investigation and resolution of research misconduct allegations.



Dr. Boesz and AIGI Dr. Peggy Fischer with other representatives to the Global Science Forum meetings in Vienna.

In addition, other members of OIG participated in numerous meetings and presentations with our foreign counterparts to exchange information and best practices. Members met with and presented to delegations from the European Science Foundation and with Korean scholars participating in the LG Global Challenger Program. In these fora, we explained our processes and oversight procedures and answered questions from our international audiences.

Working with the Research Community

Participation in conferences. We participated in a wide range of workshops, conferences, and other events sponsored by institutions and associations of research professionals, carefully selected to maximize the impact of our outreach efforts. We presented at the Association of College and University Auditors, the Association of Independent Research Institutions, the Association of American Colleges and Universities, the American Association of Community Colleges, the Association of American Universities, and the National Association of State Universities and Land Grant Colleges. Through these presentations to the larger organizations within the research community we sought to disseminate information on best practices, encourage the development of systems and tools to identify, resolve, and prevent the occurrence of misconduct or mismanagement within the research enterprise.

Presentations at universities. We continue to receive many invitations to present at, and provide training to, universities and other organizations associated with the research enterprise. We addressed numerous groups that were involved in either applying for or administering NSF awards, performing supported research, or conducting university-level inquiries into allegations of research misconduct. We also presented to faculty and administration officials involved in the conduct of research misconduct inquiries and investigations at two universities. During each of these outreach events we shared best practices on the enhancement of compliance and ethics programs, answered questions, addressed relevant issues, and provided fact sheets, brochures, posters, and other outreach material.

Working with the Federal Community

Assistance to Congress. During this semiannual period, the NSF Inspector General, who is also Vice-Chair of the ECIE, provided advice to Congress on behalf of the IG community about pending legislation to strengthen federal OIGs. These efforts came to fruition when Congress passed the Inspector General Reform Act of 2008 which promises to make the institution of Inspector General more independent and effective in combating waste, fraud and abuse.

In preparation for hearings on open public access to federally funded research, OIG and Congressional staff discussed OIG audits on the dissemination of its research results and NSF's response to the audit recommendations. OIG staff explained that NSF is now linking scientific journal article citations to NSF's database of award abstracts describing the intended purpose of the research.

Assistance to OMB. OIG provided assistance to OMB in several areas. Staff have actively participated in one of the eight workgroups established by OMB to improve the quality of future Annual Single Audits which federal agencies rely on to ensure grant funds are spent properly (see page 21). In addition, staff are involved in OMB-sponsored workgroups to update OMB Circular A-50, *Audit Followup*, and have provided comments on draft revisions to OMB Circular 136 *Financial Reporting Requirements* and OMB Circular A-127, *Financial Management Systems*.

OIG activities. A committed member of the federal Inspector General community, our office provided both leadership and active participation to numerous OIG initiatives. The Inspector General, who is Chair of the PCIE/ECIE Misconduct in Research Working Group, continued to coordinate efforts within the IG community to identify, investigate, and prevent research misconduct. The AIGI participated in the National Academy of Science Responsible Conduct of Research Workshop. Other OIG staff continued to participate in the Association of Directors of Investigation, the PCIE Inspections and Evaluation Committee, and the PCIE GPRA Roundtable.

In addition, the AIGA co-chairs the Financial Statements Committee of the Federal Audit Executive Council (FAEC). The FAEC Financial Statement Audit Network has worked with the Government Accountability Office to revise the *Financial Audit Manual* (July 2008) to address changes in the Federal financial reporting system and the accounting and auditing standards issued by the American Institute of Certified Public Accountants (AICPA), and the Federal Accounting Standards Advisory Board. An NSF OIG Senior Audit Manager will accept an award in October on behalf of ECIE staff who worked on this substantial project.

Our expertise in the area of grant fraud investigations allowed us to continue to make significant contributions towards federal efforts to limit such misconduct throughout the government. We participated with other OIGs in numerous events and initiatives aimed at combating grant fraud. These included the Grant Fraud Subcommittee of the Department of Justice National Procurement Fraud Task Force and the National Procurement Fraud Working Group. During the past year we worked with the Federal Law Enforcement Training Center to develop a grant fraud investigation training program, and in this semiannual period, we provided instructors for two iterations of that training program. We also participated in the Regional Procurement Fraud Working Group.

We frequently met and worked with individuals from a number of other federal agencies and Offices of Inspectors General on a host of professional matters. These included events in conjunction with the Inspector General Academy, the Federal Law Enforcement Training Center, the Office of Science and Technology Policy, the Department of Justice, the Department of Health and Human Services, and the Government Accountability Office. Finally, we held discussions with OIGs from the Social Security Administration, the Export-Import Bank of the United States, the Department of Energy, the Federal Communications Commission, and the Denali Commission.

Working with NSF

National Science Board. During this semiannual period, we made several presentations to the National Science Board. Through these regular briefings, OIG is able to keep the leadership of NSF informed of matters of importance, necessary for the effective oversight of agency operations. Topics included the NSF Financial Statement Audit, ongoing labor effort audits, and the status of specific ongoing investigations. In addition, we presented to the Board's Executive Officer and staff on the requirements of the Sunshine Act.

Agency outreach. We have also continued our extensive outreach to NSF, primarily through our NSF liaison program. Our liaison teams (generally one investigator and one auditor) served as valuable conduits of information between our offices in the course of approximately 17 liaison events. In addition, we participated in NSF's New Employee Orientation program, through which we introduce OIG's mission to every "class" of new NSF employees coming into the agency. We explain how we can work together to enhance the integrity of NSF programs and operations.



In addition to the orientation of new employees, OIG and NSF staff collaborate in a number of areas. We actively participated and present at Program Management Seminars, which provide new NSF staff with more detailed information about the Foundation and its activities. These sessions are synergistic, in that they provide OIG staff with an opportunity to develop professional relationships and to learn about new developments within NSF program management, while educating our NSF colleagues about the mission and responsibilities of OIG. We continue to participate in NSF's Regional Grants Conferences and other events, such as NSF's Joint Annual Meeting for HRD PIs. Finally, we regularly participate in an internal media communication effort within NSF, in which we explain the OIG mission and responsibilities.

Dr. Boesz and Dr. Patricia Galloway, NSB Vice-Chair, visit Poker Flat Research Range near Fairbanks, Alaska during a recent Board meeting.

OTHER MATTERS

OIG Seeks Reimbursement Due for Audit of NSF Award to the U.S. Civilian Research and Development Foundation

In July 2006, as part of the NSF's Directors Audit Priorities, NSF requested that the OIG initiate an audit of the NSF cooperative agreement provided to the U.S. Civilian Research and Development Foundation (CRDF), a non-profit organization authorized by Congress after the Cold War to support research in the independent states of the former Soviet Union. While the statute allows for the OIG to be compensated for periodic program and financial audits from interagency funds provided for this cooperative agreement, the OIG has not been reimbursed for this audit.

Since 1995, other federal agencies and a private foundation have funded 89 percent of the \$140 million awarded to CRDF; approximately 70 percent has been provided by the U. S. Department of State. Under its interagency agreement, NSF is responsible for administering and monitoring the financial and programmatic performance of the CRDF award on behalf of the Department of State. To cover NSF's internal costs, the interagency agreement provides the agency with an administrative fee as part of the funds transferred for the CRDF award. Beginning in 2003, Congress also allowed for the transferred funds to cover the costs of OIG audits of the CRDF award.

Although NSF has received almost \$3 million in administrative fees for handling the CRDF award since 1995, and legislation specifically allows for OIG recovery of audit costs, the agency has decided not to reimburse OIG for the \$200,000 cost of the audit conducted at its request. NSF maintains that the audit should be funded from OIG appropriations. NSF later requested supplemental funds from the State Department to pay for the audit, but was told that State considers the audit costs to be part of the administrative fee, and therefore the responsibility of NSF.

The OIG will continue to try to resolve this issue with NSF. As the agency increases its volume of interagency awards, it will be difficult for the OIG to provide audit coverage of these other grants without additional budgetary resources and/or a mechanism to recover its costs from NSF's administrative fee.

Audits & Reviews

Audits performed this semiannual period identified improvements needed in the internal controls of NSF as well as its grantee organizations. Internal control is commonly defined as a process implemented by management that is designed to provide reasonable assurance that the organization's operations are effective and efficient, financial reporting is reliable, and applicable laws and regulations are followed. Consequently, the OIG's recommendations are intended to promote efficiency and effectiveness and to minimize the risk of inaccurate financial statements and non-compliance with laws and regulations. During this semiannual period, we also reviewed 115 annual single audits of NSF awardees that reported a total of 165 findings and worked with NSF to resolve findings and recommendations issued in prior periods.

Significant Audits Internal to NSF

FY 2008 FISMA Report Affirms NSF Security Program But Identifies Improvements Needed

The Federal Information Security Management Act (FISMA) requires agencies to adopt a risk-based approach to improving computer security that includes annual security program reviews and an independent evaluation by the Inspector General. Under a contract with the OIG, Clifton Gunderson LLP conducted this independent evaluation for FY 2008. Clifton Gunderson reported that NSF has an established information security program and has been proactive in reviewing security controls and identifying areas that should be strengthened. NSF corrected four of the six findings identified in the prior year's independent evaluation, but the auditors repeated two previous findings on the United States Antarctic Program's need to 1) replace an outdated and difficult to secure suite of applications and 2) develop, document, and implement a disaster recovery plan. The auditors also reported one new finding relating to improving the review of network accounts to detect and remove inactive accounts. NSF management concurred with the report and will provide a corrective action plan for the new recommendation. NSF's corrective action plan for the repeat findings, which we have accepted, includes implementation of corrective actions at the end of FY 2010 for the application replacement and the end of FY 2009 for the disaster recovery plan. Implementation status will be reviewed as part of the FY 2009 independent evaluation.

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Cooperative Agreements for Large Facilities Operations Need Strengthening to Ensure Facilities Accomplish Programmatic Goals

An audit report found that the terms and conditions included in NSF's cooperative agreements for the management and operation of its large facilities need to be strengthened for NSF to fully ensure its facilities accomplish their programmatic goals and objectives. Only two of the six large facility cooperative agreements reviewed include terms and conditions addressing all four of the primary components of a robust program evaluation and measurement system: 1) clear and agreed upon goals; 2) performance measures and, where appropriate, performance targets; 3) periodic reporting; and 4) evaluation and feedback to assess progress.

With NSF's large facilities funded at over \$1 billion annually, it is important that NSF have a process to ensure that all large facility agreements contain each of the four performance evaluation and measurement components. However currently, NSF has no overarching policy in place to ensure that the agreements for large facilities contain terms and conditions to address these performance components. Instead, the success that some of the facilities have achieved has been primarily due to the diligence and dedication of program officers who identified the need for performance evaluation systems and, through a process of trial and error, incorporated performance evaluation terms and conditions into the cooperative agreements over time. Auditors believe the absence of an agency-wide policy contributed to the inconsistency among agreements in addressing all of the critical elements.

To ensure all current and future large facility operation agreements include all four performance components, we recommended that NSF: 1) establish clear authority and resources in NSF's Large Facility Office to oversee all phases of the large facility life cycle; 2) develop and train NSF staff on policies and procedures for including performance evaluation and measurement terms and conditions in all facility cooperative agreements; and 3) provide a mechanism for knowledge transfer among program officers with responsibility for currently operating large facilities. NSF staff generally concurred with our recommendations.

This review is the first of a series of audits OIG is conducting to determine whether the terms and conditions included in NSF's cooperative agreements for the management and operation of its large facilities are sufficient for NSF to provide stewardship over these important and sizeable programs and assets. Using a representative sample of six currently operating facilities, we are assessing the sufficiency of NSF's cooperative agreements to ensure: 1) accomplishment of programmatic goals; 2) financial and administrative accountability; 3) protection of NSF assets; and 4) compliance with laws and regulations. The second audit, assessing the sufficiency of the terms and conditions related to financial and administrative accountability, should be complete in early 2009.

Significant Audits of Grants & Contracts

The OIG is performing a series of reviews at NSF's top-funded universities to assess the adequacy of accounting and reporting processes for labor costs charged to federal awards. During this reporting period, reviews of two more universities with significant NSF and federal funding were completed. These reviews identified significant weaknesses in the documentation, certification and accuracy of labor effort reports supporting approximately \$33 million of research salaries charged to NSF awards.

Among other significant reviews performed, an audit at a school district found the records supporting charges to the NSF award to be unauditible. Also, audits of three NSF contractors identified inadequate monitoring of \$6.7 million of subaward costs, noncompliance with federally disclosed cost accounting practices, and \$324,472 of overcharges for indirect costs.

University of California, San Diego Needs Better Oversight of its Decentralized Labor Effort Reporting System

An audit of the payroll distribution and effort reporting system used by the University of California, San Diego (UCSD) found that UCSD generally had a well established and sound federal grants management system, but identified significant weaknesses in UCSD's support of time reporting and certification processes affecting over 60 percent of the sampled salary and wages selected from a total population of \$28.7 million of salary charged to NSF awards.

UCSD operates a decentralized labor effort system in which the primary responsibility for many grants management functions rests with the individual research academic departments. The deficiencies cited in the report were the result of UCSD's failure to adequately oversee the activities of these departments. For example, auditors found that more than 60 percent of the \$1.2 million in sampled FY 2006 salary charges were certified after the due date set by the University. Also, some Personnel Activity Reports (PARs) were not signed or did not include proper confirmation of the reported labor effort, and four employees incorrectly charged NSF for 5 to 20 percent of labor expended on unrelated administrative activities. Without timely or appropriate controls for certifying labor effort reports, assurance that the certifications are reliable and reasonably support the substantial amounts of salaries and wages charged to NSF's sponsored projects is compromised.

The weaknesses in UCSD's labor effort reporting system occurred because the University had not: 1) established sufficient detailed written guidance for all PAR processes to ensure full compliance with federal requirements; 2) effectively communicated University policies and procedures to all staff involved in the PAR process; or 3) performed adequate monitoring to ensure all UCSD departments complied with established PAR policies and procedures. Furthermore, the University had not conducted an independent internal evaluation of sufficient scope to ensure the effectiveness of the payroll distribution and effort reporting system, thus missing an opportunity to identify and address needed improvements.

The report's recommendations aim to address these weaknesses and to improve UCSD's internal control structure for PAR management and oversight. The University generally concurred with the audit findings and recommendations and agreed to make the necessary changes to its policies and procedures. UCSD has also completed implementation of an automated labor effort reporting system, which should facilitate the adoption of our recommendations.

Vanderbilt University Needs to Ensure Accurate Reporting of Labor Charges and Effort on Sponsored Projects

Vanderbilt University did not approve effort reports timely and/or document certification dates in a majority of the records sampled. As a result, Vanderbilt's labor effort certifications did not always ensure that over 70 percent of the sampled items selected from a total of \$4.2 million of salary and wages charged to NSF grants, reasonably reflected actual work performed on sponsored projects. The auditors found that principal investigators (PIs) did not review and approve labor effort reports within six months of the end of the reporting period for 12 of the 68 reports reviewed, representing 16 percent of total salaries tested. Furthermore, they could not determine whether another 41 reports, representing 60 percent of the sampled NSF salary charges were approved timely because of missing certification dates. In addition, five of the 30 sampled employees interviewed reported actually working 10 to 50 percent less on NSF grants than the time certified on their labor effort reports.

Late certifications diminish the reliability of Vanderbilt University's after-the-fact confirmation of NSF labor costs because certifying officials are relying on their memory, in some cases as long as a year later, to validate the reported labor effort. For example, we found that certifying officials authorized \$17,955 (3 percent) of salary for five employees who did not work sufficient time to justify the salary charged to the NSF projects. Without documented certification dates, Vanderbilt cannot determine whether the labor effort confirmations were timely or not. The systemic nature of these control weaknesses raises concerns about the reasonableness and reliability of the remaining \$3.6 million in FY 2006 labor costs that Vanderbilt University charged to NSF grants and the labor costs claimed on \$300 million of other federal grants.

In addition, the audit found that Vanderbilt needs to provide for accurate reporting of voluntarily committed labor effort devoted by faculty members on federal projects. Unreported voluntary committed PI effort comprised approximately 3 percent of the total \$298,646 of labor costs charged to NSF awards by the 15 faculty members reviewed. Because Vanderbilt had over 2,800 full-time faculty members, the amount of unreported voluntary committed effort could be significant. As such, NSF has less assurance that PIs actually devoted the level of effort promised in their grant proposals to accomplish project objectives. Furthermore, as required by federal regulations, the unrecorded voluntary committed time should have been included in the organized research base Vanderbilt uses to calculate its indirect cost rate, thus reducing the amount of indirect costs the University charges to the federal government.

These weaknesses occurred because Vanderbilt had not established adequate internal controls to provide for proper administration and oversight of its payroll distribution and labor effort reporting system. Specifically, the University had not: 1) established comprehensive effort reporting policies and procedures; 2) provided adequate employee training to ensure clear campus understanding of the effort reporting process; and 3) performed sufficient monitoring to ensure campus implementation and compliance with established University and federal effort reporting policies and procedures. Vanderbilt generally agreed with our recommendations.

Significant Internal Control Weaknesses at School District of Philadelphia Persist and Result in Disclaimer of Opinion

OIG auditors found the records supporting two awards to the School District of Philadelphia (SDP) to be unauditible and therefore could not determine whether approximately \$13 million of direct and associated indirect costs and \$3.2 million of cost sharing claimed by SDP to NSF were allowable, allocable, and reasonable. This occurred because SDP failed to address significant internal control weaknesses in its financial management of NSF awards reported in a prior audit.

The auditors issued a disclaimer of opinion because they were unable to test material portions of SDP's grant and cost sharing expenses. Of the limited amounts the auditors were able to test, they questioned \$4 million, or 31 percent, of total costs SDP claimed to NSF. In addition, SDP did not have: 1) an adequate record retention and retrieval system; 2) an adequate system to account for, monitor, and report cost sharing; or 3) adequate policies, procedures, or a system for the monitoring and accounting of subawardee costs. SDP also did not track or monitor the costs it incurred for its grants by NSF budget category, as required. These deficiencies were cited in a January 2000 OIG audit report in response to which SDP indicated it had taken corrective action. In fact, the deficiencies had become more egregious over time.

Due to the significant and repetitive nature of the internal control weaknesses at SDP, OIG recommended that NSF make no future awards to SDP until NSF has verified that SDP has taken corrective action. We further recommended that SDP develop and implement the systems, policies, procedures, and plans needed to address all of its internal control weaknesses. SDP disputed all the findings and recommendations in the audit report but stated that since 2005 it has enhanced its policies and procedures and internal controls. We forwarded the audit report to NSF's Division of Institution and Award Support to resolve all questioned costs and to ensure corrective action on all internal control weaknesses.

Previously Identified Control Weaknesses Persist at WestEd

At NSF's request, OIG audited \$11 million of costs claimed by WestEd, a non-profit educational research organization, and identified four significant internal control weaknesses in WestEd's financial management that resulted in approximately \$1 million in questioned costs. Three of the four weaknesses were cited in prior OIG and OMB Circular A-133 audit reports.

The most serious deficiency cited was that WestEd did not adequately monitor subaward costs amounting to \$6.7 million or 61 percent of the total costs charged to the NSF award. This occurred because WestEd did not effectively implement the policies and procedures that it established in response to recommendations made in prior audit reports. In order to validate the subaward charges, the auditors performed additional audit work at subawardee locations to verify costs claimed, which resulted in approximately \$15,000 in overstated labor and indirect costs and misclassified travel costs. Required routine subaward monitoring could prevent or identify additional unallowable claimed subaward costs.

In addition, WestEd lacked adequate documentation to support its required cost sharing obligations, incorrectly recorded participant support costs, and erroneously charged unallowable sales tax on alcoholic beverages. As a result, WestEd could not adequately support \$1.25 million in cost sharing contributions that it claimed was provided by a third party, leading the auditors to question over \$988,000 of NSF-funded costs. Over \$7,000 in overstated indirect costs and sales tax costs were also questioned.

While WestEd indicated that it has made progress to develop improved control policies and procedures, implementation and adherence are needed to prevent continued reoccurrence of these problems. We have forwarded the audit report to NSF's Division of Institution and Award Support to resolve the questioned costs and ensure corrective actions.

NSF Contractor Overcharges Indirect Costs

An audit of four contracts with \$2.74 million in costs claimed in 2003 revealed that Abt Associates (Abt), a for-profit research and consulting firm, may be incorrectly recording \$2.5 million in employee pension costs resulting in overcharging indirect costs to its government contracts. Also, Abt changed its method of accounting for indirect costs without prior government approval. Both of these accounting issues are Cost Accounting Standard (CAS) violations that will be resolved by Abt's federal cognizant contracting agency, U.S. Agency for International Development (AID).

The audit was the second of a series of three audits that the OIG contracted with the Defense Contract Audit Agency (DCAA) to perform on costs that Abt claimed on NSF contracts for 2002 through 2004¹. DCAA qualified its opinion on the FY 2003 costs claimed because the CAS violations may result in additional questioned costs that cannot be determined until the issues are resolved. Finally, Abt did not include \$316,470 in its indirect cost allocation base for two indirect cost rates, which resulted in Abt overcharging NSF \$1,710 in indirect costs.

We suggested that NSF coordinate with U.S. AID to resolve Abt's CAS non-compliance issues and determine the amount of unallowable costs charged to NSF contracts. We forwarded the audit report to NSF's Division of Acquisition and Cooperative Support to resolve any questioned costs and ensure corrective actions are taken.

¹ We first reported on costs claimed in 2002 by Abt Associates in the September 2007 Semiannual Report, p. 16.

WHOI Claimed Employee Benefits Pension and Other Indirect Costs in Error

An audit of Woods Hole Oceanographic Institution's (WHOI) federal costs claimed for FY 2006 found that WHOI overcharged its customers approximately \$544,000 by including unallowable items in calculating its indirect cost rates. OIG contracted with DCAA to perform the audit, which was requested by NSF management. WHOI, a non-profit organization that manages and operates a number of research vessels and submersibles funded by NSF's Division of Ocean Sciences, incurred nearly \$102 million in costs on federal awards in FY 2006, \$59 million or 58 percent of which was provided by NSF.

The auditors concluded that WHOI properly charged direct costs to NSF awards using acceptable ship and submersible cost recovery rates. However, while WHOI correctly applied its fixed indirect cost rates to its federal awards, it improperly included approximately \$460,000 in unallowable pension costs and \$83,000 in unallowable software losses and social activity costs in determining two of its six indirect cost rates. As a result, WHOI overcharged its customers \$544,418 of which NSF was overcharged approximately \$315,762 on its FY 2006 awards.

We suggested that NSF coordinate with WHOI's cognizant federal agency, the Office of Naval Research, to ensure that WHOI records and claims pension costs and other unallowable costs in accordance with federal requirements. WHOI disagreed with most of the questioned costs. We forwarded the audit report to NSF's Division of Institution and Award Support for corrective action.

A-133 Audits

Single Audits Identify Material Weaknesses and Significant Deficiencies in 40 of 115 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, covered entities that expend \$500,000 or more a year in federal awards are required to obtain an annual organization-wide audit that includes the auditor's opinion on the entity's financial statements and compliance with federal award requirements. Non-federal auditors, such as public accounting firms and state auditors, conduct these single audits. The OIG reviews the resulting audit reports for findings and questioned costs related to NSF awards, and to ensure that the reports comply with the requirements of OMB Circular A-133.



This photo of pink jellyfish from the order *Stauromedusae* was taken during a research voyage on the WHOI vessel *Atlantis*.

In the 115 audit reports reviewed this period, covering NSF expenditures of more than \$4.4 billion during audit years 2004 through 2007, the auditors issued 12 qualified opinions on awardees' compliance with federal grant requirements, on their financial statements, or on both. In particular, the auditors identified 92 of the 165 findings (in 40 of the 115 reports reviewed) as material weaknesses or significant deficiencies, indicating serious concerns about the auditee's ability to manage NSF funds and comply with requirements of major grant programs. Not correcting these deficiencies could lead to future violations and improper charges. As detailed in the table below, the most common violations were related to financial and award management and indirect costs.

Findings Related to NSF Awards

Category of Finding	Type of Finding			
	Compliance	Internal Controls	Monetary	Total
Financial and Award Management	31	18	4	53
Salary/Wages	17	1	2	20
Fringe Benefits	3	1		4
Subawards	11	1		12
Procurement System	14	6		20
Equipment	10	1		11
Cost-Sharing			1	1
Indirect Costs	21	1	1	23
Property Management System	1			1
Other Direct Costs	2	1	3	6
Travel	5		1	6
Program Income	1			1
General Areas (Information Technology)		7		7
TOTAL	116	37	12	165

We also examined 54 management letters accompanying the A-133 audit reports. Auditors use these letters to identify internal control deficiencies that are not significant enough to include in the audit report, but which could become more serious over time if not addressed. The letters disclosed a total of 62 deficiencies that could affect NSF awards in areas such as tracking, managing, and accounting for NSF costs and segregation of duties.

Single Audits Continue to Have Timeliness and Quality Deficiencies

The audit findings contained in A-133 single audit reports help to identify potential risks to NSF awards and are useful to both NSF and the OIG in planning site visits, post-award monitoring, and future audits. Because of the importance of A-133 reports to the process of overseeing awardees, the OIG returns reports that are deemed inadequate to the awardees to work with their audit firms to take corrective action.

Of the 45 audit reports² we reviewed in which NSF was the cognizant or oversight agency for audit,³ 30 (67 percent) did not fully meet federal reporting requirements. For example, we found that 10 reports (22 percent) were submitted late or the audit reporting package was incomplete. Also, for 16 reports (36 percent), the Schedule of Expenditures of Federal Awards did not provide sufficient information to identify federal funds that were received via non-federal “pass-through” entities, and another 13 reports (29 percent) either did not include a corrective action plan or the plan was incomplete to address the audit findings. Eleven reports (24 percent) did not adequately identify the federal award to which the findings applied, the criteria or regulatory requirement upon which the findings were based, and/or the cause and effect of the findings.

In addition, eight of the 45 reports we reviewed (18 percent), or 8 of the 30 audit reports with timeliness and/or quality deficiencies (27 percent), involved repeat deficiencies which we had reported to the auditors and awardees during reviews of previous audits. In most cases, the repeat deficiency occurred because the auditors did not receive our letter before issuing the subsequent year’s audit. However, in one instance, the letter contained the same deficiency for the third consecutive year.

The OIG identified each of the potential errors and contacted the auditors and awardees, as appropriate, for explanations. In most cases, they provided adequate explanations or additional information to demonstrate compliance with the Circular, or the error did not affect the results of the audit. However, we rejected one report due to significant non-compliance with federal reporting requirements. We issued a letter to each auditor and awardee informing them of the results of our review and the specific issues on which to work during future audits to improve the quality and reliability of the report.

Improvements Ongoing in Response to National Single Audit Sampling Project

Last year, we reported on the results of the National Single Audit Sampling Project, issued by the IG community to assess in general the quality of the audits that are required by the Single Audit Act.⁴ The project found that 93 of 208 sampled audits were of limited reliability or unacceptable. The report made several recommendations to OMB, various federal agencies, and the American Institute of Certified Public Accountants (AICPA).

² The 45 reports were prepared by 30 different audit forms.

³ The “cognizant or oversight agency for audit” is defined as the federal agency which provided the largest amount of direct funding to an auditee. On a 5-year cycle, OMB assigns a cognizant agency for audit to auditees who expend \$50 million or more in federal funds in a year. On an annual basis, OMB assigns an oversight agency for audit to auditees who expend less than \$50 million in federal funds in a year.

⁴ September 2007 Semiannual report, p. 17.

In response to the findings and recommendations in the report, OMB has established eight workgroups, comprised of individuals from the IG community coordinating with taskforces established by the AICPA, to improve the quality and oversight of future single audits. The workgroups will revise appropriate sections in OMB Circular A-133, the OMB Compliance Supplement, and AICPA guidelines related to presenting audit findings documenting audit testing on internal controls and compliance with federal requirements, and developing and documenting audit sampling plans. Workgroups have also been established to develop a training curriculum for auditors who perform Single Audits; revise PCIE/ECIE standards for conducting initial reviews of the reporting package's completeness and compliance with Circular A-133 requirements, and quality control reviews of the auditor's workpapers in order to ensure uniform reviews by the federal community; and determine what sanctions and punitive actions are available to federal agencies in response to substandard audits.

NSF OIG staff are participating in the workgroup to revise the PCIE/ECIE standards for conducting quality control reviews, and have taken the lead on making revisions to the initial review checklist. OIG staff have also met with members of the AICPA Peer Review Board to discuss how initial reviews and quality control reviews of A-133 audits compare to the AICPA's own peer reviews. Several workgroups expect to issue exposure drafts of the proposed Circular A-133 changes for public comment in the Federal Register during the next semiannual period.

Audit Resolution

NSF Implements Recommendations to Enhance Stewardship of Research Center Programs

In late 2007, we issued an audit report on NSF's policies and practices to oversee and manage its eight research center programs. The report noted that while the National Science Board (NSB) and NSF senior management had issued a set of principles and general guidance that provided a broad framework to ensure effective management, oversight, and accountability for center programs, NSF program managers had not consistently implemented this guidance. Further, NSF lacked a formal mechanism for program managers to share information and best practices to enhance their management and oversight principles. Our report recommended that NSF incorporate the guidance into its formal policies and procedures and re-establish a forum for center program managers to discuss common issues and identify and exchange promising practices.

During this semiannual reporting period, NSF implemented both recommendations. In July 2008, NSF took action to implement our first recommendation by updating its *Proposal and Award Manual* to incorporate both the NSB principles and NSF Senior Management guidance regarding research center programs. NSF describes the guidance and principles as the framework and baseline for overseeing and managing center programs. It also states that, if program staff supplement this guidance when communicating it to their Center programs, the supplemental guidance should be documented in eJacket (NSF's electronic record system) and shared with NSF staff from other Center programs, as appropriate.

In the same month, NSF implemented the second recommendation by holding the first *Effective Practices Forum for the NSF Center Programs*. In this session, each of NSF's research center programs discussed its diversity goals, strategies for achieving these goals, and program achievements and concerns. NSF plans to hold four meetings each year to stimulate discussion and an exchange of information on effective practices for the management of research centers.

UCAR Agrees to Implement Corrective Actions

The University Corporation for Atmospheric Research (UCAR) has agreed to correct the significant internal control weaknesses in its purchase card program and employee timekeeping processes reported in our March 2008 Semiannual Report, but has not yet implemented all corrective actions.

The audit was initiated based on information developed during an OIG investigation of an employee's fraudulent use of a UCAR purchase card. The audit report noted that while the internal control structure for UCAR's purchase card program contained the basic elements of an effective internal control system, the controls were not always implemented or effective in preventing or detecting fraud. UCAR took immediate steps to address the weaknesses identified in the audit, including strengthening its procedures for supervisory review and approval of monthly billing statements and supporting purchase receipts. UCAR also agreed to perform random inventories on purchased items costing less than \$5,000, which are susceptible to theft, and to implement a timekeeping system that records all employees' hours worked and when they are on leave. It is in the process of identifying a system that will address these needs. Federal guidelines require grantees to have effective controls over government funds, and NSF is responsible for ensuring that corrective actions are satisfactorily implemented.

\$25,778 in Questioned Costs Sustained and Internal Control Weaknesses Corrected at the University of California, Berkeley

In our March 2008 Semiannual Report,⁵ we reported that the University of California, Berkeley (UCB) labor effort certifications did not always ensure that salary and wages charged to NSF awards reasonably reflected actual work performed on sponsored projects and identified a number of serious control weaknesses.

Since that audit, UCB instituted a new web-based effort reporting system and procedures that should correct most of the deficiencies cited in the report, including monitoring the certification of effort reports to ensure timely completion. UCB also added an internal control to ensure personnel certifying effort reports are in a position to know whether work was actually performed and benefited NSF's awards. In addition, the University strengthened its training program on effort reporting and agreed to perform independent evaluations of the effort reporting system every three years to ensure it meets federal and NSF requirements. NSF sustained all of the \$25,778 in questioned costs and has verified with the Division of Financial Management that UCB has repaid the entire amount in two payments received in April and June 2008.

⁵ March 2008 Semiannual Report, pp. 15-16.

Non-Profit Requested to Record Actual Indirect Costs in Its Accounting System to Properly Report the Full Cost of Its Operations

The March 2008 Semiannual Report,⁶ discussed two reviews of Bermuda Institute of Ocean Sciences' (BIOS) accounting system and costs claimed on four awards. Those reviews found that BIOS did not comply with a federal requirement to use actual rather than budgeted indirect cost rates to close out and recognize its final costs in its accounting records. As a result, BIOS may not be recovering the full cost of its operations. The possible underbilling of expenses, coupled with increased costs that BIOS incurred for an expanded research program, could impact BIOS' ability to operate without additional funding, cost reductions, or increased revenue.

NSF agreed that BIOS' current accounting practices could potentially lead to under-billing its federal funding agencies and encouraged BIOS to consider the use of the NSF negotiated final rates to close its accounting records at year-end to reflect its actual indirect costs. Also, in response to OIG concerns about the financial stability of BIOS, NSF reviewed BIOS' FY 2006 financial statement and noted increases in property, plant and equipment assets and increases in revenue from investments and outside party contributions. NSF stated that it will monitor BIOS' 2007 financial statements when negotiating its next indirect cost rate proposal.

NSF Sustains \$173,663 of Questioned Costs Due to Significant Internal Control Weaknesses at University

An audit of three awards amounting to \$9.4 million to the University of Maryland Baltimore County (UMBC) found serious internal control deficiencies, including inconsistent adherence with UMBC's own established financial management practices, as reported in our September 2007 Semiannual Report.⁷

In submitting costs to NSF for reimbursement, auditors found that UMBC staff: 1) did not always follow the University's cost accounting procedures to ensure that costs were accurate, allowable, and allocable; 2) did not always monitor the subaward costs and cost sharing as required; and 3) did not have adequate procedures to detect errors in the amount of indirect costs it claimed. These internal control deficiencies resulted in \$174,655 of erroneous costs billed to NSF grants that the auditors questioned.

During the resolution process, UMBC submitted documentation supporting corrective action it has taken, including the reorganization of UMBC's Office of Sponsored Programs and Office of Contract and Grant Accounting. UMBC is also 1) establishing grant compliance review procedures; 2) providing training programs on proper federal award management; 3) developing a new subawardee fiscal monitoring plan; and 4) developing procedures for the review and recalculation of indirect costs. NSF sustained \$173,663, or 99 percent, of the questioned costs.

⁶ March 2008 Semiannual Report, p. 19.

⁷ September 2007 Semiannual Report, pp. 16-17.

SRI Improves Licensing and Reporting Activities for Radar Project

As reported in our March 2008 Semiannual Report,⁸ a financial audit of \$30 million of NSF funded costs incurred under a cooperative agreement with SRI International (SRI) found that SRI had failed to renew licenses timely and submit completed reports to Canadian authorities for the Advanced Modular Incoherent Scatter Radar (AMISR) project. In addition, SRI did not keep Canadian authorities fully apprised of the scientific research activities performed on the AMISR project through its annual license renewal reporting process, or obtain NSF review and approval of all agreements with the Canadian authorities as required by the agreement.

The noncompliance with the requirement to maintain timely license renewals was caused by SRI's lack of a written policy and procedure for obtaining scientific license renewals, and its lack of understanding of the license renewal process and requirements. In response to the recommendations, SRI has obtained a current scientific license to conduct research for the project, and established procedures for the renewal of the research license and submission of the annual report to the local government. In addition, SRI has developed a tracking system to identify project requirements and due dates to coordinate licensing and reporting actions with NSF program officials.

NSF Errors and Contractor Cost Overruns Result in \$231,838 of Questioned Costs

In March 2007⁹, we reported on an audit of \$4.8 million in claimed costs on an NSF contract with Temple University to provide technical evaluation support for NSF's Division of Research, Evaluation and Communication. The audit questioned \$230,291 in costs claimed in excess of the authorized contract funding and \$1,547 was for unallowable alcoholic beverages.

Although NSF had prepared a modification to increase the award by \$175,000, it did not sign the award document that provided additional funding to Temple. Therefore, the auditors could not verify that NSF had actually approved the increased funding. The missing NSF approval on the modification document, coupled with an additional cost overrun of \$55,291 resulted in the auditors questioning the \$231,838.

During audit resolution, NSF determined that it had received benefit from the services Temple University performed and therefore allowed all of the extra costs. To correct the contract administration lapses, NSF executed a new contract modification that provided the funding for Temple for all the contract costs, except for the \$1,547 in unallowable alcohol expenses. In addition, NSF, in its newly issued Contracts Award Manual, included requirements for the Division of Acquisition and Cooperative Support staff to complete a distribution checklist and ensure that all award documents are signed, provided to the contractor, and retained in the official contract file.

⁸ March 2008 Semiannual Report, pp. 18-19.

⁹ March 2007 Semiannual Report, p. 17

NSF Sustains \$320,418 in Questioned Costs and \$25,074 in Penalties

An audit of two NSF contracts with Compuware Corporation totaling \$28.2 million over four years to provide information technology support services to NSF resulted in questioned costs of \$320,418 because Compuware incorrectly included direct costs in the overhead pool and claimed unallowable costs for gifts, contributions, parties and picnics.¹⁰ The auditors reported that the questioned unallowable costs were subject to penalties and calculated the amount to be \$25,074. NSF resolved this audit by implementing all of the auditor's recommendations, including sustaining all of the questioned costs and agreeing to assess the penalties at the close of the applicable contract. NSF also obtained Compuware's agreement to review and revise two subsequent years' cost submissions to ensure that the same type of mischarges were not included, and required Compuware to revise its policies and procedures to prevent recurrence of similar problems on the ongoing contract.

Work in Progress

The OIG Continues to Review Labor Effort at Universities

As noted in prior Semiannual Reports,¹¹ the OIG is conducting a series of reviews to assess the adequacy of accounting and reporting processes for labor costs at NSF's top-funded universities. Approximately, one-third of all NSF funds provided to universities are for salaries and wages, amounting to more than \$1.2 billion annually. As of September 30, 2008, we have completed six audits and have six more currently in progress that are expected to be completed early next year. The objectives of these audits are to evaluate whether the universities' internal controls are adequate to properly manage, account for, and monitor salary and wage costs and to determine if these costs are allowable in accordance with federal cost principles. In 2009, we plan to initiate four additional audits, bringing our total work in this series to 16 audits. At that point, we will assess the need for additional reviews of university labor effort.

NSF's Audit Resolution Process

We are continuing our audit of the process NSF follows to resolve the findings and recommendations of OIG and A-133 single audits conducted of NSF award recipients. Our objective is to determine whether NSF has adequate policies and procedures for resolving and closing out the audit recommendations, and whether NSF implements the policies and procedures effectively and timely. To address the objective, we are evaluating NSF's resolution actions for a statistically representative sample of audits issued during the period FY 2003 through FY 2007. We anticipate completion of this audit in early 2009.

¹⁰ March 2007 Semiannual Report, p. 17.

¹¹ September 2005 Semiannual Report, p. 20.

CIVIL & CRIMINAL INVESTIGATIONS

University Returns \$283,488 in Misused Grant Funds; NSF Declines to Take Action Against the PI

A university returned \$283,488 in NSF grant funds that were improperly charged over a five-year period by a PI with personal issues. OIG initiated an investigation based on anonymous allegations that a PI at a Tennessee university misused NSF grant funds by submitting extravagant travel reimbursement requests and questionable supply expenses. A detailed review by our investigators and university auditors and found that some of the travel expenses submitted by the professor were unreasonable, and approximately \$3,000 in purchases appeared to be personal in nature. The university's internal audit department assisted us in resolving these allegations.

We interviewed the PI, who provided a sworn statement admitting that she submitted receipts for non-grant-related purchases totaling \$3,000. The PI explained that, when these questionable receipts were submitted, she was experiencing very difficult personal issues. She also stated that she often submitted receipts and travel vouchers weeks after her return from travel and would frequently guess at the nature of the receipts since she could not recall the actual expenditures.

The university's detailed review of over \$2 million in grant charges found that, over a five-year period, \$283,488 was wrongfully charged to the PI's NSF grants. The university determined that many of these unallowable charges were not prevented because administrators at the PI's department were concerned for the PI's well being, and did not stringently supervise her use of grant funds. The university returned \$283,488 to NSF. The PI, who was also the co-PI on another NSF grant, had taken a leave of absence from the university prior to our investigation, and subsequently resigned from the university during the investigation.

The U.S. Attorney's Office declined prosecution based on the burden to prove beyond a reasonable doubt that the PI knowingly and willfully submitted false claims to NSF grants. However, our investigation found that the PI submitted excessive and unreasonable expense claims against NSF grants, misrepresenting the expense claims as a result of grossly negligent behavior. Consequently, we recommended that NSF take administrative action to limit the financial responsibilities that the PI is permitted to assume on future NSF grants. Even though it routinely takes administrative actions against individuals (e.g. research misconduct sanctions and debar-

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ment), NSF declined to take action in this case based on the fact that the PI is no longer associated with the university and NSF's observation that it "makes awards to institutions and not to individuals." Though the PI is not currently associated with any NSF grants, OIG recommended administrative action as a safeguard against the probability that the PI will resume her research career at another institution with projects supported by NSF.

Subject Pleads Guilty to Impersonation of an NSF Official

We received an allegation that a subject pretended to be an NSF official to lure young women to hotel rooms to carry out "research" supported by NSF. We investigated and determined that over 3½ years, the subject placed two dozen advertisements on the internet recruiting people to help with a spurious "research" project in San Francisco. The subject only responded to inquiries from mid-20's female victims, to whom he sent multiple emails identifying himself (with a false name) as an NSF official. He also prepared and sent the victims numerous electronic copies of elaborate "research" instructions, into which he inserted NSF logos to create the appearance of official NSF documents.

The subject (posing as an NSF official) ultimately persuaded two victims to meet a "patient" (the subject) in a hotel room, and once there to follow instructions to direct, observe, and record him engaging in a variety of salacious activities. Before the sessions began, the subject required the victims to sign a bogus NSF non-disclosure agreement, threatening that NSF would take "legal or equitable" action against them if they were to disclose anything about their activities. Despite the subject's intimidation, two of the victims contacted NSF, which referred the information to us for investigation.

OIG investigators interviewed the subject, who denied everything. We referred the matter to the DOJ Criminal Division, and proceeded to issue several subpoenas for information about the subject's activities. Under the Right to Financial Privacy Act (RFPA) his attorney challenged the subpoena for his credit card records. We successfully opposed the RFPA challenge and the court ordered the bank to produce the records.

Ultimately, the subject agreed to plead guilty of one count of violation of 18 U.S.C. § 912, False Personation of an Officer or Employee of the United States, a felony. The subject pled guilty in the U.S. District Court for the Northern District of California on 18 April 2008, and he is scheduled to be sentenced on 14 November 2008.

NSF Agrees to Restrict Use of NSF Logo

Since the inception of our office in 1989, we have investigated a number of cases of misuse of NSF's logo. In every case, the subjects used the NSF logo to add verisimilitude to their impersonation of NSF officials or researchers affiliated with NSF. The case discussed on this page is the most serious. In another case, a person used the NSF logo to fabricate faux NSF letterhead, in order to represent that a NASA entity was an NSF-funded awardee entitled to discounted computer prices. He later pled guilty to a federal misdemeanor charge. Yet another individual created a website called NSFfunding.com with the NSF logo on every page, claiming that he

was acting at NSF's behest to investigate wrongdoing by numerous officials conspiring to squelch his research findings. The Department of Justice (DOJ) contacted the web host, with the result that the website was removed and DOJ declined further prosecution.

NSF makes various versions of its logo available on its website, without any restrictions on its use. Misuse of federal agency logos potentially violates three federal criminal statutes, and misuse of the logo to support the impersonation of a federal official also violates the criminal false personation statute. While nothing on NSF's website implied that it was acceptable to use NSF's logo to misrepresent employment by or affiliation with NSF, we recommended that NSF clearly prohibit such misuse, while specifying what use is appropriate. NSF agreed in principle, conducted a review of its logo usage policies, drafted a logo usage guide, and plans to post this guide on its website within the next few months.

Former Research Center Employee Sentenced to 32 months in Federal Prison

As reported previously,¹² on March 5, 2008 a former accountant at a Georgia state university was indicted in the U.S. District Court for the Northern District of Georgia on 17 counts of mail fraud and 5 counts of theft from an organization receiving federal funds, 18 U.S.C. §§ 1341 & 666. On May 13, the accountant pled guilty to all of the charges, and in August 2008, a federal judge sentenced her to federal prison for 32 months, 3 years supervised probation, 250 hours of community service, and payment of restitution and fees totaling \$319,074.

NSF Imposes Three-Year Debarment for Felony Conviction

NSF debarred a former professor at a Tennessee university for a period of three years based on her conviction for making false statements to pay expenses related to a personal consulting contract. As previously reported,¹³ the professor admitted that she was responsible for charging the personal expenses to NSF grant accounts and university accounts as legitimate expenses. We recommended that the professor be debarred for five years.¹⁴

NSF Debars Two Former Employees of DC Institution for Criminal Convictions for Abusing Purchase Cards

As previously reported,¹⁵ OIG recommended that NSF debar two former accounting managers at a local grantee institution who were convicted for engaging in a scheme to use official corporate purchase cards to pay for unauthorized personal expenditures exceeding \$100,000 each. Though they did not embezzle federal funds, they were both responsible for management and oversight of federal and non-federal funds. Moreover, their job histories made it reasonable to expect that they will seek similar positions accounting for federal funds in the future. NSF accepted our recommendation and debarred each

¹² March 2008 Semiannual Report, pp.27-28.

¹³ September 2007 Semiannual Report, p.25.

¹⁴ March 2008 Semiannual Report, p.30.

¹⁵ March 2008 Semiannual Report, p.29.

individual for a period of 3 years. Also, since this was the fourth embezzlement case involving this institution, we recommended that NSF designate it a high-risk institution, which it agreed to do.

Institution Returns Funds and Commits to Compliance Program

An institution in Colorado returned \$27,258 to NSF as a result of our investigation of its award. OIG identified the award as part of an investigative proactive review of awards with substantial participant support cost allocations in the NSF award budget. The institution expended funds on unallowable expenses, including alcohol for workshop participants; reallocated participant support funds to cover employee salaries without the required prior, written NSF approval; and charged the NSF award for indirect costs, even though the NSF award letter expressly excluded indirect costs. We referred the matter to the U.S. Attorney's Office, whose negotiations with the institution resulted in a refund of \$27,258 to NSF with an assurance from the institution that should it ever receive federal funds in the future, it will have a compliance program consistent with the principles found in the Federal Sentencing Guidelines.¹⁶

ADMINISTRATIVE INVESTIGATIONS

Closer Scrutiny of NSF Senior Management Travel Warranted

A series of anonymous letters were sent to NSF employees and members of the scientific community alleging that an NSF senior manager (subject) was misusing NSF travel funds. Based on a review of his travel records and emails, as well as two interviews with him, we determined he based NSF-funded travel decisions, at least in part, on his desire to further personal relationships with women, some of whom were affiliated with NSF. In addition, we found that he lacked candor during the investigation by providing false or misleading information. We referred the matter to NSF with a recommendation that NSF take appropriate administrative action with regard to the subject.

Based on this case and another travel abuse case involving two senior NSF officials that we are continuing to investigate, we also recommended that NSF reiterate and reinforce its expectation that senior managers should act with the

highest level of integrity; develop, and issue policies clearly defining personal and essential travel; and institute an annual training program to ensure travel policies are articulated to all NSF employees. NSF's response is pending.

Multiple Instances of Employee Abuse of NSF IT Resources Leads to Discipline and Recommendations to NSF for Policy Changes

OIG recommended that NSF take immediate action to address numerous reports of employees viewing pornography on their government computers. The multiple investigations opened in the past few months, highlighted the need for systemic corrective actions in order to reduce abuse of agency IT resources

¹⁶ The principles for establishing an effective compliance program that are found in the Federal Sentencing Guidelines, were discussed in the September 2007 Semiannual Report, p. 28.

and waste of official time. They also highlighted NSF's need to increase the visibility of NSF's Office of Equal Opportunity Programs (OEOP) in order to facilitate employee access as co-workers encounter IT abuse in the workplace and to improve the agency's internal response mechanism. These recommendations stem from the following recent abuse investigations: six cases of viewing, downloading, saving, and/or sharing pornographic images and videos, and one case of extensive participation in pornographic chat websites and the concomitant significant waste of official time. NSF's policy on the personal use of NSF IT resources states that the resources:

are authorized for occasional personal use (excluding private business use) when the additional cost to the government is negligible and when the personal use is of reasonable duration and during personal time as much as possible so there is no interference with official business. Employees should consult with their supervisor if there is any question about "occasional" use or "negligible costs." Any personal use of the agency's property is subject to the overriding expectation that employees will give the government a full day's labor for a full day's pay. . . . Employees may make use of the Internet and electronic mail for matters that are not official business provided that . . . the use is not offensive to coworkers or the public (such as sexually explicit or otherwise inappropriate web sites)...

All NSF employees are required to complete IT Security Awareness Training annually. That training reiterates the agency policies concerning the use of government equipment and resources. In addition, NSF's Ethics and Personnel Manuals emphasize the duty of employees to behave ethically and "to adhere to basic standards of integrity and decency." In each of the following cases, we referred our findings to NSF with a recommendation that it take appropriate administrative action, and NSF responded to our referrals as noted below.

- We received information that an NSF senior official was viewing sexually explicit material on his NSF computer in violation of NSF's computer use policies. We determined that, for the past two years, the employee had been repeatedly and excessively visiting pornographic websites and spending up to 20 percent of his official work time viewing sexually explicit images and engaging in sexually explicit on-line "chats" with various women. Based on the employee's salary we identified a potential loss of more than \$58,000 in employee compensation for that personal time.

When interviewed, the employee acknowledged using his NSF computer to visit pornographic websites and admitted that he spent excessive time chatting with women at the sites during official government work hours. We determined that the employee charged more than \$40,300 to his personal credit card over 24 months to cover the cost of participating in these on-line chats. We concluded that the employee's activities adversely affected the workplace making it offensive and hostile. In response to our referral, the agency issued the employee a Notice of Proposed Removal, and then a Notice for Removal, after which he left NSF.

- An NSF staff member reported that sounds overheard from a co-worker's computer speakers suggested that the employee was viewing pornographic videos. We reviewed the employee's NSF computer drives and found no evidence that the employee saved inappropriate images or videos. However, we determined that the employee used his NSF computer to visit a variety of pornographic websites on numerous occasions during official work hours. We concluded that the employee's perusal of such websites during work time violated NSF policies. NSF action is pending.
- We substantiated an allegation that, an NSF employee continued to store sexually explicit image files on his NSF computer despite having previously received an official letter of reprimand for similar activity and for using peer-to-peer software on his NSF computer,. We determined that the employee also sent emails containing sexually explicit images and videos from his NSF email account and—even after learning about our investigation—continued to visit inappropriate, sexually-explicit sites during his official work day. NSF action is pending.

Because of the number of inappropriate use cases that were investigated by OIG, we selectively sampled only one of NSF's numerous network drives for large files and reviewed a limited number of these files to see if we could determine if employees were violating NSF's computer use policies. We identified:

- An NSF employee whose network drive contained numerous sexually explicit image files. The employee acknowledged that accessing such files was in violation of NSF's computer use policies. NSF's action is pending.
- An NSF employee who violated NSF's computer use policy by downloading and storing inappropriate images on her NSF computer drive. When interviewed, the employee explained that these files were mistakenly downloaded along with other image files. We determined that the employee violated NSF policies and referred the matter to NSF for action. NSF verbally reprimanded the employee.
- An employee whose network drive contained numerous sexually explicit media files, two copies of peer-to-peer file sharing software, and website favorites (bookmarks) with sexually descriptive titles. The employee acknowledged saving the sexually explicit files on his network drive and having peer-to-peer software. Based on our referral, NSF suspended the employee for 10 days.
- An employee¹⁷ who violated NSF computer use policies by downloading a large number of sexually explicit media files. We referred the matter to NSF for appropriate action, which resulted in the employee serving a 10-day suspension.

While these cases show that such misbehavior occurs at NSF, the limited nature of this sampling and its restriction to only one computer drive (and excluding other systems like e-mail) cannot measure the actual extent of such misbehavior at NSF. More importantly, these instances of misconduct occurred despite the fact that each of the subjects had completed years of mandatory

17. Initially reported in our March 2008 Semiannual Report, p.30.

NSF annual IT Security Awareness Training, which discusses the appropriate use of NSF resources and provides specific examples of inappropriate use. These cases do call into question the efficacy of that training as a deterrent to resource abuse and misconduct, and as a means for communicating to NSF employees the acceptable uses and restrictions NSF places on its computer and communications resources.

Our small sampling of this single network drive for employees found that although NSF policy allows *de minimus* personal use of government computers, NSF has failed to identify or enforce any upper limit on such use. NSF data showed that the top 10% of employee network drive users stored from 11 to 62 *gigabytes* on this drive. Further, when we looked at storage of only media files (audio, video, or image) on this drive, the storage by the top 1% of employees contained 2.7 to 43.5 *gigabytes* of data. Unlike many federal agencies, NSF did not have internet filtering software to block access to inappropriate websites. In conjunction with our review, the agency has now installed filtering software.

Our review also suggested that coworkers who inadvertently encountering explicit images and sounds were acutely embarrassed and did not know how to immediately respond. We found information on how to address negative worklife situations at NSF hard to find. Employees should be encouraged to contact the Office of Equal Opportunity Programs (OEOP), if they encounter behavior that makes them uncomfortable. At the time of review, it was even difficult to find electronic links to OEOP on NSF's external internet and internal intranet websites.

To limit future occurrences of this type of abuse, we recommended: 1) changes in NSF's IT training; 2) limitation of server storage available to employees; 3) routine screening for and deletion of personal music and image files from network drives; 4) procurement of necessary filtering software; and 5) increased visibility of OEOP and enhancement of access to its website.

In response, management has now installed filtering software but informs OIG it will not monitor either unsuccessful attempts by users to access inappropriate sites or the existence of inappropriate content on NSF servers. It is considering ways to improve its IT Security Training, but declines to limit the electronic storage space available for employee personal use because such storage is inexpensive (even though employees do not need such quantities for business use). NSF stated that it has corrected the staffing information on the OEOP website, corrected broken electronic links to OEOP, and that it plans to improve

access to and the visibility of OEOP. It also plans to evaluate its EEO training to ensure that all managers and staff are aware of the relevant policies and procedures. Finally, it has recently reissued its Personal Use Policy with explicit statements about liability for abuse.

Other Significant Investigative Activities

The following cases were resolved without referrals to the Department of Justice because the institutions voluntarily returned funds they deemed to be mischarged:

- OIG received an allegation of erroneous salary charges to an NSF award at a university in North Carolina. Documents provided by the university revealed a high incidence of a failure to comply with NSF's "two-ninth's rule." This rule states that, during summer months, a researcher may not receive, from all NSF sources, more than two-ninths of his/her base salary. We requested that the institution conduct a university-wide audit to assess the degree to which this NSF rule was violated. The university concluded it had mischarged over \$250,000 to NSF awards, which the university reimbursed or credited back to active NSF grants.
- We found that a for-profit company in New York overcharged NSF \$12,726, due to its use of an inflated indirect cost rate. Initially, there was suspicion that the overcharges were a deliberate overbilling of a PI's time, but our investigation concluded that the overcharging was a mistake and the company returned \$12,726 to NSF.
- Our investigation into a Maryland university's misuse of participant support funds resulted in the university's reclassification of \$7,400 in questionable costs and a refund of \$2,300 to NSF for unallowable costs related to alcohol purchases. The university also implemented new guidelines and training for all departments to better manage sponsored awards.
- A Georgia institution returned \$4,666 to NSF in undocumented and/or improperly claimed costs as a result of our investigation of numerous allegations involving a closed NSF award. The initial allegations also included failure to provide the required cost sharing, which were found to be untrue. However, we noted that the university failed to provide annual certifications for its cost sharing commitment as required explicitly in the terms of the award. We informed the institution of our findings about its inconsistent record retention practices and referred our concerns about their internal controls to our Office of Audit.

OIG Recommends NSF Improve Information Provided to Determine Conflicts of Interests

OIG regularly receives allegations of conflict of interests (COI) violations regarding NSF's merit review process. In the course of resolving recent complaints, we noticed an inconsistency in how NSF handles COI disclosures for *ad hoc* (i.e., remote) reviewers and COI disclosures for panelists (on-site reviews). Panelists are given a COI briefing before discussing proposals. In addition, panelists are given a form which provides examples of what may constitute a COI and asks them to review the list of potentially conflicting affiliations and relationships and to certify that they have none.

In contrast, *ad hoc* reviewers are asked within FastLane, to describe any affiliation or financial connection they may have with the particular proposal. There is no guidance or examples provided in FastLane for the *ad hoc* reviewer as to what may constitute a potential affiliation or financial COI. This lack of information for *ad hoc* reviewers creates a situation in which NSF may not be informed of potential COIs that would taint NSF's merit review. The National Institutes of Health's (NIH's) proposal review process provides both panelists and *ad hoc* reviewers with a form that details COI concerns and provides examples of potential COIs.

We recommended that NSF: (1) make minor changes to its COI form by (i) including in the certification language that reviewers have disclosed all COIs and (ii) incorporating a legal warning about the consequences of violating the certification; (2) incorporate more helpful information for *ad hoc* reviewers, and provide an improved form in FastLane that requires *ad hoc* reviewers to check a box indicating their certification before having access to proposals; and (3) better inform its community and its program officials about COIs by creating a COI FAQ web page and creating web-based tutorials for both PIs and NSF program officials. After receiving an extension, NSF provided its response to our recommendations after the end of the semiannual period. We will discuss it in the next Semiannual Report.

Proper Scholarship and Attribution

Our office has recently observed an increase in research misconduct allegations involving inaccuracies in data, especially as they are presented in figure form. We have seen several cases where PIs have not made clear the full details of how an image was constructed, such that it can deceive the reader as to what the figure actually represents. Simultaneously, we have seen an increased awareness by professional journals clarifying their expectations with regard to data presentation, particularly images. While NSF's *Grant Proposal Guide (GPG)* explains that NSF expects strict adherence to the rules of proper scholarship and attribution, the current guidance is silent concerning the scholarly presentation of data, figures, graphs, and images.

We recommended NSF change the language in the *GPG* to alert PIs to its expectation that they prepare proposals with at least the same care as they would a peer reviewed publication as well as to clarify to PIs that the expectation applies to text, data, figures, and images. NSF proposed changes to the *GPG* language to ensure that readers understand that fabrication and falsification, as well as plagiarism, are research misconduct. The *GPG* will clearly state that NSF expects strict adherence to the rules of both proper scholarship and attribution in submitted proposals.

RESEARCH MISCONDUCT INVESTIGATIONS

Actions by NSF Management

NSF Debars PI for Plagiarism and Abuse of NSF's Peer Review Process, and University Adopts New Research Misconduct Policy

An OIG investigation into an allegation of plagiarism, determined that a PI from a South Carolina university, plagiarized material from a proposal he received from NSF for peer review into his own NSF proposal. Our initial assessment of the proposal indicated that it contained text copied from three internet sources and a substantial amount of text copied from a confidential proposal the PI had peer reviewed a year earlier. Because the proposal with plagiarized text was highly rated and likely to soon be funded, we immediately interviewed the PI, who admitted keeping a copy of the reviewed proposal and plagiarizing from it in the preparation of his proposal. Regarding the material copied from the internet sources, he acknowledged copying a small amount, saying his students had provided him with the bulk of that material. He withdrew his pending NSF proposal.

We referred the allegation to his university for investigation. Since the PI admitted to copying, the university concluded that the PI plagiarized and no investigation was necessary. Its investigation report was poorly written and did not address specific questions we asked the committee to answer. We notified the university that we could not accept its report and would conduct our own investigation.

Based on a review of all the facts, our investigators concluded that the PI purposefully plagiarized a substantial amount of text from the confidential proposal he reviewed, and knowingly plagiarized a small amount of text from one internet source. The Deputy Director: made a finding of research misconduct; debarred the PI for 1 year; required the PI to provide certifications for 3 years after the debarment; and prohibited the PI from reviewing proposals for 3 years.

Both the university and the PI used this experience as an opportunity to learn and make improvements. The university wrote and implemented a new research misconduct policy to facilitate better investigations, appointed a Research Integrity Officer, and strengthened its ethics center. The PI and his graduate students voluntarily completed a research ethics course and a separate course on plagiarism. The PI has worked within his department to raise awareness of plagiarism.

OIG Disagrees with Institution Regarding Severity of PI's Plagiarism

A PI from an Illinois institution plagiarized text and citations from multiple source documents into four NSF proposals. Our office initiated an inquiry based on an allegation that a PI plagiarized into three proposals. During the inquiry, the PI stated he had permission to use some of the text, and he claimed he had not paid close attention to work by his students that he incorporated into some of the proposals. We were not persuaded by the PI's explanation of events, and decided to refer the investigation to his institution.

The institution's inquiry committee reviewed the matter and determined there was no misconduct because: 1) the plagiarism was in the background section of the proposals; 2) none of the proposals was funded; 3) the PI admitted his mistake; and 4) the PI had received permission, albeit after the fact, to use much of the material. The institution counseled the PI, closed the case, and recommended no sanctions be imposed.

After carefully reviewing its report, we determined that the institution's inquiry was not sufficiently thorough. The committee did not verify the PI's explanation that he used his students' project reports in copying the material, and it did not look into what the PI told the authors of some of the source documents when he sought and received after-the-fact permission to use their text.

We initiated our own investigation, and discovered a fourth proposal that contained a significant amount of copied text, which the PI also failed to adequately explain. We contacted the authors of two source documents that according to the PI, had given him after-the-fact permission for him to use portions of their text. Both authors responded with deep concern and surprise at the amount of copied text involved, and both said that the PI had not adequately described the full degree of copying.

We concluded that the PI committed research misconduct when he plagiarized text in four NSF proposals. NSF agreed with our recommended finding, debarred the subject for one year, required certifications and assurances for 3 years, barred him from peer review for 3 yrs, and required him to complete a course in research ethics.

PI Plagiarizes from His Doctoral Student's Fellowship Proposal

A Utah university received an allegation that a professor took an unfunded postdoctoral fellowship grant his former doctoral student wrote, copied the text, made a few minor changes, and submitted the proposal to NSF as sole PI. The professor's proposal, which was funded by NSF, did not acknowledge the student, and the student was apparently unaware of its submission. The university's inquiry concluded a full investigation was warranted.

The university's investigation committee found a preponderance of the evidence proved the subject recklessly plagiarized the student's words. The committee, however, found insufficient evidence to substantiate the allegation of intellectual theft. The subject resigned from the university and the university took no further action. The university terminated the award prior to the expenditure of any funds, and NSF was able to put the \$120,000 to better use.

As a part of our investigation, the subject provided evidence that some of the text within the NSF proposal was also included in a paper jointly authored by the subject and the graduate student. This slightly mitigated the severity of the subject's actions. However, we concurred with the university's findings and recommended that NSF: 1) make a finding of research misconduct against the subject; 2) send the subject a letter of reprimand; 3) require certifications and assurances for 2 years; and 4) require certification of attending an ethics class. The Deputy Director concurred with our recommendation to make a finding of research misconduct and required the subject to attend an ethics class.

PI Copies Text from Anonymous Peer Reviews into his Proposal

OIG received an allegation that an assistant professor at a North Dakota university submitted a proposal containing plagiarism. Our inquiry determined that a couple of pages of text were identical to material from 13 sources within 3 declined proposals. Four of the sources from which the subject allegedly copied text were anonymous peer reviews by NSF reviewers.

We referred the allegation to the subject's university for investigation. The university's investigation committee concluded a preponderance of the evidence proved the subject knowingly committed plagiarism, and the university imposed a variety of administrative actions on him. We concurred with the university's findings and recommended that NSF: make a finding of research misconduct against the subject; send the subject a letter of reprimand; require certifications and assurances for 2 years; and require certification of attending an ethics class. NSF's Deputy Director concurred with our recommendations.

Research Misconduct Findings Made Against New Faculty Member and a Graduate Student

NSF's Deputy Director took action on two cases reported in previous Semiannual Reports in which we recommended that NSF make a finding of research misconduct. The first involved a new faculty member at a Pennsylvania institution who plagiarized text into his first NSF proposal.¹⁸ The Deputy Director applied the following sanctions: issued a letter of reprimand notifying the faculty member of the finding of research misconduct; required completion of an ethics course; required certifications and assurances for 2 years; and barred the faculty member from serving NSF in an advisory capacity for 2 years.

In the second case, a masters student at a Washington university fabricated data in her thesis while receiving NSF funds.¹⁹ The Deputy Director: issued a letter of reprimand containing a finding of research misconduct; proposed debarment for 3 years; required certifications and assurances for 3 years following the debarment; required completion of an ethics course covering the proper handling of data; and banned the student from serving NSF in an advisory capacity for 3 years.

Research Misconduct Reports of Investigation Forwarded to NSF Management

In each of the following cases, OIG has forwarded a report of investigation with recommendations that NSF's Deputy Director make a finding of research misconduct and take appropriate administrative actions. The Deputy Director has not yet acted on our recommendations.

¹⁸ March 2008 Semiannual Report, pp.33-34.

¹⁹ March 2008 Semiannual Report, p.33.

Student's Plagiarism Adversely Affects the Careers of Mentors in Two Countries

A foreign doctoral student at a Washington state institution, published a paper derived from his graduate research in an online journal but omitted any reference to or acknowledgement of his co-author and faculty doctoral advisor, who was the PI on the NSF award that supported the research. Further, the student entered data related to the research in an online database, again without acknowledging the PI.

Seeking to interview the student, OIG was informed by the U.S. institution that he had abruptly quit its doctoral program and returned to his home country. Once there, the student rejoined the laboratory of his Master's advisor. Shortly thereafter the student published an article, identifying himself, his Master's advisor, and four other home country scientists as authors. He also entered the data in an online database, attributed to his Master's advisor. In fact, the data had been gathered in the PI's laboratory and none of the named coauthors had participated in the research. Once informed about this, the Master's advisor ensured the paper and data were withdrawn.

OIG referred both the inquiry and subsequent investigation to the U.S. institution. It concluded that the student and his Master's advisor shared responsibility for the student's actions. However, as part of our subsequent investigation, we determined that the U.S. institution's investigation had not considered key evidence that was inexplicably omitted from its review of the PI's computer documents. The evidence substantially invalidated the committee's conclusions and appeared to absolve the advisor from any responsibility. Unfortunately, the U.S. institution had already provided its report to the Master's advisor's institution, which reprimanded him, restricted his access to institution grant funds, and dismissed the student from the institution.

At our urging, the U.S. institution rescinded the findings of its first investigation, informed the Master's advisor's institution, and initiated a new investigation. It recused its Research Integrity Officer to ensure the complete objectivity of the second effort. The absence of the key evidence in the PI's possession suggested that he may have tried to mislead the first investigation committee. As a result, the institution initiated a separate inquiry into the PI's actions.

The U.S. institution's second investigation was thorough and complete, and concluded that the graduate student alone was responsible for the plagiarism. Its inquiry into the PI's actions showed that the institution had failed to gather all relevant available electronic information from the PI's laboratory. We concurred with both conclusions and determined that if the PI had been more forthcoming with information, the first committee might have relied on the correct evidence in reaching its conclusions.

We consider the student's actions to be among the most egregious acts encountered in a research misconduct case. The student's actions not only destroyed any possible working relationship between what had been two collaborating senior investigators and their students, it resulted in the PI's inability to publish the data. It was the impetus for events which ultimately led to a flawed

investigation that damaged the reputations of both senior investigators. As a positive consequence of these events, the U.S. institution has improved both its responsible professional practices training and its investigative processes.

We recommended that NSF make a finding of research misconduct against the student, send him a letter of reprimand, and debar him for 5 years.

Researcher Copies Text and Figures into Multiple SBIR Proposals

An allegation of extensive plagiarism in multiple SBIR proposals submitted by a Florida researcher over a 5-year period was confirmed by an OIG investigation. When contacted, the subject acknowledged an “oversight” for not providing citations and references to numerous source documents from which text and figures were copied into her proposals. But in fact, the evidence supports an extensive pattern of “cut-and-paste” plagiarism from print and web sources. Extensive plagiarism was even found in a new proposal the subject submitted while our investigation was ongoing.

We recommended NSF make a finding of research misconduct against the subject; send the subject a letter of reprimand; debar the subject for a period of 2 years; require the subject submit certifications for 2 years after debarment ends; require the subject’s employer submit assurances for 2 years after debarment ends; prohibit the subject from serving as a merit reviewer of NSF proposals for 2 years after debarment ends; and require the subject to provide certification for completion of a course in ethics training.

PI Plagiarizes Work Plan into Funded SGER Proposal

An associate professor (the subject) at a Texas university plagiarized into seven separate proposals submitted to NSF. Our inquiry determined that a total of 269 lines, 4 figures and captions, and 19 references were copied into 3 awarded and 3 declined NSF proposals. One of the awarded proposals was a SGER award for \$55,352. After receiving the subject’s institution’s report of investigation, we discovered that the subject had plagiarized text into an awarded proposal he submitted during our ongoing investigation.

When interviewed regarding the plagiarism contained within the SGER proposal, the cognizant program officer said he made the award because he thought the idea the subject presented to him both in person and in writing was original. His statement was evidence that a material misrepresentation in the proposal was instrumental in making an award of federal funds. We referred the case to the U.S. Attorney’s Office, which declined prosecution in lieu of strong administrative actions by NSF because the subject did not receive personal financial benefit from the SGER award.

We recommended NSF: make a finding of research misconduct against the subject; send the subject a letter of reprimand; debar the subject for 2 years; require certifications and assurances for 2 years; bar the subject from serving as an NSF reviewer for 3 years; and require certification of attending an ethics class.

PI Plagiarizes Online Materials into His NSF Proposal

An OIG investigation concluded that a Virginia PI plagiarized text from multiple source documents into one NSF proposal. The institution's investigation committee concluded that, although the PI knowingly included material from online sources, he did not understand the significance of including this material as part of the proposal without appropriate citation.

Based on the university's comprehensive report, we concluded the PI committed research misconduct and recommended NSF: 1) send a letter of reprimand to the PI informing him that NSF has made a finding of research misconduct; 2) require him to certify to NSF's OIG that proposals he submits to NSF for 2 years from the date of the letter of reprimand do not contain plagiarized, falsified, or fabricated material; 3) require the subject submit assurances by a responsible official of his employer to the OIG that any proposals or reports submitted to NSF do not contain plagiarized, falsified, or fabricated material for 2 years and 4) direct him to attend a course in research ethics and provide documentation to the OIG upon completion. NSF's adjudication is pending.

Institution Discovers PI's Plagiarism Was Part of an Extensive Pattern

A PI from a Pennsylvania university plagiarized text from multiple source documents into two NSF proposals. As part of its investigation, the PI's institution concluded that, in addition to the two NSF proposals, the PI also had submitted three proposals containing plagiarized text to other agencies and funding organizations.

Based on the university's investigation, we concluded the PI committed research misconduct and recommended NSF 1) send a letter of reprimand to the PI informing him NSF has made a finding of research misconduct; 2) require him to certify to NSF's OIG that proposals he submits to NSF for 2 years from the date of NSF's letter of reprimand do not contain plagiarized, falsified, or fabricated material; and 3) direct him to attend a course in research ethics.

Former Professor Plagiarized into an NSF Proposal

OIG launched an inquiry into an allegation that a subject submitted a proposal containing plagiarism while employed as an assistant professor in an Indiana university. The inquiry identified plagiarized material in four proposals, and we initiated an investigation.

The subject of the investigation, who was no longer employed at the university, provided adequate documentation to show she had rightful use to text copied in three of the four proposals. However, she did not dispute the copying of text into the fourth proposal. Our investigation concluded by a preponderance of the evidence that the subject knowingly plagiarized from four sources in one proposal.

We recommended NSF: make a finding of research misconduct against the subject; send the subject a letter of reprimand; require certifications and assurances for one year; and require certification of attending an ethics class.

Faculty Member Unsuccessfully Passes Blame to Students for Plagiarism

A faculty member at a university in Michigan knowingly copied plagiarized material from his students into his NSF proposal and when questioned, deflected the blame for his misconduct to them. The university's investigation concluded that the faculty member committed research misconduct by plagiarizing 60% of the copied text from a student's thesis.

With respect to the remaining copied text, we learned that a second student provided the faculty member (who was also his mentor) with the plagiarized text, knowing the material would be used in a proposal requesting support for his dissertation. Like the first student, this student is a non-native English speaker with little or no training in presenting scientific material in English. The university concluded that the student lacked sufficient knowledge of the need for and mechanics of proper attribution, thus making him incapable of having the minimal level of intent for a finding of misconduct. Noting that as a university it did not provide the student with sufficient training, the university has taken steps to educate its students about appropriate citation. We agreed that under the circumstances of this case, this student did not have the requisite intent for a finding of research misconduct.

We forwarded our recommendation to NSF for a finding of research misconduct against the faculty member for knowingly plagiarizing material from his student's thesis and recommended that NSF send a letter of reprimand to the faculty member, ban the faculty member from serving NSF in an advisory capacity for 2 years, and require the faculty member to: 1) for 1 year, submit a description of his plans for training his students and postdoctoral associates in conjunction with any proposal he submits to NSF; 2) for 1 year, submit certifications by him and assurances by a responsible official at his employer each time he submits proposal or reports to NSF stating the documents do not contain plagiarism, falsification, or fabrication; 3) submit within 1 year a certification of completion of a course in research ethics; and 4) certify retraction of a proceedings paper also containing the unattributed plagiarized text.

Professor Copies Text from a Proposal He Peer Reviewed

A senior professor at a New Jersey university inappropriately retained a copy of a proposal he reviewed for NSF, and copied text from it into his own proposal, which he submitted to NSF the following year. The copied material first appeared in the subject's original proposal, and again in subsequent resubmissions of the same proposal.

Based on the university's report of investigation, we recommended that NSF: make a finding of research misconduct against the subject; send the subject a letter of reprimand; require the subject to submit certifications for 1 year; require the subject's employer to submit assurances for 1 year; prohibit the subject from serving as a reviewer of NSF proposals for 2 years; and require the subject to provide certification for completion of a course in ethics training. A decision on this matter is pending.

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	\$1,945,240
B.	Recommendations that were issued during the reporting period	\$0
C.	Adjustments related to prior recommendations	\$0
Subtotal of A+B+C		\$1,945,240
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	\$1,945,240
For which no management decision was made within 6 months of issuance		\$1,945,240

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	26	\$63,905,096	\$2,736,680
B.	That were issued during the reporting period	13	\$5,312,565	\$4,331,984
C.	Adjustment related to prior recommendations	1	(\$1,547)	\$0
Subtotal of A+B+C			\$69,216,114	\$7,068,664
D.	For which a management decision was made during the reporting period	18	\$1,479,223	\$491,302
	i) dollar value of disallowed costs	N/A	\$648,073	N/A
	ii) dollar value of costs not disallowed	N/A	\$831,150	N/A
E.	For which no management decision had been made by the end of the reporting period	21	\$67,736,891	\$6,577,362
	For which no management decision was made within 6 months of issuance	10	\$62,425,521	\$2,245,379

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:	2	\$4,680,264	\$284,938	\$64,730
B.	Reports with monetary findings that were issued during the reporting period:	2	\$1,250,000	\$12,971	\$988,806
C.	Adjustments related to prior recommendations	0	\$0	\$0	\$0
Total of reports with cost sharing findings (A+B+C)		4	\$5,930,264	\$297,909	\$1,053,536
D.	For which a management decision was made during the reporting period:	1	\$4,680,264	\$284,938	\$0
	1. Dollar value of cost-sharing shortfall that grantee agreed to provide	1	\$4,680,264	\$284,938	\$0
	2. Dollar value of cost-sharing shortfall that management waived	1	\$4,680,264	\$0	\$0
E.	Reports with monetary findings for which no management decision has been made by the end of the reporting period	3	\$1,250,000	\$12,971	\$1,053,536

Status of Recommendations that Involve Internal NSF Management Operations

Open Recommendations (as of 3/31/2008)	
Recommendations Open at the Beginning of the Reporting Period	76
New Recommendations Made During Reporting Period	5
Total Recommendations to be Addressed	81
Management Resolution of Recommendations ¹	
Awaiting Resolution	22
Resolved Consistent With OIG Recommendations	59
Management Decision That No Action is Required	0
Final Action on OIG Recommendations ²	
Final Action Completed	12
Recommendations Open at End of Period	69

Aging of Open Recommendations

Awaiting Management Resolution:	
0 through 6 months	5
7 through 12 months	13
More than 12 months	4
Awaiting Final Action After Resolution	
0 through 6 months	0
7 through 12 months	33
More than 12 months	14

¹ "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.

² "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	Unsupported Costs	Better Use of Funds	Cost Sharing At-Risk
08-1-009	School District of Philadelphia	\$4,160,047	\$3,333,309	\$0	\$0
08-1-010	University of California-San Diego Effort Reporting System	\$85,128	\$0	\$0	\$0
08-1-011	WestEd	\$1,011,602	\$988,806	\$0	\$0
08-1-014	Vanderbilt University Effort Reporting System	\$31,325	\$0	\$0	\$0
08-2-005	Audit of Large Facility Operation Agreements				
08-2-006	AUP IODP International Drilling Program	\$0	\$0	\$0	\$0
08-2-008	FISMA 2008 Independent Evaluation Report	\$0	\$0	\$0	\$0
08-2-009	FY2008 FISMA Independent Evaluation Summary				
08-3-002	Internal Quality Control Review for Centers 1 #08-2-002 NSF's Oversight of Centers	\$0	\$0	\$0	\$0
08-6-002	Abt Associates FY2003 Incurred Cost	\$0	\$0	\$0	\$0
08-6-003	WHOI Indirect Costs Woods Hole Oceanographic Institution				
	Total:	\$5,288,102	\$4,322,115	\$0	\$0

NSF-Cognizant Reports

Report Number	Subject	Questioned Costs	Unsupported Costs	Cost Sharing At-Risk
08-4-019	6-05 School District of Riverview Gardens - MO	\$0	\$0	\$0
08-4-030	6-06 Computing Research Association, Inc. – DC	\$0	\$0	\$0
08-4-049	8-06 Twin Cities Public Television, Inc. – MN	\$0	\$0	\$0
08-4-050	12-05 CRDF US Civilian Research & Development Foundation – VA	\$0	\$0	\$0
08-4-051	12-06 CRDF US Civilian Research & Development Foundation – VA	\$0	\$0	\$0
08-4-052	12-06 AMS American Meteorological Society – MA	\$0	\$0	\$0
08-4-053	12-06 AGI American Geological Institute – VA	\$0	\$0	\$0
08-4-054	12-06 Biological Sciences Curriculum Study, Inc. – CO	\$0	\$0	\$0
08-4-055	9-06 Kentucky Science & Technology Corporation	\$0	\$0	\$0
08-4-056	6-06 MPC Corporation – PA	\$0	\$0	\$0
08-4-057	6-07 William March Rice University – TX	\$0	\$0	\$0
08-4-058	6-06 Maine Mathematics & Science Alliance	\$0	\$0	\$0
08-4-059	6-07 Franklin W. Olin College of engineering – MA	\$0	\$0	\$0
08-4-060	9-06 URA Universities Research Association, Inc. – DC	\$0	\$0	\$0
08-4-061	12-06 American Association of Community Colleges – DC	\$0	\$0	\$0
08-4-062	12-06 American Institute of Physics – MD	\$0	\$0	\$0
08-4-063	9-06 Museum of Science, Inc. – FL	\$0	\$0	\$0
08-4-064	6-07 Institute of Ecosystem Studies - NY	\$0	\$0	\$0
08-4-066	6-07 Keck Graduate Institute of Applied Life Sciences – CA	\$0	\$0	\$0
08-4-067	6-07 Southwest Center for Educational Excellence - MO	\$0	\$0	\$0
08-4-068	6-07 Harrisburg University of Science & Technology - PA	\$0	\$0	\$0
08-4-070	6-05 Town of Hudson – MA	\$0	\$0	\$0
08-4-071	9-05 NEES Consortium, Inc. – CA	\$0	\$0	\$0
08-4-072	9-06 NEES Consortium, Inc. - CA	\$0	\$0	\$0

08-4-073	12-06 AIM American Institute of Mathematics – CA	\$0	\$0	\$0
08-4-074	6-06 Museum of Science – MA	\$0	\$0	\$0
08-4-075	6-07 Museum of Science – MA	\$0	\$0	\$0
08-4-076	12-06 American Association of Physics Teachers, Inc. – MD	\$0	\$0	\$0
08-4-077	6-06 Show Low Unified School district #10 – AZ	\$0	\$0	\$0
08-4-078	6-06 Allegheny Intermediate Unit – PA	\$0	\$0	\$0
08-4-079	12-06 American Physical Society – MD	\$0	\$0	\$0
08-4-080	12-06 Association for Institutional Research – FL	\$0	\$0	\$0
08-4-081	12-06 TERC Technical Education Research Centers, Inc. – MA	\$0	\$0	\$0
08-4-082	6-06 Science Museum of Minnesota	\$0	\$0	\$0
08-4-083	9-07 UCAR University Corporation for Atmospheric Research – CO	\$0	\$0	\$0
08-4-084	6-07 Carnegie Institution of Washington – DC	\$0	\$0	\$0
08-4-086	6-07 American Museum of Natural History – NY	\$0	\$0	\$0
08-4-087	12-04 Systemic Research, Inc. – MA	\$0	\$0	\$0
08-4-088	12-05 Systemic Research, Inc. – MA	\$0	\$0	\$0
08-4-089	6-06 IRIS Incorporated Research Institutions for Seismology – DC	\$0	\$0	\$0
08-4-091	6-06 Stark County Educational Service Center – OH	\$0	\$0	\$0
08-4-093	8-07 WGBH Educational Foundation – MA	\$0	\$0	\$0
08-4-094	8-07 American Bar Foundation - IL	\$0	\$0	\$0
08-4-097	9-07 AUI Associated Universities, Inc. - DC			
	Total:	\$0	\$0	\$0

Other Federal Audits

Report Number	Subject	Questioned Costs	Unsupported Costs	Cost Sharing At-Risk
08-5-065	6-07 Youngstown State University - OH	\$51	\$0	\$0
08-5-071	5-07 Our Lady of the Lake University of San Antonio - TX	\$1,712	\$1,712	\$0
08-5-075	6-07 State of Utah	\$3,222	\$	\$0
08-5-084	6-07 State of Montana	\$4,478	\$	\$0
08-5-102	6-07 Eastern Michigan University	\$1,000	\$0	\$0
08-5-109	10-06 MITRE Corporation - MA	\$195	\$0	\$0
08-5-117	6-07 University of Notre Dame du Lac – IN	\$7,494	\$2,696	\$0
08-5-118	6-07 University of Medicine and Dentistry of New Jersey	\$850	\$0	\$0
08-5-120	6-07 State of Florida	\$5,461	\$5,461	\$0
	Total:	\$24,463	\$9,869	\$0

Audit Reports with Outstanding Management Decisions

This section identifies audit reports involving questioned costs, where management had not made a final decision on the corrective action necessary for report resolution within six months of the report's issue date. At the end of the reporting period there were ten reports remaining that met this condition. The status of recommendations that involve internal NSF management is described on page 46.

Report Number	Subject	Questioned Costs	Unsupported Costs
05-1-005	RPSC Costs Claimed FY2000 to 2002	\$33,425,115*	\$0
06-1-023	RPSC 2003/2204 Raytheon Polar Services Company	\$22,112,521*	\$0
07-1-003	Triumph Tech, Inc.	\$80,740	\$1,192
07-1-015	Supplemental schedule to #06-1-023 RPSC	\$560,376	\$0
07-1-019	Abt Associates	\$22,716	\$0
08-1-001	WGBH Educational Foundation	\$808,383	\$6,737
08-1-005	University of Illinois-Champaign Effort Reporting System	\$6,329	\$0
08-5-031	6-06 State of Louisiana	\$130,755	\$130,755
08-5-034	6-06 Howard University – DC	\$292,910	\$211,059
08-5-035	6-06 University of Missouri System Office	\$4,986,676	\$1,895,636
	Total:	\$62,425,521	\$2,245,379

* Final Resolution of a portion of these questioned costs awaits a decision from the Department of Justice.

INVESTIGATIONS DATA

(April 1, 2008 – September 30, 2008)

Civil/Criminal Investigative Activities

Referrals to Prosecutors	9
Criminal Convictions/Pleas	2
Civil Settlements	0
Indictments/Information	1
Investigative Recoveries	\$1,047,170.78

Administrative Investigative Activities

Referrals to NSF Management for Action	27
Research Misconduct Findings	6
Debarments	3
Administrative Actions	31
Certifications and Assurances Received ²⁰	8

Investigative Case Statistics

	<u>Preliminary</u>	<u>Civil/Criminal</u>	<u>Administrative</u>
Active at Beginning of Period ²¹	41	75	63
Opened	93	27	32
Closed	89	23	35
Active at End of Period	45	79	60

²⁰ 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.

²¹ Last period we reported 60 Preliminary cases and 67 C/C cases. During this period, a duplicate Preliminary case was deleted and a C/C case was closed which should have been counted as closed last period.

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:

Requests Received	23
Requests Processed	23
Appeals Received	2
Appeals Upheld	2

Response time ranged between 1 day and 33 days, with the median around 13 days and the average around 11 days.

Management Challenges Letter

October 16, 2008

MEMORANDUM

To: Dr. Steven C. Beering
Chair, National Science Board

Dr. Arden Bement
Director, National Science Foundation

From: Dr. Christine C. Boesz
Inspector General, National Science Foundation

Subject: Management Challenges for NSF in FY 2009

In accordance with the Reports Consolidation Act of 2000, I am submitting our annual statement summarizing what the Office of Inspector General (OIG) considers to be the most serious management and performance challenges facing the National Science Foundation (NSF). We have compiled this list based on our audit and investigative work, general knowledge of the agency's operations, and the evaluative reports of others, such as the Government Accountability Office and NSF's various advisory committees, contractors, and staff.

This year's management challenges are again organized under five broad issue areas: award administration; human capital; budget, cost and performance integration; U.S. Antarctic Program; and merit review. Twelve challenges appear on this year's list, some of which reflect areas of fundamental program risk that are likely to require management's attention for years to come. There are also two new management challenges: international awards and ethical conduct of research.

If you have any questions or need additional information, please call me at 703-292-7100.

Award and Contract Administration

Post-award administration policies. An effective post-award administration program for NSF grants should provide oversight for both financial and programmatic issues to ensure that awardees: 1) comply with terms, conditions, and regulations; 2) achieve expected progress toward accomplishing project goals; and 3) file accurate financial reports as required. Over the past six years, NSF has improved its monitoring of financial performance by implementing a risk-based system that directs more of the agency's attention to high-risk awardees. In FY 2008, NSF reports that it assessed the performance of 29 percent of grantees managing 93 percent of NSF funds. The challenge for the agency continues to be in improving its monitoring of programmatic performance. Since the primary responsibility of NSF's program officers is selecting new awards, active awards frequently do not receive adequate attention. The program officers need more time, guidance, and training to carry out this important job in order to detect problems with an award in time to intervene.

OIG has highlighted problems in administering cost sharing as a major management challenge for NSF for the past 10 years. The agency's decision in 2004 to eliminate non-statutory cost sharing requirements effectively curtailed new cost sharing commitments but failed to address the issue of how to improve the poor documentation by grantees of cost sharing already in place. OIG estimates that despite the elimination of most new cost sharing, \$126 million in cost shared commitments remains active. This year the National Science Board, which was asked by Congress to review the impact of the agency's elimination of most cost sharing, recommended that it be reinstated for specific programs. At the same time, the NSB noted the confusion among grantee institutions that surrounds cost sharing policies and their implementation, and emphasized the need for the agency to clearly communicate the requirements of tracking and reporting cost sharing to those institutions that undertake the commitment. The challenge for NSF is to put an effective outreach program in place that will assure that awardees understand and comply with the legal and auditing requirements that go along with cost sharing.

Contract Administration. The administration and monitoring of contracts has been a management challenge for NSF in part because the agency has not had a comprehensive, risk-based system to facilitate its oversight of contracts and ensure that the requirements of each were being met. A timely and effective post-award monitoring program is necessary to assure the accuracy and integrity of the contractor's financial reports, and that it is otherwise performing as agreed. Since contract monitoring was first cited as a deficiency by the agency's financial statement auditors in FY 2004, the agency has improved its contracting policies and procedures each year. During FY 2008, the agency completed an update of its contracting manual, which strengthened its guidance regarding post-award monitoring, risk-assessment, and risk-mitigation procedures. Over the next year NSF will undertake another significant challenge as its \$1.3 billion contract to perform logistics, support, operations, and maintenance of NSF activities in Antarctica expires March 31, 2010. NSF is aiming to make an award by October 1, 2009. The challenge for NSF during the procurement will be to ensure that all offerors receive the same information and opportunities, and that NSF conducts a comprehensive analysis of the information contained in their proposals to arrive at the best contract for the USAP and the government.

Management of large infrastructure projects. NSF's investment in large infrastructure projects and instruments such as telescopes and earthquake simulators presents the agency with a number of administrative and financial challenges that have sometimes not received the same attention as the technical issues associated with building these large-scale scientific tools. Past OIG audits suggest that the agency's oversight of infrastructure projects is in some cases more engaged in dealing with technical issues, where NSF's scientific expertise can be applied, rather than financial and project management matters. The audits provide details about the difficulty of managing the design, construction, and financing of these cutting edge projects and completing the facilities on time and within budget.

During the past year, the agency has continued to make progress in addressing some of our longstanding concerns. In particular, NSF continues to train agency staff on project management and other issues related to large facilities, and has slightly increased staff assigned to the Large Facilities Office (LFO) from 4 to 5. However, some of the issues we have raised in the past persist. For example, NSF has still not fully completed the in-depth guidance necessary to carry out the broader policies described in its facilities manual. Meanwhile, annual operating costs for large facilities now exceed \$1 billion and represent a significant portion of NSF's entire budget, as the number of active facilities in all phases of development continues to grow. While NSF has increased the personnel assigned to LFO, we remain concerned that it has not been assigned adequate authority or staff to handle the full responsibility for oversight of the entire life-cycle of these facilities. Therefore, the challenge for NSF is to continue to improve its management of and knowledge about the entire facility life cycle in order to assure their successful operation. To assist NSF in addressing this challenge, OIG is undertaking a series of reviews that focus on the cooperative agreements by which the agency provides for the management and operation of its large facilities.

Audit resolution. Audit resolution, closure and follow-up together comprise a key element of an agency's internal control structure and help to identify and prevent waste, fraud and abuse. For all OIG audits and those of NSF awardees performed under OMB Circular A-133, NSF implements the requirements of revised OMB Circular A-50 on Audit Follow-up. The OIG works with NSF staff to resolve internal control, compliance, and questioned cost findings contained in these audits and to ensure that the auditees implement corrective action plans to address the audit findings. Since 57 percent of NSF audits focus on contract or grant funds, there are frequently *three* parties (agency, auditors, and awardees) rather than two participating in audit resolution, making the process more complicated and challenging. Therefore, OIG initiated a review this year to determine whether NSF has adequate policies and procedures to ensure that audit findings and recommendations are fully, effectively, and appropriately resolved. The report will be issued in 2009.

International awards. As funding for scientific research around the world increases and commerce becomes more global, collaborations between countries and their scientists to conduct research are also on the rise. It is estimated that NSF spends between \$300 and \$400 million annually on research awards that involve participants from overseas. In addition to managing its own international funding, because of its grant administration experience

NSF is increasingly being sought after by agencies and non-profits to manage their international awards for a fee. This increase in its international portfolio amplifies the need to ensure the financial and programmatic accountability of these projects in areas such as use of research funds, integrity in research, and project performance. The National Science Board noted in a recent report: “Accountability must be an integral part of planning successful collaborations to assure supporters that research integrity is a priority and that funds are used appropriately”.¹

Past OIG audits of NSF’s international awards have found that international awardees are largely unfamiliar with the terms and conditions that are applied by U.S. funding organizations. In those situations where there is more than one funding organization with conflicting administrative priorities, it is unclear to awardees which to follow. Similarly, standards for the conduct of research that define plagiarism and data falsification and their penalties, often differ from country to country depending on the scientific field. NSF must address these financial and programmatic challenges by working with other international science organizations to harmonize their policies and create internationally recognized standards and practices that will protect the integrity of the research enterprise along with the funds that support them.

Ethical conduct of research. In increasing numbers, researchers and students from all over the world who are trained to different standards and expectations of responsible and ethical conduct of research are finding themselves in close collaborations. At the same time studies show that the current training programs in ethical research are ineffective. Advances in computer technology coupled with the increasing amount of information and data stored on the internet, have increased the opportunities for unethical researchers to commit research misconduct or engage in questionable research practices. OIG has long urged NSF to do more to foster integrity among researchers. Last year, the America COMPETES Act of 2007 (The Act) presented the agency with a new mandate. Its states: “The Director shall require that each institution that applies for financial assistance from the Foundation for science and engineering research or education describe in its grant proposal a plan to provide appropriate training and oversight in the responsible and ethical conduct of research to undergraduate students, graduate students, and postdoctoral researchers participating in the proposed research project.”

Since the passage of The Act, NSF has taken some initial steps toward compliance, such as conducting internal assessments and seeking advice from academe on developing such guidance, but to date has only responded to the requirements regarding postdoctoral researchers. In light of this growing challenge to the integrity of NSF’s funded programs NSF needs to immediately implement a more comprehensive, agency-wide program to instill ethics and integrity at all levels of the scientific, engineering and education enterprise it supports.

¹ National Science Board, *International Science and Engineering Partnership: A Priority for U.S. Foreign Policy and our Nation’s Innovation Enterprise.*

Human Capital

Workforce planning. As a management challenge for NSF, workforce planning refers primarily to three issues: planning for future staffing, management succession, and the use of visiting scientists or “rotators”. Management and staff have attempted for most of the past decade to keep pace with an increasing workload, driven by a rising number of proposals from researchers seeking grant funds. Despite this increase in workload, few additional staff have been added to the agency over the past 10 years. Past staffing imbalances at NSF have prompted questions from Congress and others about how it conducts its planning and has driven agency efforts to develop a more formalized process over the past three years.

As part of its Human Capital Management Plan, the agency piloted a workforce analysis tool to assist it in determining the appropriate number of FTEs needed by each individual directorate. While the analytical tool gives NSF an objective basis for projecting its future staffing needs, the methodology is primarily based on the relationship between historical staffing levels and various measures of workload. To date, NSF has not conducted a comprehensive skills analysis to identify gaps between the abilities of the current and projected workforce. A skills analysis is recommended by the Office of Personnel Management to promote informed, forward-looking workforce planning. For this reason, NSF received a “red light” for its management of human capital on the President’s Management Agenda Scorecard from OMB this past year. Though NSF’s new Human Capital Strategic Plan issued in March 2008 promised “particular focus on addressing identified skill gaps”, the agency now believes that a formal skill gaps analysis would be inappropriate for NSF.

Meanwhile the number of NSF staff eligible for retirement is even greater than that of the rest of the federal government. The agency estimates that 34 percent of its workforce is over 55, as opposed to 24 percent for the government overall, and the average age of an NSF employee is 50. NSF has been fortunate that the retirement rate for the past four years has been lower than the rest of government at 13.5 percent. In preparation for the eventual rise in retirements, NSF has articulated three core strategies to guide its succession planning including an effective transition process, comprehensive leadership development, and sound knowledge management practices.

The temporary employment of “rotators” or visiting scientists, as a means of revitalizing the agency’s knowledge about specific cutting edge areas of research, also poses an administrative and management challenge for NSF. In FY 2007, there were about 219 rotators working at NSF comprising approximately 15 percent of NSF’s workforce and an even greater percentage of its program officers. NSF estimates that 15-20 percent of its executives and 14 percent of its science and engineering staff are subject to annual turnover. The continual replenishing of this critical but temporary workforce presents a challenge for the agency as they require more administrative support in the form of hiring, processing, training, and supervision, than a permanent employee. The presence of so many rotators also complicate efforts by the agency to conduct effective succession planning as there are certain positions for which their level of institutional knowledge or management skills are not appropriate. NSF recognizes the problem and has focused more attention on the unique issues surrounding rotators in developing their Human Capital Strategic Plan.

Administrative infrastructure. The ability of NSF directorates to hire new employees and to travel continues to be hindered by a lack of resources as well as poorly designed systems. As reflected in the most recent surveys of NSF staff, the agency's understaffed human resource office continues to extend the time required to bring on board needed new employees. Basic human capital services such as staffing and recruitment, workforce planning, and organizational development received among the lowest ratings registered in NSF's 2007 customer satisfaction survey.

In addition, the efforts of NSF program and financial staff to monitor awards through on-site inspections are impeded due to problems associated with funding and scheduling travel. Over the past 5 years, NSF's travel funds have increased at an annual rate of only 4.7%, this during a period when the agency has strengthened its administrative post-award oversight in part by conducting more site visits. Our concern is that that the funding of more financial site visits will be performed at the expense of the program officers who must also be able to observe awardee operations first-hand and meet with grantees. The difficulty of using the Fed Traveler system to schedule and account for travel is reflected in its poor rating in the survey of agency staff. NSF should strengthen its commitment to effective post-award administration by increasing the availability of funds for travel, and streamlining the process for accomplishing it.

Budget, Cost and Performance Integration

Performance reporting. The Government Performance and Results Act (GPRA) requires agencies to identify the outcomes that they were created to accomplish, and to establish and track their progress against performance measures that best reflect progress toward accomplishing those goals. However, as the Committee on Science, Engineering, and Public Policy observed: "evaluating federal research programs in response to GPRA is challenging because we do not know how to measure knowledge while it is being generated, and its practical use might not occur until many years after the research occurs..."² For this reason NSF has struggled over the years to define the outcomes that follow from its mission, and to set up appropriate performance measures.

In its 2006-2011 strategic plan, NSF revised its 4 strategic outcome goals, in part to clarify them for reporting purposes. However, the outcomes described are very general and tend to complicate independent efforts to conduct a meaningful evaluation of the agency's performance. George Mason University's Mercatus Center ranked the quality of NSF's performance reporting as 18th out of 24 federal agencies reviewed in its most recent *Annual Performance Scorecard*.³ In addition, NSF's Advisory Committee on GPRA counseled NSF to consider ways to demonstrate the long-term impacts of NSF support to make their reporting more comprehensive. NSF would be wise to follow the Advisory Committee's recommendation.

² *Implementing the Government Performance and Results Act for Research*, p.1

³ *9th Annual Performance Report Scorecard*, p. 67

Cost information. The demand for increased disclosure and transparency by government agencies about their finances continues to grow each year. A recent survey commissioned by the Association of Government Accountants indicates that 1) federal financial reporting is important to taxpayers, 2) it affects their level of trust in government, and 3) government is failing to meet expectations regarding its obligation to explain how it spends its money. In response to this problem, Congress enacted the Federal Funding Accountability and Transparency Act of 2006 (The Act), requiring federal agencies to publicize for the first time detailed information about all grants and contracts over \$25,000 in a searchable, on-line format. Since grants and contracts comprise approximately 95 percent of NSF's appropriation, The Act has effectively opened the agency's accounting books to the public for the bulk of its expenditures, a positive development.

However, while information about NSF's awards is now readily available, details about its own operating costs are much harder to find. In its annual financial report and performance highlights, NSF's operating costs are aggregated and presented according to its three strategic goals which are too general to enable any meaningful evaluation of how well the agency is managing its own resources. An annual report that omitted information about how much a business spends on salaries, office space, or other basic expenses would be of limited use to shareholders or regulators. Detailed cost information is not just necessary to determine an organization's cost-effectiveness and efficiency, but is also crucial to fostering *accountability*. For that reason, NSF should strive to improve and increase its disclosure of operating costs.

United States Antarctic Program (USAP)

USAP long-term planning. One of NSF's most important responsibilities is the operation of the USAP which is overseen by the Office of Polar Planning (OPP). Through a 10-year \$1.3 billion contract, OPP provides all necessary services and support to three U.S. research stations: McMurdo, South Pole, and Palmer. As part of its mandate, NSF is also responsible for the research infrastructure in Antarctica's harsh polar environment. The agency spent approximately \$233 million for USAP infrastructure and logistics in FY 2007. The periodic replenishment of the infrastructure is a key element of USAP's long-term planning efforts, as well as a management challenge, because of its impact on the health and safety of program participants as well as the performance of scientific research.

In a note to its FY 2007 financial statements, NSF reports that scheduled maintenance on 17 items of Antarctic capital equipment in poor condition was deferred, explaining that deferred maintenance on assets in poor condition is considered "critical to maintaining operational status" due to the environment and remote location. OPP commonly defers maintenance when the Program lacks either parts or money. In FY 2008 and 2009, USAP budgets have also been affected by rising fuel costs and a weak dollar, further impeding NSF's ability to make long-planned investments in renewing and upgrading its infrastructure. Several years ago, OIG auditors recommended that NSF develop a life-cycle oriented capital asset management program along with a consistent budgeting mechanism to ensure that USAP's infrastructure needs

are adequately addressed and do not pose a risk to the safety and health of USAP participants. NSF disagreed with this proposal.⁴ Since thorough planning is particularly critical when managing within limited budgets, NSF should reconsider this suggestion.

As noted in prior Federal Information Security Management Act (FISMA) reports, OPP also needs to improve its disaster recovery planning to be better prepared in the event a disruption in IT services affects its Antarctic operations. In FY 2008, OPP management initiated strategic planning to mitigate the potential risk of interruption to USAP program operations. OPP plans to continue an initiative to create alternate network connectivity for Antarctica operations and estimates that implementation should be completed by the end of FY 2009, contingent on funding. OPP is also in the process of replacing its operating platform with a more current and robust system by the end of FY 2010.

Merit Review

Broadening participation in the merit review process. Increasing the numbers of women and minorities who receive NSF support for their research and participate as reviewers in the merit review process has been a longstanding but elusive goal of the agency. The primary challenge for NSF is to assure that underrepresented groups have the same opportunities, access to funds for research, and information about the process as those that have been successful in receiving funding. In FY 2007 NSF continued to make incremental progress toward achieving many of their goals. In the case of reviewers, a necessary first step toward increasing diversity is to persuade individual reviewers to voluntarily submit demographic information. The number of reviewers who complied with this request increased by 3 percentage points in 2007 to 28 percent. Meanwhile 37 percent of those who responded indicated that they were members of an underrepresented group, a 1 percent increase. As the funding rate for all PIs grew from 25 to 26 percent, the rate at which women and minority PIs are funded also increased by 1 percent to 27 and 25 percent respectively. However In FY 2007, NSF failed to achieve 4 out of 8 performance goals for Broadening Participation included in its Program Assessment Rating Tool (PART) review by OMB.

In its FY 2006 strategic plan, NSF had promised to expand efforts to broaden participation. More detail about those efforts is contained in *Broadening Participation at the National Science Foundation: A Framework for Action*, a draft plan issued in August 2008. It lists seven recommended action items for NSF to undertake to integrate the broadening participation initiative into NSF's core processes. One of the action items promises that it will increase the diversity of the reviewer population by 1) initiating the development of a searchable reviewer system with accurate demographic data, 2) encouraging reviewers to provide demographic data, 3) cultivating additional reviewer sources, and 4) encouraging NSF staff to use a more diverse reviewer pool. Just as important, another action item provides a commitment to develop a detailed implementation schedule for accomplishing all of its recommended actions. The proposed development of a timetable accompanied by periodic evaluations of the progress being made by the agency toward meeting this challenge would increase both the agency's accountability and its chances of success.

⁴ Audit of Occupational and Health & Safety and Medical Programs in the United States Antarctic Program, OIG 03-2-003, March 2003.

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, 43)

Matters referred to prosecutors, and the resulting prosecutions and convictions. (See pp. 27, 52)

Revisions to significant management decisions on previously reported recommendations, and significant recommendations for which NSF has not completed its response. (See pp. 22, 51)

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)

ACRONYMS

AOR	Authorized Organizational Representative
CASB	Cost Accounting Standards Board
CFO	Chief Financial Officer
CO	Contracting Officer
COTR	Contracting Officer's Technical Representative
COI	Conflict of Interest
COV	Committee of Visitors
DACS	Division of Acquisition and Cost Support
DCAA	Defense Contract Audit Agency
DD	Deputy Director
DGA	Division of Grants and Agreements
DIAS	Division of Institution and Award Support
DoD	Department of Defense
DoJ	Department of Justice
ECIE	Executive Council of Integrity and Efficiency
EPSCoR	Experimental Program to Stimulate Competitive Research
FAEC	Financial Audit Executive Council
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	Government Accountability Office
GPRA	Government Performance and Results Act
HHS	Department of Health and Human Services
IG	Inspector General
MIRWG	Misconduct in Research Working Group
MREFC	Major Research Equipment and Facilities Construction
NASA	National Aeronautics and Space Administration
NSB	National Science Board
NSF	National Science Foundation
OECD	Organization for Economic Co-operation and Development
OIG	Office of Inspector General
OMB	Office of Management and Budget
OPP	Office of Polar Programs
PAPPG	Proposal and Award Policies and Procedures Guide
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
USAO	United States Attorney's Office

AWARDS AND ACCOMPLISHMENTS

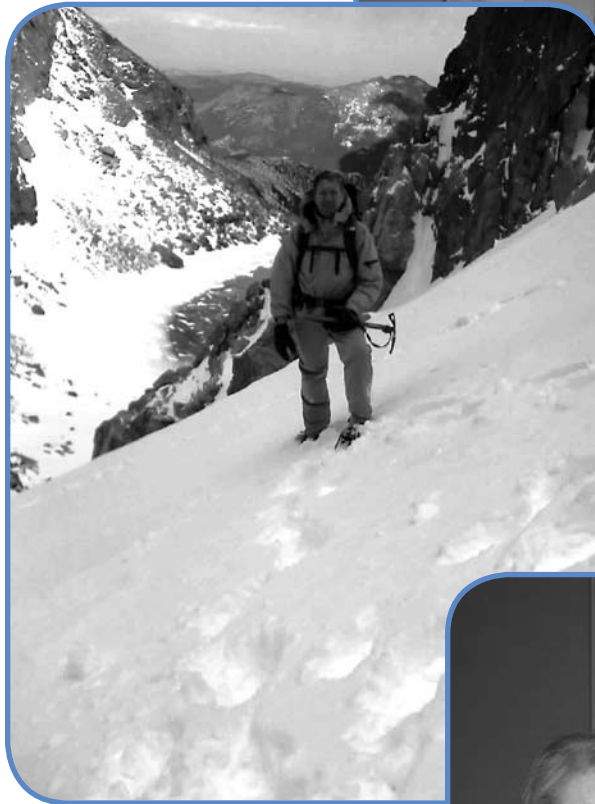


Jill Schamberger and Aliza Sacknovitz wrote an article published in the Journal of Public Inquiry entitled: *International Efforts Towards Financial and Programmatic Accountability.*

Carol Taylor celebrates receiving her degree in business management with Dr. Peggy Fischer, a recipient of the 2008 Presidential Rank Award.



Dr. Boesz presents an award to Deputy IG Tim Cross for 30 years of federal service.



Audit manager Ken Stagner scales Longs Peak in Colorado (elevation 14,259 feet).

Dr. Boesz presents an award to Administrative Officer Lillian Ellis for 35 years of federal service.





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