NSF

SEMIANNUAL REPORT TO CONGRESS

SEPTEMBER 2006

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 discplines, and providing leadership across the broad and expanding frontiers of science and engineering knowledge. It is governed by the National Science Board which sets agency policies and provides oversight of its activities.

NSF invests approximately $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 recieve NSF funding; and identifies and helps to resolve cases of misconduct in science. The OIG was established in 1989, in compliance with the Inspector General Act of 1978, as amended. Because the Inspector General reports directly to the National Science Board and Congress, the Office is organizationally independent from the agency.

*About the Cover...*A July day in Antarctica. Photo by Zee Evans, NSF; selected by Jen Agee.

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From the Inspector General

This report highlights the activities of the National Science Foundation (NSF) Office of Inspector General (OIG) for the six months ending September 30, 2006. The past six months have been a very busy time. We issued 21 audit reports and reviews that identified $25,415,769 in questioned costs, and $1,900,000 in funds that could be put to better use. In addition, we closed 12 civil/criminal cases, 27 administrative cases, referred 4 cases to the Department of Justice for prosecution, and recovered $910,097 in NSF funds as a result of our investigative efforts.

Our list of the most serious management challenges facing NSF in FY 2007 appears on page 49. I am pleased to note that NSF continues to make significant progress on several longstanding challenges. However, considerable work remains to be done in six critical areas: award administration; human capital; budget, cost and performance integration; information technology; the U.S. Antarctic Program; and merit review. Within these six areas, we list 10 challenges that remain from last year's list, and one new challenge pertaining to enterprise architecture.

As the American Competitiveness Initiative (ACI) promises to commit significant additional resources to the funding of scientific research over the next ten years, NSF must be prepared to manage these additional investments. To support the agency, OIG will focus resources to help ensure that NSF's increasing investment in basic research is subject to appropriate oversight and sound management controls.

In the past our audits have focused on many of the priorities identified in the ACI. For example, we have issued a number of audit reports that examine NSF's investment in "tools of science", i.e., large scale facilities and instruments that enable discovery and development. Pursuant to our recommendations, NSF is in the process of reengineering its approach to planning, building and managing these projects. Another series of recent audit reports, including one described on page 15, have recommended improvements in the way NSF disseminates research results. These changes should facilitate access to research findings, promote technology transfer, and accelerate the process by which basic research enables the introduction of successful new technologies and products. The ACI notes that the U.S. is operating within a changing global context in which countries are pouring resources into their scientific and technological infrastructure. As NSF attempts to leverage its investments by entering into a growing number of international partnerships, OIG has played a leadership role in establishing a dialogue among international organizations responsible for science research funding to discuss strategies for addressing mutual accountability challenges, as noted on pages 8-9.

Finally, I would like to extend a warm welcome to the new members of the National Science Board: Dr. Mark Abbott, Dr. Camilla Benbow, Dr. John Bruner, Dr. Patricia Galloway, Dr. Jose-Marie Griffiths, Mr. Arthur Reilly, Dr. Thomas Taylor, and Dr. Richard Thompson. The Office of Inspector General looks forward to working with them, along with our returning Board members, and our new Board leadership, to continue NSF's impressive record of accomplishment with strengthened oversight of NSF's stewardship of its resources.

Christine C. Boesz, Dr.P.H.
Inspector General
November 15, 2006

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Executive Summary

- An OIG audit report found that NSF constituents have an interest in obtaining more information about NSF-funded research. Organization executives and NSF program officers interviewed expressed an overwhelming interest in having NSF post brief summaries of research results and publication citations on its website. Interest was also indicated in posting conference proceedings, abstracts of journal articles, and final project reports. The report recommends that NSF use its position on various government-wide committees to advocate for the inclusion of brief summaries in project reports, which could be made available to the public. In addition, the agency should consider posting other formats, such as conference proceedings, journal abstracts, and conference proceedings on its website. (See p. 15)

- DCAA completed four audits of Raytheon Polar Services Company (RPSC) in which it questioned $22.1 million of RPSC's fiscal year (FY) 2003-2004 final payment claim; placed RPSC on notice that it must immediately file a federally mandated cost accounting practices statement or face administrative penalties; and identified internal control failings in both the Colorado and New Zealand offices that if not corrected, will require costly and extensive oversight by NSF to ensure RPSC is adhering to federal regulations and the NSF contract. In an earlier audit, $33.4 million, or 9.2 percent of the $363 million costs claimed by RPSC for the three-year period ended December 31, 2002 were questioned by the auditors. (See p. 18)

- Weaknesses in the University of Pennsylvania (UPENN) effort reporting system prevented it from adequately supporting a significant portion of labor charged to NSF grants according to an OIG audit. The audit disclosed two major systemic internal control deficiencies that affected UPENN's processes for accounting and charging labor effort costs to NSF awards: 1) UPENN's business managers were certifying labor effort reports, though they were not in a position to know whether work was performed, and 2) effort reports were not certified in a timely manner as specified by UPENN policy. As a result, we estimated that UPENN could not demonstrate that at least $9.2 million or 37 percent of the $24.9 million of labor costs charged to NSF in fiscal years 2002 through 2004 actually benefited NSF awards as opposed to other federal or university activities. (See p. 21)

• An OIG investigation into embezzlement at a university revealed other management control weaknesses that resulted in the recovery or de-obligation of $3,367,256 in NSF funds over a 3-year period. The investigation involved a university employee who was subsequently convicted of embezzling more than $487,000 in university funds, including $415,000 in NSF funds. In addition to finding evidence of embezzlement, investigators discovered that the university certified to inaccurate cost-sharing contributions each year of the award, and could not support a number of expenses charged to the NSF grant.

• The U.S. Attorney for the Middle District of Tennessee indicted a former professor at a state university on one count of wire fraud and one count of mail fraud. The indictment alleges that the professor used employees funded by NSF grants to conduct work in furtherance of private consulting that she performed through a company organized by one of her subordinates at the university. The professor was the director of a university center that received $5 million under a Local Systemic Change (LSC) grant from NSF to support the training of local school systems in science instruction and Hands-On Science programs.

• NSF found that a PI and a co-worker committed research misconduct based on an OIG investigation of plagiarism involving three Small Business Innovation Research (SBIR) proposals. The PI, who worked for a small company, initially admitted plagiarizing materials in all three proposals. However prior to adjudication, and after reviewing a copy of our investigation report, the PI identified a co-worker as the actual author of the third proposal. NSF concluded that both individuals committed research misconduct and required; (1) the PI to certify for a period of three years that NSF proposals he submits do not violate NSF's Research Misconduct regulation, and (2) the co-worker to complete a course in research ethics.

FY 2007 Management Challenges

The Office of Inspector General submitted its list of what it considers to be the most serious management and performance challenges facing the National Science Foundation to agency management. The list is based on OIG audits 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. Ten challenges are drawn from last year's list, some of which reflect areas of fundamental program risk that are likely to require management's attention for years to come. One new management challenge appears on this year's list: enterprise architecture. The OIG's management challenges letter appears in its entirety in the appendix on page 49.

Legal Review

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

Program Fraud Civil Remedies Act of 1986 (PFCRA)

We support a legislative initiative to amend PFCRA to include NSF and the 26 other agencies that are currently excluded from participation under the Act's enforcement provisions. PFCRA enables agencies to fully implement their statutory mission to prevent fraud, waste and abuse by availing themselves of the enforcement capabilities contained within the Act.

PFCRA sets forth administrative procedures that address allegations of program fraud when the claims are less than

HIGHLIGHTS

$150,000. Currently, the U.S. Postal Service and the executive departments identified in the Inspector General Act of 1978 are the only agencies permitted to use PFCRA. NSF and the other agencies with Inspectors General appointed by agency heads are not included.

We believe that using the enforcement provisions of PFCRA will enhance NSF and other agency recoveries in instances of fraud that fall below PFCRA's jurisdictional threshold of $150,000. In a March 2006 letter to Congress, the National Science Board made a formal request "that Congress amend the PFCRA to include NSF," and provide the agency with its investigative resolution authorities.

Outreach

NSF OIG continued to conduct outreach to NSF, the national and international research communities, and other federal agencies and their OIGs during this semiannual period. We saw an increase in the interest shown for grant-related oversight, particularly with the use of compliance programs. This interest was most evident at numerous international meetings and forums, where ideas were shared, questions asked, and advice sought on a broad range of topics relating to fostering effective oversight of government grant programs.

In conducting outreach activities, our intention is to inform and educate relevant audiences about all aspects of our mission. Our specific message for those institutions engaged in scientific research is that effective management and control systems must be maintained throughout the constituent parts of the research community, both to achieve technical compliance with federal requirements and to enhance the research enterprise and contribute to its success.

Working with Other Nations

Representing the U.S. at the Global Science Forum. As institutions from around the world increasingly collaborate to conduct scientific research, it is important that those who fund and perform research have an understanding of the rules, regulations, and research ethics that prevail in other countries. Because of her experience in dealing with issues of research misconduct, the Inspector General was designated as the United States representative to the Global Science Forum Expert Group.

In June, the Expert Group, which included representatives from 10 countries, gathered to discuss the growing need for mutual understanding of research misconduct issues and practical guidance for governments on research misconduct and ethical training. The Group developed a proposal addressing these matters, and it was accepted by the Forum. The IG will be part of a newly-formed steering committee that will meet again in Tokyo to consider information gathered from various countries and experts in order to develop international guidance on research misconduct issues.

Stressing Research Accountability at INORMS Conference. The NSF Inspector General was invited to speak at the International Network of Research Management Societies in Brisbane, Australia. Her presentation focused on the increasing number of allegations and research misconduct findings that have international implications, and the need for close coordination and consistent procedures for handling research misconduct and for ensuring adequate ethical training of researchers. She called for the development of national and international standards that can be used to investigate allegations of research misconduct.

Dr. Boesz at the INORMS conference with Yue Zhangdou, National Natural Science Foundation of China and Jan Massey, Chair of the conference.

Co-hosting of International Accountability Workshop. The Accountability in Science Research Funding workshop was held last spring in The Hague, Netherlands. The sessions were co-hosted by Dr. Boesz and Gertjan Boshuizen of the Netherlands Organization for Scientific Research, and representatives of 11 countries attended. Topics included internal audit, risk assessment, and risk management. Presenters from NSF included the Chief Financial Officer, the Director of the Division of Grants and Agreements, and the Associate Inspector General for Audit.

Delegation of Ministry of Supervision of P.R. China Visits OIG. Twenty-two representatives of the Chinese Ministry of Supervision visited the NSF OIG in September to meet with Dr. Boesz and Barry Snyder, Inspector General of the Federal Reserve Board. The IG presented information about how Offices of Inspector General are organized and operate, as well as their role and responsibilities. The delegation was particularly interested in how the independence of OIG is assured and how government corruption is prevented and detected.

International Conference on Research Integrity. NSF OIG staff also participated in a planning meeting for the 2007 International Conference on Research Integrity in Portugal. The planning session, attended by 20 representatives from a number of countries and organizations, will facilitate discussion of coordination on research misconduct and education on ethical behavior. NSF OIG has participated in discussions with representatives from Poland, Japan, and China while these representatives were visiting with their NSF counterparts. During these discussions, we again learned of the growing international concern for addressing research misconduct and for developing consistent rules and expectations for training and enforcement.

Working with the Research Community

OIG Staff Participation in Conferences. Members of the OIG staff were invited to participate in a wide range of workshops, conferences, meetings,

and other events conducted by institutions and associations of research professionals. Participation in such events allowed OIG staff to address the community in various forums and to discuss how best to advance our common goal of ensuring integrity and accountability in the operation of the research enterprise.   The purpose of our outreach presentations is to assist individuals and organizations within the national and international research communities in their efforts both to create systems to identify, resolve, and prevent recurrence of misconduct or mismanagement, and to foster an environment of ethical conduct in scientific research and grant administration.

The IG discusses International Accountability Workshop agenda with Gertjam Boshuizen of the Netherlands.

During this semiannual period, OIG staff participated in events sponsored by the Society of Research Administrators (SRA) International; the National Council of University Research Administrators; the Foundation for Polish Science; the Korean Science and Technology Policy Institute; the European Science Foundation; the Global Science Forum; the Czech Science Foundation; the Japanese Ministry of Science and Technology; and the Federal Audit Executive Council. In each of these forums, our staff engaged a broad spectrum of the community involved with the provision, use, administration, and oversight of grant funds.

Presentations at Universities. Members of the NSF OIG continue to receive numerous invitations to provide training to, and answer questions from, university officials and others involved in applying for and administering NSF awards, performing supported research, or conducting university-level inquiries into allegations of research misconduct. During this semiannual period, we visited six universities or university systems for such presentations. In each, the participants demonstrated great interest in the presentations and engaged NSF OIG staff in constructive question-and-answer sessions to refine their understanding of the subjects being discussed. In addition, we participated in an event sponsored by the American Association of State Colleges and Universities.

Working with the Federal Community

Outreach on Grant Fraud. NSF OIG staff members interact with their counterparts in the IG community on a regular basis. Our investigators led efforts to educate the community about grant fraud and achieve a greater understanding of the similar characteristics of grant fraud and procurement fraud. OIG received increasing requests for our grant fraud investigators to serve as instructors to other IGs, and we frequently met and worked with individuals from a number of federal agencies and OIGs on a host of professional matters. These included presentations in conjunction with the Inspector General Academy and for OIGs at agencies including USDA, USAID, and NASA. We participated in an event sponsored by the Metropolitan Washington Council of Governments, and we made a presentation to the Procurement Fraud Working Group for the Eastern District of Virginia U.S. Attorney's

Office. These professional interactions were pursued both on an office-to-office level, to address requests for particular assistance, and within the context of the Council of Counsels to Inspectors General and numerous committees of the President's / Executive Councils on Integrity and Efficiency (PCIE/ECIE). NSF OIG continues to actively participate in the PCIE/ECIE Investigations Committee, the PCIE/ECIE Inspection and Evaluation Committee, and the PCIE GPRA Roundtable meetings.

Audit Outreach Activities. OIG auditors have met monthly during this reporting period with auditors from a number of other federal OIGs at the Financial Statement Audit Network to review and comment on proposed accounting standards and requirements for federal financial statement audits, changes to the Government Auditing Standards, 2006 Revisions (the "Yellow Book"), and the Federal Accounting Standards Advisory Board's Proposed Statement of Federal Financial Accounting Concepts on Definition and Recognition of Element of Accrual-Basis Financial Statements. Additionally, we actively participated in interagency workgroups focused on updating the GAO/PCIE Financial Audit Manual, standardizing the government-wide statement of work used to procure the financial statement audit contractors, and updating the Audit Monitoring Guide that assists OIGs in monitoring the quality of the financial audit performed by the external auditors.

Working with NSF

Participation in NSF briefings and seminars. Our work within NSF continues to advance our goal to improve OIG effectiveness by enhancing communications with agency management and staff. During this semiannual period, three OIG presentations were made to the National Science Board. We also continued to speak at the conflict-of-interest briefings conducted by the NSF ethics official approximately twice per month. Our participation allows us to communicate directly with the majority of NSF employees about the OIG mission and responsibilities, our ongoing liaison program with NSF, and the channels through which employees can bring matters to our attention.

Another valuable forum for OIG outreach within the agency is the NSF Program Manager's Seminar. OIG staff gave presentations at each of these seminars, which provide new NSF program managers with detailed information about the Foundation and its activities. These sessions gave OIG staff an opportunity to develop personal and professional relationships with their NSF colleagues, as well as educate them about the role and activities of the NSF OIG. Conversely, we also learn about new developments within NSF program management.

During this semiannual period, we continued to build on our success in establishing effective communications and professional relationships with

Helping to Train the IG Community

OIG is frequently invited to contribute to training events for others within the IG community to share our experience in handling research misconduct and grant fraud cases.

During the last six months, a team from NSF OIG provided two training sessions on research misconduct investigations to approximately 100 USDA OIG personnel during that office's National Professional Development Conference. Another NSF OIG team provided training on grant fraud investigations to United States Agency for International Development OIG personnel during their training conference. A third OIG team provided training at the IG Academy as part of its Procurement Contract and Grant Fraud Training Program.

the individual directorates and offices within NSF through our liaison program. OIG liaison teams (each normally consisting of an investigator and an auditor) serve as a valuable conduit of information between our offices in the course of approximately 30 liaison events. We also solicited ideas from the individual directorates and offices for matters we should consider for OIG review in the future.

Special Projects

Assistance in NSB's Examination of Federal Policies Concerning Suppression of Research Findings. At the request of the National Science Board, the Inspector General surveyed her counterparts at agencies engaged in science research to determine whether the issue of suppression or distortion of research findings among scientists had surfaced in any OIG audits, inspections or evaluations. The OIG requested information from National Aeronautics and Space Administration, National Oceanic and Atmospheric Administration, Fish and Wildlife Service, U.S. Geological Survey, U.S. Department of Agriculture, Environmental Protection Agency, Department of Energy, and Department of Health and Human Services. The OIGs at these agencies had issued no reports that indicated scientific information had been suppressed or distorted. This information helped the NSB respond to a request from Senator John McCain for an examination of existing policies of federal science agencies regarding the suppression and distortion of research findings and the impact of such actions.

Updating of Audit Position Descriptions. The Office of Audit updated 14 position descriptions, including its auditor and management analyst positions, to include the skills and capabilities that have become necessary to perform these jobs successfully, such as critical thinking and effective communication. The existing position descriptions, which were more than 15 years old, were outdated and contained many irrelevant details. A team of OIG auditors and management analysts worked with NSF personnelists to define new core competencies and describe how each would be executed at the entry, intermediate, journeyman, and senior level. By more clearly specifying what the Office of Audit expects of auditors and management analysts at each grade level, the new position descriptions will enable us to improve the hiring process, identify training needs more effectively, and improve our ability to coach and evaluate employees.

Coordination of the FY 2005 PCIE/ECIE Progress Report to the President. The President's Council of Integrity and Efficiency and the Executive Council of Integrity and Efficiency each year issue a report to the President on the most significant activities and accomplishments of the federal Inspectors General community. This year's report was prepared jointly by the Department of Agriculture and the National Science Foundation OIGs. In FY 2005, the Inspectors General identified $20 billion in potential savings government-wide, and completed investigations that resulted in 9,900 suspensions and debarments of business and individuals for inappropriate activities and 7,700 successful prosecutions. The report can be found at www.ignet. com.

Significant Reports

Fiscal Year 2005 Management Letter Report Cites Need for Improved Financial Management Practices

The FY 2005 Management Letter[1] identified 17 findings related to NSF's financial reporting controls and operations, 12 of which were repeated from the prior year. As a result of those findings, the Management Letter recommended that NSF: continue to improve its contracts and post-award monitoring programs; expand its definition of improper payments; seek guidance on the accounting treatment of post retirement benefits at Federally Funded Research and Development Centers (FFRDCs) and environmental clean-up costs in the Antarctic; report outcome-oriented cost efficiency measures; and develop accounting policies and procedures, including policies and procedures for the review and approval of purchase card transactions.

The Management Letter found continuing weaknesses in NSF's contracts and grants monitoring programs. For example, NSF did not approve the FY 2005 annual program plan of its largest advance-payment contractor, Raytheon Polar Services Corporation, until the end of the fiscal year. The auditors recommended that NSF approve contractors' annual program plans timely to prevent contractors from incurring unauthorized costs. Further, NSF did not always obtain timely annual cost incurred submissions on cost reimbursable contracts for which NSF is the contractor's cognizant agency. Since these contracts are initially based on cost estimates, federal regulations require that contractors submit cost incurred submissions within six months after the end of the contractor's fiscal year to promptly determine the actual cost of the contract for that year. The auditors recommended that NSF ensure that all cost reimbursable contractors submit cost incurred submissions and that NSF contracting officers review them timely.

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[1] A management letter discusses findings identified during a financial statement audit that warrant management attention, but are not material in relation to the financial statements.

For the fourth year the Letter found that NSF did not always receive timely (or any) final project reports or annual progress reports; and in some cases NSF approved new funding for an awardee that had not filed a required annual progress report. The auditors recommended that NSF ensure that these reports are received when they are due so that program performance can be properly evaluated. Documentation serves as a key record of the agency's observations and efforts to monitor an awardee and is a valuable source of information for management's oversight of the program.

For the second year, the Management Letter identified weaknesses in NSF's process of estimating improper payments as required by the Improper Payments Information Act 2002 (IPIA). For testing purposes, NSF defined erroneous payments as "expressly unallowable" payments, thus excluding unallowed, unallocable, or unreasonable costs as defined by IPIA. This limitation increases the risk that NSF has not identified all erroneous payments, and the auditors recommended that NSF use the IPIA's more inclusive definition of improper payments.

Also for the second year, the Management Letter recommended that NSF seek guidance from the Federal Accounting Standards Advisory Board (FASAB) to resolve two unusual issues. It suggests that NSF ask FASAB how to account for post retirement benefits at Federally Funded Research and Development Centers (FFRDC) that it wholly supports. In one case, neither NSF nor the FFRDC reported this liability on its financial statements. FASAB's guidance is necessary to ensure that the entity responsible for this liability is correctly recognizing, recording, and reporting it. The Letter also found that NSF needs to clarify its responsibilities for environmental clean-up costs in the Antarctic. Although the treaty that governs NSF's responsibilities in the Antarctic states that NSF has responsibility for remediation of environmental incidents, it does not appear to provide for concomitant liability. To ensure that NSF prepares accurate financial statements, the auditors recommended that NSF immediately ask FASAB how to account for clean-up costs for which it has a treaty obligation but no apparent legal liability.

For the fifth year the Letter stated that NSF does not report basic outcome-oriented cost efficiency measures, such as the cost of awarding or administering a grant, in its Performance and Accountability Report, but instead reports on administrative cost savings resulting from new technology and/or changes to business processes. Reporting both outcome-oriented cost efficiency measures and cost savings measures provides more useful information to stakeholders about the efficiency of NSF's internal grant-making and administering processes. The auditors therefore again recommended that NSF develop and report cost efficiency measures that relate to its output and outcome goals.

The Letter also reiterated a prior recommendation that NSF document its accounting policies and procedures. In addition, it recommended that NSF

develop standard policies and procedures for the review and approval of purchase card transactions. The lack of documented accounting policies and procedures can result in inefficient and/or duplicative accounting procedures. The lack of standard policies and procedures for the review and approval of all purchase card transactions prior to payment can result in undetected unauthorized purchases.

NSF management generally concurred with a number of the recommendations in the Management Letter, and the FY 2006 financial statement audit, currently underway, is evaluating NSF's actions in response to the findings and recommendations to determine whether the issues have been resolved.

Constituents Want Expanded Access to NSF Research Results

During this semiannual period we issued the last in a series of three audit reports examining NSF's policies and practices for reporting on and disseminating the results of the research it funds. This final audit report assessed the interest among NSF's constituents, including researchers, educators, librarians, minorities, women, and journalists, for NSF making the results of the research it funds available on its website. Representatives of 7 organizations representing NSF constituents, as well as 18 NSF program managers, overwhelmingly supported NSF providing more research results on its website. Furthermore, they stated that the best formats for conveying the information were brief summaries of the research results and citations of the journal publications resulting from the research. Based on the membership of the organizations we interviewed, NSF could reach tens of thousands of interested users by placing more results information on its website.

A key factor in furthering science and ensuring accountability for federal research dollars is communicating the results of the scientific research. Communicating research results may advance knowledge, stimulate new research ideas, and interest future scientists, engineers, and educators. The websites of federal agencies funding basic research can play an important role in disseminating research results to scientists as well as other interested constituents, such as educators or journalist. However, NSF has historically only provided the public with information on proposed research, not results. While NSF has recently begun planning to provide citations of journal articles resulting from NSF-funded research on its website, the audit found that NSF constituents were interested in even more information about research results.

In light of government-wide efforts to reform and standardize how research results are reported by scientists to the federal agencies funding them, the audit report recommended that NSF advocate for including brief summaries of research results in the grant reporting template currently being developed. NSF could then make the summaries available on its website. Additionally, the report recommended that NSF consider providing links to the actual

abstracts of journal articles resulting from NSF research. NSF agreed that more research results should be made available and is examining the feasibility of providing links to abstracts of journal articles on its website. The agency is still considering the recommendation to advocate for including brief summaries in the new standardized, government-wide reporting format.

Oversight of Awardee Indirect Costs Needs Improvement

The OIG completed two audits during this semiannual period that assess issues related to NSF's oversight of indirect costs submitted by grantees. Indirect costs, sometimes referred to as overhead, are expenses that pertain to common administrative support activities, such as operation and maintenance of buildings, payroll and accounting functions, and information technology services. Unlike direct costs, which are charged in their entirety to awards, indirect costs are allocated based on an indirect cost rate that the awardee institution negotiates with the federal government. Approximately 20 percent, or $1.1 billion of the $5.6 billion of costs budgeted on NSF grants in FY 2006 are for indirect costs. Because of the significant dollar amount of indirect cost charges to NSF grants, it is important that NSF ensures that all awardee institutions correctly apply the federally negotiated rate, and NSF properly negotiates the indirect cost rates for the approximately 90 organizations for which it is responsible. Proper management of awardee indirect costs helps ensure that limited NSF funds achieve the maximum amount of program results.

NSF Policy for University Indirect Cost Recovery Is Inconsistent with Federal Grant Requirements

Contrary to federal grant requirements, NSF allows universities and colleges to recover indirect costs utilizing rates negotiated subsequent to making the initial grant award. Federal policy requires universities to use the rate or rates in effect at the time of award throughout the life of each competitive award in order to preserve the level of funds spent on research as opposed to administrative and facility support. Our review of 23 of NSF's top 100 funded universities found the policies at 14 universities followed federal requirements. However, University of California policy allowed its nine campuses to use newly negotiated rates, as permitted by NSF policy, and three of the campuses actually used the NSF option. As a result, these campuses inappropriately shifted $1.9 million from direct research to administrative and facility support over a nine-year period. Such reductions in funds supporting research could jeopardize the successful achievement of NSF research objectives.

The federal requirement allows funding agencies to know with certainty the total funds available for research throughout the award. Inconsistency between NSF's policy and federal requirements has created confusion in the awardee community regarding the appropriate indirect cost rate to charge

on federal awards. NSF agreed with the audit recommendation to revise its Grant Policy Manual provisions for recovering indirect grant costs to make them consistent with the federal requirement by the end of this year.

More Comprehensive Process for Reviewing Indirect Cost Rates Is Recommended

An audit of NSF's procedures for reviewing indirect cost rate proposals indicates that NSF could improve its process to identify overstated, incomplete or missing proposals. The audit revisited recent OIG audits of indirect cost proposals for the period 1995 through 2002 submitted by 11 non-profit institutions, analyzed the results, and found four problems common to most of the proposals: overstated indirect costs, understated direct cost bases, inadequate support for costs included in pools or bases, and untimely or missing submission of indirect cost proposals. These problems occurred because the institutions lacked an understanding of the federal requirements for calculating indirect cost rates, were missing or had inadequate policies to prepare indirect cost proposals, and had deficient accounting and/or time and effort reporting systems. Without a reliable and comprehensive proposal review process, NSF risks negotiating inflated indirect cost rates resulting in overpayment of indirect costs.

The audit also compared NSF's proposal review process to guidance in Office of Management and Budget (OMB) Circulars and four federal agencies' policies for reviewing indirect cost proposals and found that NSF can do more to detect and prevent the recurring problems we found in our audits. For example, NSF did not: 1) have a proposal review guide for its staff to ensure thorough and consistent examination of proposals; 2) obtain current information to assess the quality of awardees' financial management systems used to prepare indirect cost proposals; and 3) consistently maintain information about prior indirect cost rate negotiations to facilitate trend analysis, identify significant changes in indirect cost proposals, and help determine the accuracy of the current proposals. Further, we found that institutions often submitted late proposals or did not submit a proposal at all, preventing NSF from determining if the rates used to charge indirect costs to federal awards were current and accurate. Because NSF lacked a comprehensive process for proposal review, it increased the risk of not detecting inflated indirect cost proposals.

Accordingly, we recommended that the Director of the Division of Institution and Award Support develop a risk-based program to review indirect cost proposals. The program should include updated assessments of awardees' financial management systems, maintenance of historical files on awardees' prior rate negotiations, guidance for reviewers to use in processing submitted proposals, and more effective tracking of proposal receipt and follow-up for late proposals. In response to our findings, NSF agreed to continue to improve its program for review and negotiation of indirect costs, and is developing a corrective action plan to address the report recommendations.

Contract Audits

Audits of Polar Support Contractors

At NSF's request, the OIG contracted with the Defense Contract Audit Agency (DCAA), to complete a series of audits of the financial reports and practices of Raytheon Polar Services Company (RPSC), the Antarctic support contractor, and VECO Polar Resources, the Arctic support contractor. Combined, NSF spends approximately $130 million annually on these two contracts to provide logistical and operational support for scientific research performed in the polar regions. The OIG and DCAA issued five reports during this semiannual period in support of this request.

Questioned Costs Rise to $55.5 Million in Audits of Raytheon Polar Services Company as Additional Compliance and Control Problems Are Found

RPSC provides science, operations and maintenance support to sustain year round research in NSF's United States Antarctic Program (USAP). During this semiannual period, DCAA completed four audits of RPSC in which it questioned $22.1 million of RPSC's fiscal year (FY) 2003-2004 final payment claim; placed RPSC on notice that it must immediately file a federally mandated cost accounting practices statement or face administrative penalties; and identified internal control failings in both the Colorado and New Zealand offices that, if not corrected, will require costly and extensive oversight by NSF to ensure RPSC is adhering to federal regulations and the NSF contract. In an earlier audit, $33.4 million, or 9.2 percent of the $363 million costs claimed by RPSC for the three-year period ended December 31, 2002 were questioned by the auditors[2].

DCAA questioned $22.1 million or 7.3% of the $300.7 million that RPSC claimed for payment for FYs 2003 and 2004. Of these costs $18.1 million were questioned because RPSC erroneously claimed indirect costs as direct costs. After the auditors properly reclassified the indirect costs, they questioned an additional $2.5 million of indirect costs that exceeded the limitations specified in the contract and $1.5 million of unallowable costs for alcohol, entertainment, souvenirs, and fringe benefits. The additional $22.1 million of questioned costs, combined with the previously reported $33.4 million that was questioned for the same reasons during the audit of costs claimed for FY 2000 to 2002, brings the total questioned costs for the five-year period ending December 31, 2004 to $55.5 million. Of the questioned costs, $39.2 million, or 70 per-

A view of Palmer Station, the smallest of the three U.S. Antarctic Program research stations.

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

cent, were indirect costs, which RPSC improperly reclassified and claimed as "other direct costs" because they exceeded the contract ceilings.

By claiming indirect costs as direct costs, RPSC violated its federal Cost Accounting Standards Board (CASB) disclosure statement. In response, on August 22, 2006, the Department of Defense (DoD), which is responsible for overseeing RPSC's compliance with its CASB disclosure statement on all federal contracts, issued a determination of noncompliance to RPSC's parent, Raytheon Technical Services Company (RTSC), for the three-year period ending December 31, 2002. NSF is now pursuing administrative processes to resolve the $39.2 million of improperly billed indirect costs from RPSC.

In an audit of RPSC's cost accounting disclosure statement, the auditors found that contrary to federal requirements and its NSF contract, Raytheon removed RPSC from its own CASB disclosure statement effective January 1, 2005, leaving RPSC to perform without any disclosure of its cost accounting practices. When the auditors notified Raytheon of this violation, it submitted a CASB disclosure statement for RPSC, retroactive to January 1, 2005. Under this new disclosure statement, RPSC proposed to classify and bill some of its direct and indirect costs consistent with practices that were previously unauthorized under the prior disclosure statement. Accordingly, DoD requested that RPSC provide an analysis of the additional costs that are likely to result under this disclosure statement as a basis to decide whether to approve the recently proposed cost accounting practices.

Two other audits issued during this period identified significant internal control weaknesses in RPSC's Colorado and New Zealand financial management operations that contributed to the conditions that caused auditors to question $55 million of claimed costs and could adversely affect future RPSC billings to NSF. Specifically, RPSC Colorado does not adequately train its employees to accurately identify, classify, and monitor restricted funds and unallowable costs; adequately segregate the duties of billing preparers, reviewers, and certifiers to prevent or identify billing errors; or have written policies and procedures to reconcile expenditure reports to accounting records and monitor its subcontractors' accounting and billing systems.

Auditors found similar deficiencies in the internal controls governing RPSC New Zealand's accounting and labor distribution systems. Expressly unallowable costs for gifts, entertainment, and alcohol, amounting to $1.37 million were charged to the NSF contract and $300,000 of labor costs annually were improperly classified as "miscellaneous other direct costs," resulting in an understatement of total direct labor costs incurred by RPSC and reported to NSF. In addition, payroll accounting duties were not properly segregated, increasing the risk that undetected billing errors could occur; and poor controls existed over employee timesheet certification, review and approval. These deficiencies could result in inaccurate charges to NSF's contract.

The audit reports recommended that NSF continue to coordinate with DCAA and DoD to have RPSC correct its cost accounting practices and preclude charges exceeding its indirect cost ceilings. In addition, the reports recommended NSF recover the questioned costs plus interest and ensure that RPSC establishes adequate policies and procedures, including an internal compliance oversight program and an employee training program. The reports also recommended that NSF ensure RPSC maintains adequate documentation; conducts periodic reviews of its billing process; informs personnel of the NSF contract requirements; and monitors its subcontractors accounting, timekeeping and billing systems. NSF is reviewing the recommendations and is working with RPSC and DoD to address the findings and recommendations, including the $55 million in questioned costs. In the next semiannual period, DCAA will begin a review of the $122 million of costs claimed by RPSC for FY 2005, and complete its audit of the new proposed RPSC CASB disclosure statement.

Audit of Major Arctic Contractor Identifies $2.6 Million of Inadequately Supported Labor Costs

Similar to RPSC, VECO Polar Resources (VPR) provides logistics support services to NSF's Arctic research program. DCAA audited $21.9 million of costs claimed by VPR for the three-year period ending March 31, 2003 and found that timesheets used to capture the daily hours worked by the employees were not routinely signed by employees and supervisors to ensure their completeness and accuracy. As a result, the auditors were unable to provide an opinion on the accuracy of the $2.6 million in labor costs charged to the NSF contract. In addition, DCAA questioned $17,200 of unallowable bonus costs awarded to VPR employees because VPR did not have an established bonus plan or a prior written agreement as required by federal regulations to ensure that bonuses paid were fair and equitable.

The auditors recommended that NSF direct VPR to develop and implement adequate timekeeping policies that ensure compliance with federal and NSF requirements for charging labor and bonus costs to the NSF contract. VPR responded that it had revised its timekeeping policies and procedures but did not agree that the bonus costs should be questioned. NSF is reviewing the audit recommendations. DCAA will complete its audit of VPR's CASB disclosure statement for adequacy and compliance with government contracting regulations in the next semiannual period.

Grants Audits

Awardees Lack Understanding and Policies to Manage NSF Funds

In audits issued during this semiannual period of three universities, two centers, and two non-profit organizations, we estimated that $9.2 million of labor

costs charged to NSF awards may not have benefited those awards, questioned $2.9 million of cost sharing and $750,000 of NSF-funded costs, and found that a grantee's proposed indirect cost rate was 13 percentage points higher than its actual rate. These problems occurred because grantees had inadequate accounting controls, time and effort systems, policies and procedures, or understanding of federal and NSF requirements. To follow up on our findings and recommendations we have forwarded the audit reports to NSF's Division of Institution and Award Support to resolve any questioned costs and ensure corrective action.

Subawardee Oversight at Two Science and Technology Centers Needs Improvement

Financial audits of the Center for the Sustainability of semi-Arid Hydrology and Riparian Areas (SAHRA) at the University of Arizona and the Center for Behavioral Neuroscience (CBN) at Georgia State University both identified a significant weakness in subawardee oversight. Neither Center monitored their subawardees to ensure that claimed costs were accurate, allowable, allocable, and properly documented per federal and NSF regulations. As a result, we questioned $335,187 of subaward cost share expenditures and $19,751 of NSF-funded subaward costs for which neither the SAHRA Center nor its subawardee could provide adequate supporting documentation. Similarly, for the CBN, we questioned $271,376 of subaward cost share expenditures and $132,835 of subaward costs. In addition, our audit identified other compliance and internal control weaknesses contributing to an additional $32,986 in questioned costs at the SAHRA Center and $55,573 at the CBN.

We recommended that both the University of Arizona and Georgia State University develop and implement written policies and procedures to assess and document each subawardee's risk of claiming non-allocable or non-allowable costs, including cost sharing expenditures. The Universities should perform their reviews of each subawardee's invoices and cost-sharing expenditures consistent with the subawardee's risk assessment to ensure amounts claimed are allowable, allocable, and properly documented. We also made several recommendations pertaining to the other compliance and internal control weaknesses identified in the audit. Generally, the University of Arizona agreed with the audit recommendations and indicated that it has initiated corrective actions. Georgia State University agreed to consider but did not commit to implementing, our recommendation that it establish a risk-based subawardee monitoring program. The University partially agreed with the remaining recommendations and submitted additional information to support the costs.

Systemic Weaknesses Found in University's Effort Reporting System

An OIG audit found that weaknesses in the University of Pennsylvania (UPENN) effort reporting system prevented it from adequately supporting a significant portion of labor charged to NSF grants. The audit disclosed two

major systemic internal control deficiencies that affected UPENN's processes for accounting and charging labor effort costs to NSF awards: 1) UPENN's business managers were certifying labor effort reports, though they were not in a position to know whether work was performed, and 2) effort reports were not certified in a timely manner as specified by UPENN policy. As a result, we estimated that UPENN could not demonstrate that at least $9.2 million or 37 percent of the $24.9 million of labor costs charged to NSF in fiscal years 2002 through 2004 actually benefited NSF awards as opposed to other federal or university activities. These weaknesses raise concerns about the reasonableness of the labor effort charges on UPENN's other $525 million of federal awards.

These problems occurred because UPENN did not have specific procedures to help business managers understand the actions necessary to verify work was performed as shown on effort reports, and Department Chairs were not held accountable for ensuring the timely completion of effort reports. In addition, UPENN did not conduct a federally required independent evaluation of its payroll distribution system to ensure the system's effectiveness in distributing salary and wage costs to all activities, including individual sponsored projects. In response to our audit, UPENN revised its effort reporting policies and procedures to require business managers to obtain written after-the-fact documentation from Principal Investigators (PIs), clarified its policy regarding the documentation needed to support salaries, and assigned Department Chairs responsibility for the timely completion of effort reports prepared by their faculty and staff. UPENN also agreed to conduct an independent review in FY 2007 to determine whether its new electronic effort reporting system and revised policies and procedures are working as intended. We recommended that NSF follow-up with UPENN to determine whether the review meets federal requirements.

Consortium Is Unable to Track Costs on NSF Grants

The Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI) did not have a financial management system that provided a complete accounting of its three NSF awards amounting to $2.9 million, according to a recent OIG audit report. Specifically, CUAHSI could not identify funds authorized, spent, or remaining by individual award and did not have the capability to compare budgeted to actual costs. As a result, CUAHSI overspent one award and overcharged NSF for another. It also caused NSF to delay funding a hydrologic project and restrict the consortium's payments, thereby increasing NSF's administrative burden. Furthermore, CUAHSI could not readily locate source documents and claimed questionable costs of $69,978, approximately one-half of which were related to the director's housing allowance. These issues occurred because CUAHSI lacked a qualified accountant and did not ensure that its personnel were knowledgeable about federal rules for allowable costs and accounting controls. In its response, CUAHSI agreed to reimburse almost half of the questioned costs, as well as implement all of our recommendations to improve its accounting over NSF funds.

Museum's Indirect Cost Rate is Overstated

Auditors found that the process used by the North Carolina Museum of Life and Science to prepare its fiscal year 2003 indirect cost proposal was not in compliance with federal grant requirements. The Museum did not have adequate written procedures to prepare its indirect cost rate or to ensure that only allowable costs were included in its calculation. As a result, we calculated that the Museum's FY 2003 indirect rate should have been 30 percent as opposed to 43 percent. If the recommended 30 percent rate had been applied to one of the three NSF grants audited, NSF could have reduced its indirect cost funding by $139,175 for the subject award and realized significant savings that could have been redirected. The audit also identified four other internal control issues: cost sharing reporting deficiencies, time keeping system weaknesses, improper allocation of compensated absences, and improper accounting for fixed assets. In its written response, the Museum accepted most of the monetary audit adjustments and agreed with all of the recommendations to improve internal controls over NSF funds.

University Control Deficiencies Result in Poor Grant Oversight and Award Overcharges

An audit of $3 million awarded to New Mexico Highlands University (NMHU) found that the University had systemic weaknesses affecting the oversight of its NSF grant funds. In particular, NMHU's internal controls were not adequate to properly administer, account for, and monitor its NSF awards in compliance with NSF and federal grant requirements in the areas of cost sharing, subawardee monitoring, expenditure reporting, and conflict of interest statements.

NMHU could not readily identify in its accounting records or provide adequate documentation to support $1.9 million (90 percent) of the $2.1 million in cost sharing it claimed to NSF. Likewise, NMHU lacked adequate policies and procedures to monitor and ensure the allowability of $2.2 million of subawardee costs, although subaward costs represented 73 percent of the total claimed costs. Subsequent on-site testing at two NMHU subawardees allowed the auditors to determine that all of the subawardee costs charged to the NSF grant except $81,787 were allowable. However, without better oversight practices NMHU cannot ensure that subaward costs on other or future NSF awards are allowable.

Additionally, NMHU inaccurately reported its award costs to NSF because it did not reconcile claimed costs with its official books of record. This internal control deficiency resulted in NMHU reimbursing NSF $46,458 for overcharges. The auditors also questioned $60,000 for materials and supplies purchased at the very end of the grant period that did not appear to have benefited the NSF award; $12,720 of travel, material and supplies, and consultant costs which lacked supporting documentation; $6,276 of salary costs

charged to an NSF award for a professor who did not work on the grant; and $4,689 of scholarship costs paid for students who were not eligible to participate in the NSF program. Finally, contrary to its conflict of interest policy, NMHU could not provide conflict of interest disclosure statements for either the PIs or Co-PIs for any of its NSF awards.

The report recommended that NMHU establish a system to identify, account for, monitor, report, and document cost sharing and establish a system, including policies and procedures, to monitor the allowability of subaward costs claimed to NSF. The report also recommended that NMHU develop and implement policies and procedures that enable it to report actual costs incurred for NSF grants to NSF as recorded in its official books and records and maintain conflict of interest disclosure forms for all PIs and Co-PIs. NMHU generally agreed with the audit recommendations and indicated that it has initiated corrective actions.

University Receives Qualified Opinion

A financial audit of a $9.8 million award to the University of Hawaii (UH) resulted in a qualified opinion because management was unable to provide its actual labor cost sharing contributions. UH used budgeted percentages to charge labor time and effort cost sharing without making any adjustments to reflect changes in actual workload over the five-year period of the award. Therefore, the accuracy of $1.7 million or 39 percent of the total $4.3 million of labor cost sharing charged over the five-year period of the award, could not be verified. In addition, auditors questioned $265,000 of subcontractor costs and $305,000 of subcontractor cost sharing, which was not documented.

Accordingly, the auditors recommended that UH revise its procedures to claim actual rather than budgeted amounts for labor cost sharing. The auditors also recommended that UH clarify and update its policies and procedures for accounting for cost sharing and ensure that adequate documentation for all subcontract costs and subcontractor cost sharing is maintained. UH generally concurred with the findings and recommendations and plans to amend its labor cost sharing policies and procedures.

Audit Resolution

University Works to Improve Accountability over Grant Funds

A prior audit of $10 million awarded on five NSF grants to Howard University found that the institution lacked a system of internal controls to provide reasonable assurance that grant funds were being used for the purpose for

which they were awarded[3]. Significant weaknesses were identified in the University's internal controls over cost sharing, funds passed-through to sub-awardees, faculty salaries, and student stipends. The audit determined that the University could not support $12.3 million of claimed cost sharing due to the lack of documentation and the commingling of funds. Howard University also lacked comprehensive subaward agreements legally obligating its sub-recipients to provide $5.4 million of cost sharing and to restrict $2.3 million of funding to participant support and/or trainee costs.

Howard University has undertaken concerted efforts to implement the audit report recommendations. It has issued a new operations manual establishing policies and procedures for managing and monitoring federal grants and has initiated a major reorganization of the University's research enterprise. To oversee research, the Board of Trustees has approved a new organization that will be managed by a cabinet-level Vice-President for Research and Compliance. It also engaged a consultant to assist the University in establishing an appropriate structure for managing the research enterprise, and to help establish effective grant administration controls.

NSF's Division of Institution and Award Support (DIAS) is working with Howard University to develop an appropriate corrective action plan for implementing the audit recommendations. Furthermore, to address the University's systemic internal control weaknesses that affect all federal grant funds, DIAS is coordinating its audit resolution efforts with the cognizant audit agency, the Department of Education, and the largest federal sponsor of research funding, the Department of Health and Human Services. NSF has provided both of these federal agencies with copies of the audit report and the University's proposed corrective action plan. Furthermore, it has proposed a joint site visit with these federal agencies to validate the progress made toward implementing the corrective action plan.

NSF Secures a Fundraising Strategy from a Foreign Awardee

An audit of NSF awards to the Inter-American Institute for Global Change Research in Brazil, disclosed that NSF, on behalf of the United States, was funding a disproportionate share of the Institute's total research costs, and that the Institute had not properly managed its NSF-funded subawards, valued at over $10 million[4]. NSF provided technical assistance and conducted two site visits to Institute offices to ensure implementation of the audit report recommendations. In addition, NSF worked closely with other member countries to hire a new Executive Director and require the development of a fundraising plan to ensure the Institute's continued financial viability. NSF will also monitor the Institute's progress in implementing its fundraising plan. These combined corrective actions should position the Institute to better manage its most recent $10.4 million NSF award.

[3]March 2006 Semiannual, Report, pp. 17-18.
[4]September 2004 Semiannual Report, pp. 17-18.

OIG Audit Results in Recovery of $639,996

NSF sustained $639,996 of the costs questioned during an audit of San Francisco Unified School District (SFUSD) completed in March 2006[5].   The district lacked the required employee certifications and personnel activity reports to support claimed salary and fringe benefit costs, and an adequate system to properly identify and account for the cost sharing contributions it reported to NSF. SFUSD also did not conduct timely reconciliations of the costs it claimed to NSF with its accounting records to ensure the validity of those costs. Of the $9.2 million SFUSD claimed on its NSF award, auditors questioned $712,620, including $69,315 of salaries and associated fringe benefit costs that should have been charged to SFUSD's general fund, $427,844 of costs that were not recorded in SFUSD's accounting records, and $215,445 for overcharges of indirect costs.

In response to the audit, SFUSD indicated that it has developed policies to assure the proper accounting for cost sharing and indirect costs, enhanced its procedures for reconciling costs reported to NSF with its accounting records, and implemented time certification and labor effort reporting procedures. SFUSD also reported that it will train staff and hold quarterly meetings to ensure correct charges are made to NSF awards. NSF will conduct a follow-up review to ensure that SFUSD has fully implemented its corrective action plan prior to awarding it any new funding.

School District Charged $100,000 for Failure to Properly Document Cost Share Expenses

As a result of an OIG audit, NSF imposed a $100,000 disallowance on Fresno Unified School District (FUSD) for failure to properly document cost shared expenditures.[6]   The school district had lacked adequate records to support meeting its $17.5 million cost sharing commitment for the period ending August 31, 2000. As a result of this material weakness, the auditors questioned $6.8 million of NSF's share of total project costs. The audit also questioned $220,000 of indirect costs because FUSD did not accurately calculate or consistently charge its indirect cost rate.

In addition to the disallowance, NSF also agreed to advise FUSD in writing of the need to take corrective actions including: implementing proper systems to identify, track, and report cost sharing and participant support costs; en-

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[5] March 2006 Semiannual Report, p. 16.
[6] March 2005 Semiannual Report, p. 19.

suring that employees maintain proper documentation to support salary and wage charges in compliance with federal and NSF requirements; and providing training to appropriate personnel to properly calculate indirect costs. Also, NSF will conduct a preaward review, to ensure that the issues identified in the audit have been corrected before making any future awards to FUSD.

School District Corrects Internal Control Deficiencies

In the September 2005 Semiannual we reported on our audit of the School District of Pittsburgh (SDP).[7]   SDP did not have a system to ensure accurate and timely completion of labor effort certifications and could not adequately account for cost sharing. Both of these material weaknesses were also reported in a July 1997 OIG audit of SDP. We questioned $900,000, or 21 percent, of salaries and wages and related fringe benefit and indirect costs claimed under the award. We also questioned $2.1 of the $4.6 million of cost sharing claimed and identified another $800,000 of cost sharing as "at risk" of not being met, primarily because SDP could not verify that the costs were incurred for the benefit of the NSF awards.

NSF agreed with all of our compliance and internal control recommendations to correct the repeated findings. Subsequently, NSF verified that SDP had revised its internal policies and procedures to rectify these deficiencies. During audit resolution, NSF also sustained $7,696 in questioned salary and fringe and participant support costs and accepted alternative documentation for the remaining questioned costs.

Audit Findings Prompt Improvements at College

During a 2004 audit of Northwest Indian College (NWIC), the auditors questioned all of the $1.1 million of direct costs claimed and the entire $35,000 of cost sharing required on two expired awards.[8]   They also found that NWIC lacked an adequate financial management system for recording the receipt and expenditure of funds for NSF projects and did not have source documentation to support the costs charged to NSF projects.

As a result of the audit, NSF visited NWIC to provide award management assistance and oversight. NSF found that NWIC had hired an accounting firm to perform required federal audits for FYs 2002 to 2004 and help NWIC identify and organize the documentation to support its claimed NSF costs. NSF did not sustain any of the questioned costs because the agency's program officers confirmed that NWIC satisfactorily completed the work performed under the awards. NSF agreed to further review NWIC if it is considered for future funding.

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[7] September 2005 Semiannual Report, p. 16.
[8] September 2004 Semiannual Report, pp. 18-19.

Work In Progress

Labor Effort at Universities

As reported in our September 2005 Semiannual Report,[9] OIG initiated a review to assess the adequacy of accounting and reporting processes for labor costs at NSF's top-funded universities. The review was initiated as a result of the growing number of disputes involving overcharges of staff time amounting to millions of dollars at several major universities as evidenced by legal actions brought by various federal agencies and reported in the media. In addition, approximately one third of all NSF award funds provided to universities are spent for salaries and wages. As part of the review, we issued an audit report on the labor effort practices at the University of Pennsylvania[10] and are completing an audit at the California Institute of Technology. We anticipate awarding contracts to independent public accounting firms by the end of October 2006 to audit the labor effort practices at another five universities.

National Single Audit Sampling Project

In November 2004 the Inspector General community undertook a government-wide initiative to assess the quality of audits performed under OMB Circular A-133. Our office actively participates on both the project's advisory board and its management staff, because of the importance of A-133 audit quality to NSF's post-award administration efforts, particularly in monitoring the approximately $5 billion of awards it funds annually.   In this semiannual period, federal and state auditors along with public accounting firms under contract completed their quality control reviews of 208 A-133 audits, which were statistically selected from a universe of over 30,000 audits. When the project's management staff completes its analysis of the review results, its assessment of quality will be used to improve audit guidance to the public accounting firms performing A-133 audits.   We anticipate a report will be issued during the next semiannual period.

Review of Pension and Medical Benefits at NSF Federally Funded Research and Development Centers (FFRDCs)

Our office initiated an audit to determine the reasonableness of pension and medical benefits provided at five FFRDCs, which manage some of NSF largest facilities and programs. We hired a consulting firm to assist in identi-

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[9] September 2005 Semiannual Report, p. 20.
[10] See P. 21 of this Semiannual Report.

fying the value of the pension and medical benefits provided to retirees and current employees. The consultant compared the benefits provided to employees at these FFRDCs with those offered at other similar institutions and evaluated the accuracy of the FFRDCs' $85 million liability for retiree medical benefits. We are currently reviewing the consultant's draft report.

A-133 Audit Reports

OMB Circular A-133 provides audit requirements for state and local governments, colleges and universities, and non-profit organizations receiving federal awards. Under this Circular, covered entities that expend $500,000 or more a year in federal awards are required to have an annual organization-wide audit that includes the entity's financial statements and compliance with federal award requirements. Non-federal auditors, such as public accounting firms and state auditors, conduct these audits. The OIG reviews these 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.

During this reporting period, the A-133 audits of NSF grantees found compliance deficiencies and internal control weaknesses resulting in $2.5 million of questioned costs. The findings contained in A-133 reports help identify potential risks to NSF awards and are useful to both the agency and OIG in planning site visits, post-award monitoring, and future audits. Because of the importance of A-133s in monitoring grantees, the OIG returns reports that are judged inadequate to the firms that prepared them.

Findings Related to NSF Awards

In this reporting period, we reviewed 43 audit reports, covering NSF expenditures of over one billion dollars from fiscal year 2003 through 2005. These reports revealed 67 instances where grantees failed to comply with federal requirements and 14 instances where weaknesses in grantees' internal controls could lead to future violations. The auditors questioned a total of $2.5 million of the costs claimed by recipients of NSF awards. As detailed in the following table, the most common violations were related to financial and award management and salary and wage requirements.

Findings Related to NSF Awards by Category

Category of Finding	Type of Finding			
	Compliance	Internal Controls	Monetary	Total
Financial and Award Management	19	6		25
Salary/Wages	7	1	5	13
Procurement System	7	2	2	11
Subawards	8	1		9
Other	6	1		7
Property Management System	2		2	4
Travel	2	1	1	4
Cost-Sharing	2	1	1	4
Indirect Costs	4			4
Equipment	3			3
Consultant Services	2			2
Fringe Benefits	1			1
Materials & Supplies			1	1
Other Direct Costs			1	1
TOTAL	63	13	13	89

We also examined 21 management letters accompanying the A-133 audit reports. Auditors use these letters to report internal control deficiencies that are not significant enough to include in the audit report, but which could become more serious over time if not addressed.

Investigations

Civil and Criminal Investigations

Embezzlement Investigation Uncovers Additional Issues with the University's Cost-Sharing and Award Accountability

An OIG investigation into embezzlement at a university revealed other management control weaknesses that resulted in the recovery or de-obligation of $3,367,256 in NSF funds over a 3-year period. The investigation involved a university employee who was subsequently convicted of embezzling more than $487,000, including $415,000 in NSF funds. In addition to finding evidence of embezzlement, investigators discovered that the university certified to inaccurate cost-sharing contributions each year of the award, and could not support a number of expenses charged to the NSF grant
The university informed NSF that it had returned all of the funds embezzled from the NSF grant, and requested that NSF close the original award and transfer the remainder of the award to another university. However, our investigation revealed that the university had not returned $1,486,098 of NSF grants funds before closing the award, funds that NSF de-obligated and used for other purposes.

OIG worked with the U.S. Attorney's Office for the Eastern District of Virginia to negotiate a settlement with the university that required it to reimburse $809,477 to the government. The settlement agreement also included provisions requiring the university to establish a compliance program to ensure future adherence to federal requirements and regulations and to provide annual reports to NSF on the progress and success of the program for a period of three years. In total, $3,367,256 were put to better use by NSF or credited to the U.S. Treasury as a result of the investigation, including funds that were either returned by the university or de-obligated by NSF over a 3-year period.

Former Professor Indicted for Mail, Wire Fraud

The U.S. Attorney for the Middle District of Tennessee indicted a former professor at a state university on one count of wire fraud and one count of mail fraud. The indictment alleges that the professor used employees funded by NSF grants to conduct work in furtherance of private consulting that she performed through a company organized by one of her subordinates at the university.

Before her recent retirement, the professor was the director of a university center that received $5 million under a Local Systemic Change (LSC) grant from NSF to support the training of local school systems in science instruction and Hands-On Science programs. As part of the LSC grant, experienced public school teachers were paid to work at the center implementing the various training programs related to the grant. Our investigation found that during the same time, the professor performed for-profit consulting through a private consulting business organized by one of her subordinates at the center. The consulting projects included an external evaluation of the success of another LSC grant, and Hands-On Science training provided to a public school system. The professor received approximately 75% of the funds paid to the private consulting business.

The indictment charges that the professor caused center staff to submit travel vouchers and make other representations that they were engaged in official university and/or NSF grant work when in fact the professor knew that the employees were providing services for projects to her for-profit consulting business. Our investigation found that most of the center employees did not know that the for-profit company existed or that they were performing work for the private consulting firm. We also found that the professor did not disclose her outside consulting activities in annual Conflict-of-Interest disclosure forms she submitted to the university.

In a press release announcing the indictment, the U.S. Attorney observed: "There is nothing wrong with faculty members doing outside consulting and being paid for their services. That said, faculty members administering federal grants must follow the appropriate conflict of interest rules and may not use federally-funded employees to further their own paid consulting work while representing that those employees are performing their usual duties under the federal grant. When this plain distinction is not honored, federal criminal sanctions are the appropriate response."

Scientist and His Company Debarred by NSF for Five Years

NSF debarred a scientist and his company from directly or indirectly obtaining the benefits of federal grants for a period of five years. The debarment was based on a criminal conviction and civil settlement resulting from

a multi-agency fraud investigation related to grants and contracts that the scientist received from the Small Business Innovation Research (SBIR) programs at NSF, the National Aeronautics and Space Administration, and the Departments of Air Force, Energy, and Agriculture.[11]

NSF Debars Employee of Grant Recipient Who Embezzled Non-Federal Funds

An accounting assistant at a grantee institution was charged with 18 felony counts of grand theft and forgery for embezzling approximately $130,000 in non-federal funds. The employee pled guilty to all counts and was subsequently convicted and sentenced. NSF concurred with our recommendation to debar the individual for three years because, although the funds were not federal, she had been responsible for processing payments for federal and non-federal awards. Moreover, her job history made it reasonable to expect that she will likely seek similar accounting positions in the future.

Improperly Used Participant Support Funds Refunded to NSF

Two investigations into misuse of participant support funds allocated in NSF awards resulted in the return of funds and commitments by the grantee to improve grant oversight. The first investigation concluded that a Massachusetts organization failed to provide proper oversight of the NSF award funds. Neither the organization nor the PI had applied for or obtained approval from the NSF program officer to reallocate the participant support funds, as they were required to do. The organization refunded $24,083.83 to NSF and the organization's Comptroller stated that for future awards the organization will create a separate account for each NSF award and monitor all spending on a monthly basis.

The second investigation found that a Utah university failed to provide guidance to the PI or exercise proper oversight of two NSF awards, with the result that participant support funds were not used for the stated purpose of promoting collaboration with foreign scientists. We determined that the collaboration with the foreign scientist had not taken place during the first award, and neither the university nor the PI had applied for or obtained the approval to reallocate the participant support funds for another use, as required. The university reimbursed NSF more than $19,000 and pledged that "the Office of Sponsored Projects will review all award letters carefully and make sure the project Information Sheet submitted to departments is accurately prepared."

[11] March 2006 Semiannual Report, p.27

Investigation of Export Technology Results in Refund of NSF Funds

Matt Quinn, Head of Investigations retired in June after 23 years of federal service.

NSF received a refund of $33,718 from a university for questionable charges to a grant following an investigation into a violation of U.S. export regulations. After receiving allegations that a university scientist used NSF funds to develop and export technology to a restricted country, we initiated an investigation in cooperation with the Department of Homeland Security Immigration and Customs Enforcement (ICE) and the Department of Commerce Office of Export Enforcement (OEE). The scientist, through the university research center, received funding from industrial institutions that reside in countries that can receive only limited U.S. technology. The scientist also received NSF grants to develop industrial technology and to participate in student exchange programs with a foreign university.

ICE and OEE found the technology that the scientist sent to the foreign institutions was not restricted for that country. However, OIG's investigation found that the scientist used NSF funds to support a graduate student whose research was provided to the foreign industrial institutions. Although the scientist claimed that the original research of the student was useful to the NSF project, the student's research was not included in NSF progress or final reports. The scientist combined NSF-funded trips related to the student exchange program with meetings related to the foreign industrial institutions, but did not separately account for the NSF meetings.

The university cooperated with the investigation and returned $33,718 to NSF for questionable expenses charged to the NSF grants. The university also counseled the scientist regarding the handling of federal program funds and is reviewing procedures for managing research projects at the university's research center.

Agency Responds to Research Misconduct Recommendation and Management Implication Report

We previously[12] summarized the case of the owner of a company receiving SBIR awards from NSF who had misrepresented the results of an award and had submitted altered letters of support. We recommended that NSF make a finding of research misconduct and take appropriate action. NSF management determined that the individual's actions were improper but did not rise to the level of research misconduct, and NSF elected not to take any action beyond sending a letter of reprimand.

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[12] March 2006 Semiannual Report, p.29.

As a result of the investigation, we submitted a Management Implication Report recommending that NSF provide additional guidance to applicants regarding the submission of letters of support. NSF responded that it would include more specific guidance in upcoming revisions to both the Grant Proposal Guide and the Proposal and Award Manual scheduled to be published this Fall.

Administrative Investigations

Actions by the Deputy Director

NSF Concluded That Small Business PI Committed Plagiarism

In our last Semiannual Report,[13] we discussed our investigation of allegations that a PI employed by a New Jersey company plagiarized text in two SBIR proposals he submitted to NSF. Based on our investigation and recommendations, NSF found that the PI committed research misconduct and sent him a letter of reprimand. The agency also required him to certify completion of a course in scientific ethics, specifically plagiarism, within one year, and required him to certify that any proposals he submits to NSF as a PI or co-PI for the next three years do not contain plagiarized, fabricated, or falsified information.

In the course of our investigation, we determined that a second scientist at the company was the author of another NSF proposal that contained plagiarism. The scientist admitted he authored the proposal, but claimed that his use of copied text was an unintentional mistake. We concluded that the PI should have known of the importance of providing proper attribution to copied text. We recommended that NSF make a finding that the scientist committed research misconduct. NSF agreed and sent the scientist a letter of reprimand, directing him to certify to OIG that he completed a course in research ethics within one year of the final disposition of the case.

PI's Pattern of Plagiarism Continues During OIG Investigation of His NSF Proposals

A PI in Michigan continued to copy text from other sources into additional NSF proposals during the course of our ongoing investigation of plagiarism in four of his previously-submitted proposals. We had referred an investigation of four previously-submitted proposals to the PI's university, which concluded that all but one of the passages that we initially identified as copied material were plagiarized, constituting a "violation of the institutional standard of scholarly integrity." The university required remedial training for the PI but

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[13] March 2006 Semiannual Report, p.32.

did not make a finding of research misconduct because they stated there were no well-defined standards regarding plagiarism and that the copying was of the "low level" type.

We did not agree with the university' conclusion and therefore proceeded with our own investigation, including a review of the PI's subsequent NSF proposals. We identified three additional proposals containing copied material, two of which included the same text that we identified as copied into one of the proposals in our initial inquiry. We concluded that there were well-defined standards in the subject's scientific discipline and his actions constituted research misconduct.

Based on our recommendation, NSF made a finding of research misconduct; required the PI to certify completion of an ethics course covering research misconduct before applying for NSF funding; required the PI, each time he submits a proposal or report to NSF for five years, to certify and provide assurances from his employer that the submissions do not contain plagiarized, fabricated, or falsified material; and barred the PI from participating as a reviewer of NSF proposals for three years.

Reports Forwarded to the Deputy Director

PI Provides False Evidence to Refute Allegation of Plagiarism

A professor at a New York university altered electronic files to create false evidence in support of his claim that he did not commit plagiarism. Our review of three proposals submitted to NSF by the professor revealed that over 80% of each proposal was text apparently copied from other sources. Most of the duplicated text, in two of the proposals, was from an NSF proposal written by other researchers which had been posted on the web. The duplicated text in the third proposal was drawn from professional reports of curriculum innovation and assessment in the field. None of the verbatim material offered in any proposal appeared in quotation marks or was differentiated from the PI's original text.

The PI claimed the NSF FastLane electronic proposal submission process removed quotation marks and citations that were present in the documents he submitted to NSF. However, we reviewed the original documents and determined that they did not contain quotation marks and citations.
We referred the investigation to the PI's university, which concluded the PI committed research misconduct. The PI appealed that decision, and provided the university with a computer hard drive that he claimed contained exculpatory evidence. The university arranged for a forensic analysis of the contents of the hard drive, which provided direct evidence that the PI altered files on the hard drive in an effort to support his false claims regarding the copied text.

We recommended that NSF: conclude the subject committed research misconduct; debar him from receiving federal funds for a period of five years; require him to certify that proposals or reports he submits to NSF do not contain plagiarized, falsified, or fabricated material for three years after the debarment period; require that he submit assurances by a responsible official of his employer that any proposals or reports submitted by the subject to NSF do not contain plagiarized, falsified, or fabricated material for three years after the debarment period; and bar him from serving as a reviewer of NSF proposals for five years.

NSF-Funded Postdoctoral Fellow Falsifies Research Data

An OIG investigation concluded that an NSF-funded postdoctoral fellow (the PI), at a New England institution, falsified data in a published article. The falsified data were subsequently cited by other researchers in the field.

The university notified us that it had completed an inquiry and found sufficient evidence to warrant a detailed investigation. However, after we referred our investigation to the university, the university reopened the inquiry, at the behest of the PI's attorney, and reversed its decision to recommend a full investigation. Because our review of the evidence did not support the rationale for closing the matter, we proceeded with our investigation. We determined that the PI was responsible for the collection of the data and the selection of the data published in a journal article, and identified two distinct sets of experiments during which the instrument controls were improperly adjusted by the PI to create the desired data.

We recommended that NSF: make a finding of research misconduct; debar the PI for two years; require him to certify to NSF that the publication containing the falsified data has been retracted; require him to certify completion of an ethics course covering research misconduct before applying for NSF funding; require that for three years after the debarment period the PI each time he submits a proposal or report to NSF to certify and provide assurances from his employer that the submissions do not contain plagiarized, fabricated, or falsified material; and bar the PI from participating as a reviewer of NSF proposals for three years.

PI Ignores Warning to Remove Plagiarized Text From His Proposal

A PI from a New England institution plagiarized text in two NSF proposals, disregarding an admonition from two different colleagues about the copied text. OIG received an allegation of plagiarism, determined it was substantive, and referred the matter to the institution. The institution's investigation committee found the PI had shared a copy of his draft proposal with a scientist, requesting that she provide comments to improve the proposal. The scientist told the PI that he had inappropriately copied text from her funded NSF proposal. The scientist also asked another colleague to review

the PI's proposal. The other colleague told the PI that he should rewrite those sections before submitting the proposal to NSF.

Despite these warnings, the PI submitted his proposal with few changes from the draft version and this proposal was eventually funded by NSF. In addition, the investigation committee discovered the PI had submitted an earlier NSF proposal that contained plagiarized text from another successful NSF proposal submitted by a different scientist.

The institution concluded the PI committed research misconduct when he plagiarized text in the proposals. The institution: returned the funds for the awarded proposal to NSF; reprimanded the PI; prohibited him from submitting proposals from the institution for about 1½ years; and required him to take ethics training.

We concluded the PI committed research misconduct and we recommended that NSF: send the PI a letter of reprimand informing him that NSF has made a finding of research misconduct against him; debar the PI from receiving federal funds for a period of two years; require the PI to certify that proposals he submits to NSF do not contain plagiarized, falsified, or fabricated material for three years after the debarment period; require the PI to submit assurances by a responsible official of his employer that any proposals submitted by the PI to NSF do not contain plagiarized, falsified, or fabricated material for three years after the debarment period; prohibit the PI from reviewing NSF proposals for a period of two years, concurrent with the debarment period; and require the PI to complete a course in research ethics within one year of the final disposition of the case.

Institution Proposes Termination of PI for Plagiarism

A PI at a Northeast institution plagiarized text from several source documents into an NSF proposal and was recommended for termination by the institution's adjudicator. During our investigation, the PI admitted that he copied the materials. Based upon the evidence we provided, the institution's investigation committee concluded the PI committed research misconduct. The institution's adjudicator endorsed the findings and the conclusion of the committee, but rejected its recommended actions, instead proposing to terminate the subject's employment at the institution.

We accepted the institution's report as accurate and complete. We recommended NSF send a letter of reprimand to the PI informing him that NSF has made a finding of research misconduct and requiring him to certify to OIG that proposals he submits to NSF for one year from the date of NSF's letter of reprimand do not contain plagiarized, falsified, or fabricated material.

Plagiarism Found in University Professor's Dissertation

An OIG investigation concluded that a PI from New Jersey plagiarized text from multiple source documents into two proposals he submitted to NSF. We referred the investigation to the institution, which confirmed the subject plagiarized the text we discovered during our inquiry. The university also uncovered eight pages of plagiarized text in the subject's dissertation. The subject's institution referred the dissertation matter to the degree-granting institution, but, concluded that the copied text in his NSF proposals and his dissertation were part of a pattern of plagiarism.

We concurred with the institution's conclusions and recommended NSF: make a finding of research misconduct; send the subject a letter of reprimand; require the subject to certify for two years that his proposals do not contain plagiarism; and direct the subject to complete a research ethics course.

PI Copies from 53 Sources into Three Proposals

A faculty member at a university in Tennessee submitted three proposals to NSF that contained text copied verbatim from multiple sources. Using plagiarism detection software, we identified approximately 160 lines of text in the three proposals that were apparently copied from 53 sources. When questioned, the PI accepted responsibility for the copied text in two of the three proposals, but said his co-PI was responsible for the third proposal. Because the co-PI denied responsibility, we referred the allegation to the university for investigation, which concluded the PI committed plagiarism in the disputed proposal. The university was unable to take action against him because he had taken a position at a different university.

We agreed with the university's conclusions and recommended NSF: make a finding of research misconduct; send a letter of reprimand; and, for a period of three years from final resolution of this case, require the PI to certify in writing that any documents submitted to NSF are free of any misconduct.

PI Resigns Faculty Position Over Plagiarized CAREER Proposal

A professor at a Texas university resigned from his tenure-track position after an investigation concluded that he plagiarized text into his NSF CAREER proposal. His claim of a one-time careless action was contradicted by the appearance of the same plagiarized text in his two previously submitted CAREER proposals. The university conducted an investigation and found additional plagiarized text in proposals submitted to other federal agencies. The university determined that the subject's actions constituted scientific misconduct.

As a result of the university's investigation, the professor resigned from his tenure-track faculty position and was appointed to an annually renewable non-tenure track position. The university also required the professor to complete research ethics training and certify that proposals submitted in the future meet rigorous standards of scholarship. We concurred with the university's assessment and recommended that NSF: make a finding of research misconduct; send a letter of reprimand; and require certifications from the subject for two years that his proposals submitted to NSF do not contain plagiarized materials.

Other Significant Administrative Cases

Protecting the Confidentiality of Merit Review

During this semiannual period, our office reviewed several allegations related to violations of NSF's merit review process. We closed one such case and three others are still being investigated. In the case that was closed, six unfunded NSF proposals were found on the website of a graduate student whose advisor had served as an NSF panelist for all six proposals. We found that these documents inadvertently became publicly available due to an IT security error at the institution, and the graduate student agreed to immediately expunge the proposals from the server. We also learned that the panelist had provided the proposals to the graduate student for limited review of issues within the graduate student's area of expertise. Our investigation concluded that there was no intent to place these proposals on a public website, and there was no allegation or evidence of subsequent plagiarism. We counseled the panelist on the importance of adhering to the NSF confidentiality form that he signed, and he made assurances that this would not occur again.

In three other matters that we are currently investigating, NSF panelists have allegedly either directly plagiarized, or shared the proposal with another individual who subsequently plagiarized, from NSF proposals that had been reviewed. Two such matters have been referred to institutions for investigation, and the other is still in the OIG inquiry stage. We will discuss the findings related to these matters in a future report.

Statistical Data

Audit Reports Issued with

Recommendations for Better Use of Funds

		Dollar Value
A.	For which no management decision has been made by the commencement of the reporting period	$0
B.	Recommendations that were issued during the reporting period	$1,900,000
C.	Adjustments related to prior recommendations	$0
Subtotal of A+B+C		$1,900,000
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	$1,900,000
For which no management decision was made within 6 months of issuance		$0

Audit Reports Issued with Questioned Costs

		Number of Reports	Questioned Costs	Unsupported Costs
A.	For which no management decision has been made by the commencement of the reporting period	24	$47,452,894	$4,731,498
B.	That were issued during the reporting period	18	$25,415,769	$2,231,707
C.	Adjustment related to prior recommendations	<1>	<$326,935>	$0
Subtotal of A+B+C		41	$72,541,728	$6,963,205
D.	For which a management decision was made during the reporting period	23	$11,936,665	$4,709,167
	i) dollar value of disallowed costs	N/A	$884,109	N/A
	ii) dollar value of costs not disallowed	N/A	$11,052,556	N/A
E.	For which no management decision had been made by the end of the reporting period	18	$60,605,063	$2,254,038
For which no management decision was made within 6 months of issuance		5	$35,231,448	$22,331

Audit Reports Involving Cost-Sharing Shortfalls

		Number of Reports	Cost-Sharing Promised	At Risk of Cost Sharing Shortfall (Ongoing Project)	Actual Cost Sharing Shortfalls (Completed Project)
A.	Reports with monetary findings for which no management decision has been made by the beginning of the reporting period:	5	$18,914,667	$940,046	$8,115,327
B.	Reports with monetary findings that were issued during the reporting period:	2	$11,372,117	$606,563	$0
C.	Adjustments related to prior recommendations	0	$0	$0	$0
Total of reports with cost sharing findings (A+B+C)		7	$30,286,784	$1,546,609	$8,115,327
D.	For which a management decision was made during the reporting period:	4	$18,684,126	$940,046	$8,107,226
	1.Dollar value of cost-sharing shortfall that grantee agreed to provide	N/A	N/A	$0	$100,000
	2.Dollar value of cost-sharing shortfall that management waived[14]	N/A	N/A	$940,046	$8,007,226
E.	Reports with monetary findings for which no management decision has been made by the end of the reporting period	3	$11,602,658	$606,563	$8,101

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[14] Indicates the dollar value waived by management primarily due to additional documentation provided during audit resolution to support the questioned amounts.

Status of Recommendations that Involve Internal NSF Management Operations

Open Recommendations (as of 9/30/2006)	
Recommendations Open at the Beginning of the Reporting Period	86
New Recommendations Made During Reporting Period	22
Total Recommendations to be Addressed	108
Management Resolution of Recommendations[15]	
Awaiting Resolution	34
Resolved Consistent With OIG Recommendations	74
Management Decision That No Action is Required	0
Final Action on OIG Recommendations[16]	
Final Action Completed	34
Recommendations Open at End of Period	74
Aging of Open Recommendations Awaiting Management Resolution:	
0 through 6 months	20
7 through 12 months	7
More than 12 months	7
Awaiting Final Action After Resolution	
0 through 6 months	2
7 through 12 months	9
More than 12 months	29

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[15]"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.

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

List of Reports
NSF and CPA Performed Reviews

Report Number	Subject	Questioned-Costs	Unsup-ported-Costs	Better Use of Funds	Cost Sharing At-Risk
06-1-009	University of Arizona Science & Technology Center	$52,737	$52,267	$0	$335,187
06-1-010	University of Pennsylvania Effort Reporting System	$27,121	$0	$0	$0
06-1-011	Raytheon Polar Services Company Failure to Disclose Cost Accounting Practices	$0	$0	$0	$0
06-1-012	Raytheon Polar Services Company Billing System Internal Controls	$0	$0	$0	$0
06-1-013	Geoff Haines-Styles Productions, Inc.	$7,908	$7,691	$0	$0
06-1-014	Maytech	$14,089	$0	$0	$0
06-1-015	Consortium of Universities for the Advancement of Hydrologic Science, Inc.	$69,978	$5,253	$0	$0
06-1-016	Baltimore County Public Schools	$16,522	$0	$0	$0
06-1-017	Raytheon Polar Services Company –New Zealand Accounting System & Labor Floor Check Reviews	$0	$0	$0	$0
06-1-018	VECO Rocky Mountain, Inc. FY 2002/2003 Incurred Costs	$17,200	$0	$0	$0
06-1-019	North Carolina Museum of Life & Science	$305	$0	$0	$0
04-1-020	University of Hawaii	$265,449	$265,449	$0	$0
06-1-021	New Mexico Highlands University	$165,472	$94,507	$0	$0
06-1-023	Raytheon Polar Services Company FY2003/2004 Incurred Costs	$22,112,521	$0	$0	$0
06-1-024	Georgia State University	$174,846	$164,534	$0	$271,376
06-2-006	NSF's FY 2005 Management Letter Report	$0	$0	$0	$0
06-2-011	Review of NSF Policy on University Facility & Administrative Cost Rates	$0	$0	$1,900,000	$0
06-2-012	Summary of Eleven Indirect-Cost Audits	$0	$0	$0	$0
06-2-014	Federal Information Security Management Act FY2006 Independent Evaluation	$0	$0	$0	$0
06-2-015	FY2006 Federal Information Security Management Act Independent Evaluation	$0	$0	$0	$0
	Total:	$22,924,148	$589,701	$1,900,000	$606,563

NSF-Cognizant Reports

Report Number	Subject	Ques- tioned Costs	Unsup- ported Costs	Cost Sharing At-Risk
06-4-028	Divergence, Inc.	$0	$0	$0
06-4-002	Michigan State University	$0	$0	$0
	Total:	$0	$0	$0

Other Federal Audits

Report Number	Subject	Questioned Costs	Unsup- ported Costs	Cost Sharing At-Risk
06-5-028	Chief Dull Knife College	$3,494	$0	$0
06-5-077	Massachusetts Institute of Technology	$447	$0	$0
06-5-078	The University of Notre Dame DuLac	$12	$0	$0
06-5-079	State of Texas	$11,080	$0	$0
06-5-083	State of Florida	$834,582	$0	$0
06-5-084	University of Maine System	$1,642,006	$1,642,006	$0
	Total:	$2,491,621	$1,642,006	$0

Audit Reports With Outstanding Management Decisions

This section identifies audit reports involving questioned costs, funds put to better use, and cost sharing at risk where management had not made a final decision on the corrective action necessary for report resolution with 6 months of the report's issue date. At the end of the reporting period there were five reports remaining that met this condition. The status of recommendations that involve internal NSF management is described on page 44.

INVESTIGATIONS CASE ACTIVITY
(April 1, 2006 – September 30, 2006)

	Preliminary	Civil/Criminal	Administrative
Active Cases at Beginning of Period	63	44	55
Opened Cases	176	25	37
Closed Cases	136	12	27
Active Cases at End of Period	103	57	65

INVESTIGATIONS CASE STATISTICS

Referrals to DOJ	4
Criminal Convictions/Pleas	1
Civil Settlements	1
Administrative Actions	22
Investigative Recoveries	$910,097.65
Research Misconduct Findings	4
Cases Forwarded to NSF Management for Action	11

INVESTIGATIONS CASE STATISTICS (Continued)

Assurances and Certifications[17]

Number of Cases Requiring Assurances During This Period	5
Number of Cases Requiring Certifications During This Period	6
Assurances Received During This Period	0
Certifications Received During This Period	0
Number of Debarments in Effect During This Period	9

Freedom of Information Act and Privacy Act Requests

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

- We received 23 FOIA requests. We responded to 22 with a response time that ranged between 1 day and 20 days, with the median around 6 days and the average around 7 days.

- We received 2 Privacy Act requests.

- We received 1 appeal which was denied.

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[17]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.

APPENDICIES

Appendix 1

Management Challenges Letter
October 16, 2006

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 2007

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 organized under six broad issue areas: award administration; human capital; budget, cost and performance integration; information technology; U.S. Antarctic Program; and merit review. Ten challenges are drawn from last year's list, some of which reflect areas of fundamental program risk that are likely to require management's attention for years to come. One new management challenge appears on this year's list: enterprise architecture. We note that NSF continued to make progress this past year on several difficult challenges.

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

Award and Contract Administration

Post-award administration policies. Since FY 2002, independent audits of NSF's financial statements have repeatedly cited weaknesses in the agency's monitoring of grantee institutions, after an award is made, as a major deficiency. In response, NSF has revamped its policies pertaining to post-award administration and has made continued progress in establishing a risk-based program for monitoring its 35,000 ongoing grants. In FY 2006, NSF initiated a new program for performing desk reviews of all high-risk institutions that did not receive site visits. The desk reviews extend NSF's monitoring program to all awardee institutions considered high-risk, closing a significant gap in its coverage. However, OIG is not yet able to evaluate the effectiveness of the post-award program NSF has implemented. It is too soon to assess the desk reviews, and the quality of the documentation associated with the site visits continues to be inconsistent.

Meanwhile, the monitoring of programmatic performance is also a concern. NSF provides limited guidance to program officers on how to oversee programmatic performance of awardees, and offers little or no formal training on the administrative and financial requirements contained in OMB Circulars or NSF grant conditions. An effective post-award monitoring program should ensure that 1) awardees are complying with award terms and conditions and federal regulations 2) adequate progress is being made toward achieving the objectives and milestones of the program; and 3) expenditures listed on NSF's financial statements are accurate.

Cost-sharing commitments by the institutions have become less of an issue since the National Science Board decided to eliminate non-statutory cost-sharing requirements in 2004, but commitments that pre-date that policy change continue to pose problems. Our most recent Semiannual Report, for example, described two school districts and a university that lacked systems to document and track a total of $42 million of claimed cost sharing. In addition, OIG investigations of two universities that falsely reported cost-sharing contributions were recently settled with substantial repayments of award funds to NSF.   The challenge for NSF in the remaining cost-sharing obligations, as in the other aspects of post-award administration, is to ensure that awardees live up to their commitments.

Management of large infrastructure projects. NSF's administration of large, state-of-the-art infrastructure projects, such as telescopes and super-computing databases, poses an unusual project management challenge. Two OIG audits that were issued in 2000 and 2002 found weaknesses in the financial controls surrounding the funding and operation of these projects.[18] Since then, NSF has steadily strengthened its oversight of large infrastruc-

[18]Audit of the Financial Management of the Gemini Project, December, 2000, OIG 01-2001 Audit of Funding for Major Research Equipment and Facilities, May, 2002, OIG 02-2007

ture projects. A Deputy Director for Large Facilities Projects was appointed in 2003, but until recently had trouble obtaining the staffing, resources and authority needed for the new Large Facility Projects Management & Oversight Office (LFP) to carry out its mandate of conducting post-award oversight of business operations, financial and internal control systems, and project management at large NSF-funded facilities. In the past year, the LFP has grown to include four permanent full-time staff. The agency has also implemented a system for tracking budgeted costs for Major Research Equipment and Facilities Construction (MREFC) projects. However, NSF has not yet addressed OIG recommendations for a system that identifies, records and tracks the total costs of major equipment and facilities. In addition, corrective actions to ensure the appropriate use of the MREFC accounts. and the implementation of good project management methods is still incomplete.

Installation of the Gemini North telescope. The Gemini facility is an international partnership for which NSF acts as the executive agency.
Credit: NOAO/AURA NSF

In May 2006 NSF's Business and Operations Advisory Committee recommended, among other things, that NSF: 1) arrange for annual reviews of NSF-led large facilities by an expert group that includes outside peer consultants; 2) conduct formal risk assessments of each of its facilities; and 3) implement a process for identifying how the facility will meet future research needs and for projecting its eventual termination, along with the associated costs and legal requirements.[19] These recommendations are similar to those pertaining to post-award administration in past OIG reports and the independent audits of the agency's financial statements. Given the annual investment of more than $200 million in large research facilities and equipment, they remain a challenge for the NSF managers responsible for MREFC oversight.

Contract Monitoring. NSF does not adequately review public vouchers submitted by contractors who receive advance payments, according to the last two independent audits of NSF's financial statements. In both cases, this deficiency was identified as a reportable condition. The most recent audit identified significant gaps in NSF's policies pertaining to contract administration. In FY 2006, the agency obligated approximately $214 million through advance payments to three contractors, the largest being for logistical support of the United States Antarctic Program. Without a proper review, NSF's advance payments may be subject to error or impropriety. In fact, recent cost-incurred audits by the Defense Contract Audit Agency (DCAA) have identified $55 million in questioned costs over the past five years from just one contractor. Federal law requires that responsible officials check the

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[19]Report by the Facilities Subcommittee of the NSF Business and Operations Advisory Committee, June 10, 2006

public vouchers for accuracy and propriety to ensure that the reported costs are authorized under the contract. To correct the situation, NSF has contracted with DCAA to review vouchers submitted by its larger contractors on a regular basis. These reviews were initiated too late in the fiscal year to evaluate their effectiveness, so we will continue to identify contract monitoring as a management challenge.

Promoting integrity. OIG has experienced a doubling of allegations of research misconduct over the past decade, including an approximately seven-fold increase for plagiarism and a notable rise recently in fabrication allegations against graduate students and postdoctoral researchers. There has been a dramatic increase in the number of cases requiring investigation either by the affected institution or by OIG, and approximately 70 percent of the recent findings by NSF have been in cases involving foreign collaborations. These data are consistent with a study[20] published last year that found that one-third of NIH-supported researchers surveyed acknowledge engaging in activities that are best described as questionable research practices. The authors concluded that the "questionable practices . . . are striking in their breadth and prevalence." These practices can reasonably be expected to occur in research supported by other federal agencies, and the level of activity experienced in recent years by OIG indicates that NSF faces similar issues. The prevalence of such practices suggests that integrity in science is eroding. Since 1990, HHS has had programs designed to encourage responsible conduct of research, and NSF has implemented similar instruction in selected programs. Since the early 1990's both HHS and NSF have had regulations for addressing allegations of research misconduct. NSF plays a vital role in the education of future generations of researchers and engineers. In light of what appears to be a growing challenge to the agency, NSF needs to implement a more comprehensive, agency-wide program to instill ethics and integrity at all levels of the scientific, engineering and education enterprise it supports.

Human Capital

Workforce planning. NSF reports that it has made progress in FY 2006 toward implementing an effective workforce planning process based on sound, objective criteria. The agency has drafted a three-year strategic workforce plan, and each Directorate created its own staffing plan during this year's budget planning cycle according to a methodology developed by a committee of managers. In addition, the Division of Human Resources is reportedly developing tools for prioritizing staffing needs and projecting turnover. During the past year the strain of NSF's workload actually eased a bit as the average number of proposals each program officer handled declined from 113 to 104, reflecting a slight increase in the number of program officers and a modest decrease in the number of proposals received.

[20] Martinson, B.C.; Anderson, M.S. and R. de Vries; Scientists behaving badly; Nature:Vol. 435 pp. 737-738, 9 June 2005.

Despite progress toward developing a comprehensive agency workforce plan, the management of NSF's growing workload continues to be one of the agency's most pressing challenges. The Advisory Committee for GPRA expressed concern in its annual report about the workload that program officers face and recommended that NSF examine ways to reduce unnecessary work.[21] NSF's growing workload was one of the primary reasons that the agency launched the Business Analysis initiative four years ago to review and reengineer NSF's core business processes. But as the initiative nears completion, OIG estimates that 75 percent of the improvement opportunities identified by the contractor for the merit review and award management business processes have not been acted on. Some of these proposals have the potential to alleviate workload pressures by rationalizing NSF's operations and improving customer service. The immediate challenge for NSF management is to determine which of these proposals have merit and are financially feasible, and then to implement those that will ensure the most efficient deployment of the workforce in the years ahead.

Another workforce planning issue is the extent to which NSF should use rotators from the research community to fill key program management positions. NSF has a longstanding practice of recruiting scientists, engineers, and educators from their home institutions or agencies to spend a few years at the Foundation. In FY 2005, approximately half of NSF's 400 program officers were rotators. While acknowledging their contributions to keeping NSF current on the latest research, we believe that their employment poses several administrative and management challenges for NSF. Rotators who serve at more senior levels lack institutional knowledge and are less likely to make long-term planning a priority. In addition, rotators require more frequent recruiting, hiring and training.

Two reports issued in the past year have highlighted the importance of having permanent, experienced managers in senior positions. In its 2005 Report on NSF's Merit Review System, the National Science Board stated that "at the higher management levels, including the division director, experienced individuals need to oversee the complete system of the merit review process and be able to recruit the best program officers." The Advisory Committee for GPRA commented that NSF "requires highly experienced program managers with a broader understanding of the operation of the Foundation and the evolution that it is undergoing. If NSF seeks to undertake activities such as identifying a portfolio of "transformative" research, the expertise of experienced program managers will play a critical role."[23] We believe that a significant challenge for NSF is to ensure a stable and experienced managerial corps. To attain that goal, it needs to give careful consideration to whether the agency would be better served by reserving specific management positions for permanent professional staff.

[21]Report of the Advisory Committee for GPRA Performance Assessment FY 2006, p. 57
[23]Report of the Advisory Committee for GPRA Performance Assessment FY 2006, p.49, 52

Administrative infrastructure. Issues related to administrative infrastruc-ture and support continue to limit the size and effectiveness of NSF's work-force. Inadequate office space, tight travel funds, and flawed systems to support traveling and hiring actions place serious constraints on the staff's ability to perform its work. Office space limitations remain the most critical issue, impeding the recruitment of staff, the ability to obtain space for panels and meetings, and the capacity to store sensitive documents. In developing their departmental staffing plans this past year, NSF directorates informed the agency that insufficient office space restricted the number of people they could hire.

Travel funds are also inadequate for the purpose of properly overseeing existing awards. In addition, staff members have been hampered in making travel arrangements by recurring problems with FedTraveler, NSF's on-line system for booking and reimbursing official travel. The agency continues to work with the contractor responsible for the system on correcting them. In the past year, NSF has taken several actions aimed at improving perfor-mance in the area of human resource management so that hiring actions will be processed more quickly, but progress has been uneven. NSF needs to make allocating more funding for administrative resources a priority in order to maximize the effectiveness of staff.

Budget, Cost and Performance Integration

Performance reporting. The purpose of the Government Performance and Results Act is to improve the efficiency and effectiveness of federal pro-grams by establishing a system to set goals for program performance and to measure results. However, the results of funding basic scientific research are difficult to measure in the short term, as the value of many research projects only becomes apparent over time. To assist in this endeavor, NSF convenes an Advisory Committee on GPRA (AC/GPRA) each year to as-sess progress in achieving its strategic goals. Last year's AC/GPRA as-sessment suggested that NSF could better demonstrate the relevance of its accomplishments to its outcome goals. This year's Committee was more specific, recommending that NSF's "nuggets" (selected success stories) in-clude the specific activities and outcomes that are desired, and include more "measures of effectiveness." Among other things it also recommended that NSF develop baselines to better demonstrate how the agency's efforts are contributing to positive change.

Communicating the results of scientific research is also key to furthering science and demonstrating the effects of federal funding. The Office of Sci-ence and Technology Policy recently affirmed that the administration regards the timely, complete and accurate communication of scientific information as

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[24]Audit of Project Reporting for NSF Awards, December 2004, OIG 05-2-006

an important aspect of public service. In the past two years, OIG has issued three reports that underscore the need to improve NSF's reporting of research results. In 2005, auditors found that approximately 47 percent of final and annual reports required by their NSF awards over a five-year period were submitted late or not at all. Moreover, 8 percent of the 43,000 final project reports were never submitted.[24] NSF agreed with the report's recommendations to strengthen project reporting and is in the process of developing a new project-reporting notification and tracking system.

Two related reports on disseminating the results of NSF-funded research to the public were issued during this past year. In February, OIG recommended that the agency make publication citations for each research project that it funds available on its website.[25] The agency agreed and is planning to make the citations available by July 2007. In September, a follow-on report assessed interest among NSF's stakeholders and managers in making even more information about research outcomes available to the public.[26] The auditors found that there was overwhelming interest in providing brief summaries of the results of each project NSF funds on the agency website. Significant support was also registered for posting conference proceedings, abstracts, and final project reports. NSF agreed that increased public access to the results of its research was desirable, and is working with other government agencies toward developing a standardized reporting template. The significant challenge for NSF is twofold: to develop a credible process for evaluating the impact of its overall effort, rather than relying on selected nuggets to suggest the success of its investments, and to ensure that the research community and the public have ready access to the scientific results.

Cost information. NSF does not maintain basic information about the cost of its operations that would enable managers and those responsible for its oversight to better assess the agency's past performance and make more informed decisions about its future. In recent years, NSF has enhanced its cost accounting system so it can track costs according to its strategic goals, as well as the ten investment categories that are subject to OMB evaluation. While the current system provides aggregated costs that are useful to assessing strategy, it does not track the costs of NSF's internal business processes and activities such as soliciting grants, conducting merit reviews, or performing post-award grant administration. Information about the cost-effectiveness and efficiency of an organization's workforce and work processes is critical to any effort to carry out such initiatives as business-process improvements or activity-based costing. We believe that management should consider the use of more detailed cost information as a tool for improving its business processes and maximizing limited resources.

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[25]*NSF's Policies on Public Access to the Results of NSF-Funded Research*, February 2006, OIG 06-2-004
[26]*Interest in NSF Providing More Research Results*, September 2006, OIG 06-2-013

Information Technology

Enterprise Architecture. Enterprise architecture involves planning for organizational change using detailed models that demonstrate, in both business and technical terms, how an entity intends to transition from its current operations to a more optimal system in the future. It is widely accepted that a carefully designed enterprise architecture is vital to an organization's efforts to modernize and improve its IT environment. The Government Accountability Office (GAO) recently issued a report on the progress made by 27 federal departments and agencies toward establishing enterprise architecture programs. They found that NSF lags behind all but four of the agencies studied, satisfying just 52 percent of GAO's core elements for effective enterprise architecture management.[27] GAO recommended that NSF, as well as other federal agencies, implement a plan for fully satisfying each core element to ensure that there is a mature enterprise architecture program in place to guide future IT development.

United States Antarctic Program

USAP long-term planning. The United States Antarctic Program, which is managed by NSF, is responsible for the coordination and support of America's scientific research program in Antarctica. The USAP operates three scientific stations and provides researchers with logistical, operational, and laboratory support. Some 3500 researchers and support personnel annually participate in the USAP, which cost $295 million in FY 2006. Providing for the safety and well-being of so many in such an isolated, high-risk, and extreme environment has been a long-term management challenge for NSF.

A 2003 OIG audit report cited examples of aging USAP infrastructure and recommended that NSF provide a separate line item in its budget for the replenishment of its buildings and facilities according to a capital asset management plan, to ensure that the useful lives of buildings and equipment would not be stretched beyond the point where they become unsafe.[28] NSF responded that its current practices were adequate and that a dedicated fund would restrict needed financial flexibility. Two additional issues with long-term planning were raised last year by a Committee of Visitors report that recommended that the agency: 1) develop a long-term planning process to anticipate future research needs and the attendant logistical challenges before they reach the proposal stage; and 2) improve its projections of the actual costs of doing field and lab science to assure adequate planning. This past year NSF asked outside experts to analyze the USAP's expected logistics and infrastructure needs.

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[27]Leadership Remains Key to Establishing and Leveraging Architectures for Organizational Transformation, GAO-06-831, August 2006, p. 21

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

Information technology systems also play an essential life-support role in such a fragile environment. The evaluation report our office is required to prepare under the Federal Information Security Management Act (FISMA), noted that NSF needed to make improvements in the USAP operating platform and in disaster recovery.[29]   The auditors believe that these weaknesses have the potential to adversely affect the well-being of the personnel, as well as the conduct of science, in Antarctica.[30]   The risks inherent in the USAP program create a significant ongoing challenge for NSF.

Merit Review

Broadening Participation. Increasing the participation of women and minorities in the merit review process by adding more applicants, awardees, and reviewers from underrepresented groups is an important priority of NSF. Developing the unrealized potential of underrepresented groups will benefit the U.S. through expanded individual opportunities and enhanced national prosperity. However, in FY 2005, NSF overall received fewer proposals and made fewer awards than the previous year, and women and minorities were proportionately represented in that trend, although the rate of decline for the underrepresented groups was slightly less than that of the general population. The success rate (the percentage of proposals that NSF decides to fund) for both women and minorities remained the same as in FY 2004.

In the past NSF has had difficulty measuring the participation of underrepresented groups as reviewers, but has gradually increased the percentage of reviewers who report demographic information from 9 percent in 2002 to 22 percent in 2005. Among reviewers who voluntarily provided demographic information, 35 percent indicated that they were members of an underrepresented group, the same as last year. During the past year, the National Science Board issued a report on the Merit Review System that recommended that the agency seek to improve the information on traditionally underrepresented groups in the reviewer's database.[31] The Board's recommendation was affirmed by NSF's Advisory Committee for GPRA Performance Assessment, which suggested that NSF consider methods other than self declaration to collect more demographic data. The Committee also urged NSF to provide more conclusive evidence on whether it has indeed increased opportunities for underrepresented individuals and institutions. Because diversity is widely viewed as allowing for more creative ideas and better-informed decisions, resulting in more innovative research, the effort to broaden partici-

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[29]NSF Federal Information Security Management Act, 2006 Independent Evaluation Report
[30]Ibid p. 1
[31]Report of the National Science Board on the National Science Foundation's Merit Review System, NSB-05-119, p. 15

Appendix 2

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, 41)

Matters referred to prosecutors, and the resulting prosecutions and convictions. (See pp. 31, 47)

Revisions to significant management decisions on previously reported recommendations, and significant recommendations for which NSF has not completed its response. (See pp. 24,46)

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

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

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

Appendix 3

ACRONYMS

CASB	Cost Accounting Standards Board
CFO	Chief Financial Officer
COI	Conflict of Interest
COV	Committee of Visitors
DACS	Division of Acquisition and Cost Support
DCAA	Defense Contract Audit Agency
DD	Deputy Director
DFE	Designated Federal Entity
DGA	Division of Grants and Agreements
DIAS	Division of Institution and Award Support
DoD	Department of Defense
DoJ	Department of Justice
ECIE	Executive Council of Integrity and Efficiency
FASAB	Federal Accounting Standards Advisory Board
FFRDC	Federally Funded Research and Development Centers
FISMA	Federal Information Security Management Act
FOIA	Freedom of Information Act
GAO	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
NIH	National Institute of Health
NSB	National Science Board
NSF	National Science Foundation
OIG	Office of Inspector General
OMB	Office of Management and Budget
OPP	Office of Polar Programs
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
USDA	U.S. Department of Agriculture
USAID	Agency for International Development
USI	Urban Systemic Initiative
USP	Urban Systemic Program

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