

SEMIANNUAL
REPORT
TO THE
CONGRESS



OFFICE OF
INSPECTOR GENERAL
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NATIONAL SCIENCE
FOUNDATION

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Letter to the Congress of the United States

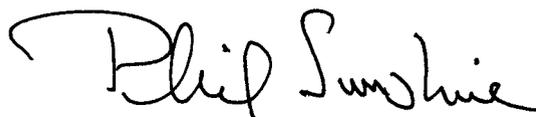
The Inspector General Act mandates that we independently develop factual analysis, fairly and impartially. As a component of the National Science Foundation, we are party to the Foundation's mission of enabling discovery and education. Accordingly, we participate fully in the Foundation's efforts to be innovative and flexible while operating efficiently and with integrity. We can best carry out our responsibilities by working in partnership with all areas of the Foundation and the communities we jointly serve.

This Semiannual Report to the Congress describes models of best practice. Our Office of Audit and the Foundation's Office of Polar Programs together developed an audit program, which identified over \$20 million in administrative savings. These savings will be recognized during the transition of Antarctic logistics operations from the Navy to the Air National Guard (page 2). Our Criminal Investigations Unit continues to develop investigative findings by coordinating closely with investigators in other federal agencies and with internal audit departments in major universities (page 16). Finally, our administrative investigative program involving misconduct in science succeeds only because we rely heavily on investigative reports developed initially by universities and other funded organizations (page 26). We will build on these models of partnership in the future.

In this reporting period, at the request of the Senate Committee on Commerce, Science, and Transportation, we also analyzed the Foundation's award portfolio to determine whether funding decisions were based on political or other non-merit based criteria. We found that the Foundation's merit-review system consistently uses reasonable and impartial criteria that are applied fairly throughout NSF's programs (page 33).

This is a time of change in key personnel for the Foundation, the National Science Board, and our office. We look forward to a collaborative dialogue so that we can work together with the Congress, the Foundation's management, and the National Science Board to help our agency accomplish its laudable mission of education and discovery.

Respectfully submitted,



Philip L. Sunshine
Acting Inspector General
March 31, 1998

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Acronyms

AMTRAK OIG	National Railroad Passenger Corporation's Office of Inspector General
CFO	Chief Financial Officer
DOD	Department of Defense
DoEd	Department of Education
DOJ	Department of Justice
EHR	Directorate of Education and Human Resources
FASAB	Federal Accounting Standards Advisory Board
FBI	Federal Bureau of Investigation
GC-1	Grant General Conditions
GMRA	Government Management Reform Act
GPM	Grant Policy Manual
GRT	Graduate Research Traineeship
IGERT	Integrative Graduate Education and Research Training
IPA	Intergovernmental Personnel Act
OMB	Office of Management and Budget
OPP	Office of Polar Programs
PAM	Proposal and Award Manual
PM	Program Manager
PP&E	Property, Plant, and Equipment
SBIR	Small Business Innovation Research
SSI	Statewide Systemic Initiatives
USAP	U.S. Antarctic Program
VSEE	Visiting Scientists, Engineers, and Educators

Reporting Requirements

This table cross-references the reporting requirements prescribed by the Inspector General Act of 1978, as amended, to the specific pages in the reports where they are addressed.

Legal Reference		Page
Section 4(a)(2)	Review of Legislation and Regulations	Throughout
Section 5(a)(1)	Significant Problems, Abuses, and Deficiencies	Throughout
Section 5(a)(2)	Recommendations With Respect to Significant Problems, Abuses, or Deficiencies	Throughout
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Section 5(a)(5)	Summary of Instances Where Information Was Refused	None to Report This Period
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Section 5(a)(8)	Statistical Table Showing Number of Reports and Dollar Value of Questioned Costs	43
Section 5(a)(9)	Statistical Table Showing Number of Reports and Dollar Value of Recommendations That Funds Be Put to Better Use	42
Section 5(a)(10)	Summary of Each Audit Issued Before This Reporting Period for Which No Management Decision Was Made by the End of the Reporting Period	51
Section 5(a)(11)	Significant Management Decisions That Were Revised	None to Report This Period
Section 5(a)(12)	Significant Management Decisions With Which the Inspector General Disagrees	None to Report This Period

Audit

The Office of Audit is responsible for auditing grants, contracts, and cooperative agreements funded by NSF's programs. It reviews agency operations and ensures that financial, administrative, and program aspects of agency operations are examined. It conducts the annual audit of NSF's financial statements, which encompass over \$3.3 billion, and evaluates internal controls and data processing systems. The Office also assists in the financial, internal control, and compliance portions of OIG inspections. All audit reports are referred to NSF management for action or information.

The Office of Audit advises and assists NSF in resolving audit recommendations. The Office also acts as a liaison between NSF and audit groups from the private sector and other federal agencies by arranging for special reviews, obtaining information, and providing technical advice. The Office of Audit provides speakers and staff assistance at seminars and courses sponsored by NSF and other federal agencies and at related professional and scientific meetings.

Audit Highlights

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Partnering Activities

In addition to conducting systematic reviews of programs based on objective criteria, we believe it is important to establish partnerships with NSF programs.

The most extensive partnership to date has been established with the Office of Polar Programs (OPP). For example, on two recent projects we worked closely with OPP to shape project work plans that would accomplish its goals and objectives. We continued to work closely with OPP staff throughout these projects, providing them with updates on the progress of our work and advising them of issues and findings as we developed them. We also briefed OPP managers on our findings and recommendations before requesting formal comments on our draft report.

This ongoing, open communication enabled OPP to address issues as they arose. In some instances, OPP addressed and began implementing our recommendations before we issued the report. Recommendations resulting from the two reviews already completed will result in a total of \$23.7 million in savings and cost avoidances over a 5-year period. The Acting Director of OPP acknowledged the benefit of our partnering efforts by stating that “OPP considers [our] assessments and accompanying recommendations [to be] a tremendous benefit in [OPP’s] ongoing efforts to more efficiently and effectively manage the U.S. Antarctic Program.” We plan to expand this model of partnering to reach other NSF programs.

Review of U.S. Antarctic Program Flight Operations

The U.S. Antarctic Program (USAP) is funded and managed by NSF. Past and current administrations determined that it is important for the United States to maintain an active and influential presence in Antarctica. Accordingly, NSF manages a substantial research program aimed at understanding the Antarctic region and its relationship to the rest of the planet. OPP implements the research program and coordinates the necessary logistics. Because Antarctica is geographically remote and is located in a harsh environment, the logistics to support a robust research program are both

complex and expensive, accounting for 55 percent of OPP’s \$228 million FY 1998 budget.

The Navy provided logistical support for more than 40 years, but in 1993 announced that it would withdraw from the USAP. The Navy’s decision presented an opportunity for us to assist OPP in evaluating and endeavoring to maximize the efficiency of transferring functions traditionally performed by the Navy to other organizations. In Semi-annual Report Number 17 (pages 2-5), we reported on the results of a functional review and cost analysis of

transferring support for the USAP in Christchurch, New Zealand, from the Navy to OPP's prime contractor and an Air National Guard detachment. We verified annual net savings to the USAP of \$13.2 million over a 5-year period, and we made recommendations that would save an additional \$2.8 million over the same period, \$2.1 million of which have been accepted and implemented.

In this reporting period, we worked with OPP to develop a similar plan for reviewing and analyzing the transition of flight operations. The 109th Airlift Wing of the New York Air National Guard (the Guard) provides flight operations to OPP under a Memorandum of Agreement that is effective without time limitations. Although the Agreement may be terminated at any time upon mutual consent or by either party upon at least 1 year's notice, OPP anticipates that the Guard will provide flight operations support for the foreseeable future.

In this review, we identified total potential savings of \$32.7 million over a 5-year period, beginning in FY 2000, the first full year of the transition. Of this amount, we verified personnel savings of \$11.7 million. We made recommendations for additional efficiencies and cost avoidances of \$21 million over a 5-year period. NSF management generally agreed with our recommendations. We also identified and validated one-time transition costs of \$79 million, of which \$43.2 million is associated with reconfiguring three NSF-owned aircraft to meet U.S. Air Force standards.

LC-130 Flight Operations

During the operating season, airlift of passengers, cargo, scientific and construction supplies and equipment, and fuel to and within Antarctica is accomplished using ski-equipped aircraft (LC-130s). There are currently only two operators of this aircraft: the Navy's Antarctic Development Squadron SIX (the Squadron) and the Guard. With the Navy's decision to withdraw from the USAP, another operator for NSF's LC-130s had to be identified. Because the Guard has experience flying LC-130s in the Arctic and has assisted the USAP in its Antarctic flight operations since 1988, it is well positioned to assume responsibility for LC-130 flight operations. Accordingly, these operations are being transferred from the Squadron to the Guard over a 3-year period (from 1997 through 1999) with joint Squadron and Guard operations during the transition.

The Guard plans to hire 235 additional full-time employees (USAP hires) to support the program. The Guard expects that OPP will pay for the USAP hires based on a flat composite pay rate the Guard established (one amount for officers and another for enlisted personnel regardless of their actual ranks or rates). We compared the cost of these personnel using the flat rate to a rate that varies by position. We found that the amount OPP would pay for these personnel significantly exceeds actual personnel costs to the Guard. Accordingly, we recommended that OPP negotiate reimbursement to the Guard that more closely reflects

actual costs. This would save \$1.8 million per year.

The USAP hires will be on rotational assignments to the Antarctic throughout the operating season. Only about 50 percent of the USAP hires will be deployed to the Antarctic at any one time. The rest of the Guard workforce in the Antarctic will consist of Reservists and other Guard employees deployed on a temporary basis. OPP will reimburse the Guard for the cost of USAP hires without regard to the amount of time they are actually deployed and for the temporary employees based on a daily rate for actual time deployed.

Because OPP will pay for the USAP hires regardless of whether they are deployed, we recommended that a greater portion of deployed positions be filled by USAP hires. If the USAP hires were to account for 75 percent of the positions rather than only 50 percent, as planned, the overall cost of personnel would be reduced by \$750,000 per year.

The Guard plans to deploy personnel for varying time periods, with some scheduled to leave after as little as 2 weeks. Each rotation adds airfare, hotel, and meal and incidental expense costs. In addition, OPP will pay for days that are not actually worked because, during a 2-week rotation, 1 full week is spent in travel and rest status. A high number of rotations also increases flight hour and fuel costs. We recommended fewer rotations: if only 25 percent fewer rotations were made, OPP would save \$433,500 per year. These savings

could be achieved by lengthening the rotations of USAP hires and other full-time Guard personnel.

We made other recommendations in the areas of personnel, operations, ground support, aircraft and ski maintenance, and supply. These additional recommendations would save \$1.2 million annually.

One-time Transition Costs

One-time costs associated with the transition total approximately \$79 million: \$43 million for aircraft reconfiguration and \$36 million in other transition costs. The majority of the cost is because of the concurrent operation of the Squadron and the Guard, which is necessary to ensure a safe and efficient transition of flight operations support.

OPP plans to reconfigure three LC-130 R-Model aircraft to meet U.S. Air Force safety and operations standards. The reconfiguration and spare parts are expected to cost approximately \$43 million. Due to the reconfiguration schedule, the aircraft will not be available during FYs 2000 and 2001. The Guard has identified alternatives to provide flight support during these seasons, but the additional costs have not yet been estimated. We recommended that OPP undertake an analysis to determine whether a commercial source can provide flight operations safely, efficiently, and cost-effectively. If, in fact, it can, OPP should consider integrating commercial support into Antarctic flight operations

and possibly avoid the costs associated with reconfiguring the R-Models.

Next Phase of Our Review

During the next reporting period, we will review the Guard's FY 2000 USAP flight operations budget, and the cost of support to be provided to the Guard by other organizations.

Audit of NSF's Financial Statements

We completed the second annual audit of NSF's agency-wide financial statements for FY 1997 to comply with the Chief Financial Officers (CFO) and Government Management Reform (GMRA) Acts, which are intended to bring more effective general and financial management practices to the government by improving systems of accounting, financial management, and internal controls.

Background on Last Year's FY 1996 Audit Opinion

In Semiannual Report Number 16 (pages 2 through 9), we reported that we had completed the audit of NSF's first agency-wide financial statements for FY 1996. We did not express an opinion on NSF's 1996 Statement of Operations and Changes in Net Position because it was a first-year statement that reported the cumulative effect of NSF operations during prior, unaudited fiscal years. The statement would have been impractical to audit.

We also issued a qualified opinion on NSF's 1996 Statement of Financial Position because NSF had not maintained an adequate system to accurately and completely account for

its capitalized property, plant, and equipment (PP&E) held at sites and facilities operated by NSF grantees and contractors.

Because accounting policies concerning treatment of these types of assets were not clear last year, both NSF management and OIG requested guidance from the Federal Accounting Standards Advisory Board (FASAB) and the Office of Management and Budget (OMB) to determine how these assets should be reported. On December 5, 1997, NSF received interim guidance from FASAB and OMB that only PP&E used in the USAP and used within NSF headquarters should be reported in NSF's Statement of Financial Position. As a result, the dollar value of NSF-owned PP&E held at colleges, universities, and federally funded research and development centers was not included in the NSF's 1997 Statement of Financial Position.

FY 1997 Audit Opinion

Our FY 1997 audit resulted in a "qualified" opinion on both the Statement of Financial Position and the Statement of Operations and Changes in

Net Position. Most of the PP&E reported on these statements is related to the USAP and physically located in the Antarctic. Due primarily to the timing of the FASAB guidance and the long lead time required to travel to the Antarctic, we were not able to plan and perform audit procedures to determine whether the PP&E balance, as of September 30, 1997, was fairly presented. We have developed plans to audit USAP PP&E during 1998.

Internal Controls

During our internal controls review, we found that NSF had not developed formal procedures for identifying liabilities arising from grant and contract provisions that should be recorded or disclosed on the financial statements. There also appears to be ambiguity among NSF and the awardees regarding NSF's liability for accrued employee benefit costs. We recommended that NSF devise and implement a mechanism for identifying all liabilities arising from grant and contract provisions and review and

evaluate liability termination clauses that provide for accrued employee benefits.

NSF's accounts payable balance on the financial statements did not include approximately \$14 million in FY 1997 invoices and erroneously included approximately \$4 million in invoices that did not relate to FY 1997. We recommended that NSF prepare formal written procedures for accumulating and recording the accounts payable balance at the end of the year, including adequate instructions and supervisory reviews. We also recommended that NSF continue to refine its performance measures by linking them to NSF's desired outcome goals in its strategic plan.

NSF management generally agreed with our recommendations. We will continue to work with NSF management in an effort to arrive at unqualified opinions on future financial statements.

Review of Graduate Research Traineeship Program

Graduate Research Traineeship (GRT) awards provide support to about 1,400 graduate student trainees participating in specific programs at 91 different awardee institutions through trainee stipends, cost of education allowances, and project enhancement allowances. By the time the last of the 160 GRT awards expire in 2000, it is expected that the program will have expended \$89 million. The program announcement for the replacement for

the GRT program, Integrative Graduate Education and Research Training (IGERT), was issued in 1997 and the first awards are being made this year.

We reviewed awards made under the GRT program for compliance with two award conditions. Because many awards made in the first year of the program were subject to cost sharing, we reviewed compliance with that requirement. In addition, the

program requires that all GRT trainees, who are selected by the awardee institution, be either U.S. citizens or permanent residents. We found substantial compliance with both the cost-sharing and citizenship requirements by the awards we reviewed. However, we found that a small number of trainees who received funding were not U.S. citizens or permanent residents.

Our citizenship review included 49 awards, with \$26 million in total funding through FY 1997, supporting 552 trainees. We found only 12 trainees who were ineligible because they were not U.S. citizens or permanent residents, and we questioned \$259,556 associated with these trainees. We recommended that NSF obtain refunds from the five awardees who supported ineligible trainees.

As part of this review, we studied data available to GRT program managers through the GRT database. The GRT database contains information, gathered from GRT awardees through a web-based data collection system, about GRT projects and trainees as well as their achievements. Trainee citizenship status information in the database should allow NSF program managers and grant officials to identify awardees that do not comply with trainee eligibility restrictions and take corrective actions. We recommended enhancements to the GRT (and any subsequent IGERT) database and web-based data collection system that would help program managers ensure that trainees supported by NSF under these awards meet the citizenship status requirements.

Audits Resulting in Questioned Costs

We select organizations and awards for review based on a preliminary assessment of whether it appears these organizations would have difficulty complying with regulations that govern the use of federal funds. By using risk assessment principles, we try to identify those organizations or programs that have the greatest risk of financial irregularities. This section describes audits of NSF awardees conducted in this reporting period that involve significant questioned costs.

Nonprofit Organization Has Substantial Questioned Costs

In 1996, NSF transferred a \$9.6 million cooperative agreement from a university to its wholly owned subsidiary that operates as a scientific research and educational organization to encourage and assist American industry in becoming more competitive in the

global marketplace. The cooperative agreement was jointly funded by NSF and the Advanced Research Projects Agency.

An audit of this organization identified total questioned costs of \$705,125, including costs we consider unallowable, such as:

- \$108,373 for consultant costs paid in excess of the maximum NSF rate.
- \$91,648 for hotel rooms that were reserved but never used.
- \$44,241 for office equipment not included in the budget.
- \$7,004 for alcoholic beverages.

The organization, which is required to share at least \$9.6 million of the project costs, reported over \$15 million in cost sharing at the time of our audit. We questioned \$14.4 million of the reported cost sharing, which resulted in a potential cost sharing deficit of \$9 million. Examples of questioned cost sharing include: an estimate of time spent by visitors to the organization's web page that was claimed as equivalent to \$953,969 worth of consulting; news coverage on a national network that the organization claimed as equivalent to \$60,000 worth of television advertising; and magazine articles about the organization claimed as equivalent to \$156,850 in paid advertisements.

The organization agreed that about \$2,000 of the alcoholic beverages should not have been claimed, but did not agree with the other questioned costs. NSF management will resolve these issues during the audit resolution process.

Systemic Initiatives

The following discussions focus on two questioned cost audits involving systemic initiatives. We also conducted an inspection of a Statewide Systemic Initiative cooperative agreement. See [page 37](#).

Statewide Systemic Initiative Award

SSIs foster systemic improvements to mathematics and science education on a statewide basis. A northeastern state department of education received an NSF Statewide Systemic Initiative (SSI) award of \$9,999,790. This project included such groundbreaking goals as the first state curriculum framework and implementation of a new science and mathematics Master Teacher certification standard.

Our audit questioned \$1,099,207, which included problems related to the calculation of indirect costs. We also identified problems related to subcontract compliance.

We questioned \$426,810 because indirect costs were calculated using an indirect cost rate and base that were different from the rate and base stipulated by NSF in the award documentation.

We identified material compliance deficiencies pertaining to the reporting and recording of subcontracts. Subcontract expenses were often reported based on the subcontract budget rather than actual costs. In addition, in several instances the subcontractor's fiscal year did not coincide

with the subcontract year, resulting in untimely reconciliation and reporting.

Urban Systemic Initiative Award

In 1994, NSF entered into a cooperative agreement with a large urban school system providing support for the grantee's mathematics, science, and technology initiative. Subsequently, NSF program officials concluded that the school system did not show sufficient progress toward achieving the primary goals of the cooperative agreement and, in September 1996, notified the school system that it would phase out the award. We subsequently performed a final audit on the award costs, and we questioned \$104,658 of the \$2,595,468 the school system had claimed.

The questioned costs consisted of unallowable costs totaling \$35,878 and unsupported costs totaling \$68,780. For example:

- An employee's full salary and benefits were charged to the award, although the employee estimated that he worked only one-half of his time on the award.
- Stipends were paid to teachers for attending workshops and training for days on which records did not show that the teachers were present.
- Costs claimed for materials and supplies were not supported by purchase orders, invoices, canceled checks, or expense vouchers.

Our audit disclosed material compliance weaknesses related to the school system's ability to support salary costs and contribute to project costs.

Because the school system did not have an active NSF award, we recommended that before making any future awards to the school system NSF ensure that policies and procedures are in place to safeguard federal funds spent on salaries and to meet cost-sharing requirements.

Urban Teacher Enhancement Award

We conducted a financial and compliance audit of an NSF award to a northeastern city's board of education. Our audit included six awards from NSF's Division of Elementary, Secondary and Informal Education, and one award from NSF's Division of Human Resource Development. Of the \$4,818,796 claimed costs by the awardee for the seven awards, we questioned \$2,071,176. The audit identified \$1,671,623 that was not adequately documented and related primarily to personnel compensation. The audit also found \$399,553 in inappropriate or unallowable costs charged to the awards. An additional \$366,611 was identified as at risk for cost sharing.

We identified several material compliance problems that may have led to the questioned costs. We found that the board of education's staff was not familiar with NSF's grant requirements. The awardee did not track actual participant support costs in relation to

participant costs budgeted in the award documents. An awardee's ability to track participant support costs is important because NSF-provided funds for participant support may not be used by the awardee for other categories of expenses without the specific prior approval of the cognizant NSF program officer. In addition, the awardee paid subcontract costs based on budgeted amounts rather than actual costs.

Shrinking Program Budget Results in Reduced Funding for Nonprofit Association

A nonprofit association was awarded over \$1.1 million to develop a multimedia project that conveys stories of successful environmental efforts at the grassroots level and shows how those efforts can be replicated elsewhere. The association created a three-part television program broadcast in September 1997 and an educational CD-ROM. The association originally agreed to share 56 percent of the project's cost.

We found that the overall cost of the project was below the amount originally budgeted. However, even though the overall project cost declined, the association requested increased funding from NSF. NSF's program director and grants officer approved the supplemental funding without recognizing that in so doing the association's cost sharing commitment would be reduced.

We audited the budget and recalculated the awardees' cost sharing commitment based on the original share promised of 56 percent. As a result, we recommended that NSF reduce the amount of the award by \$294,095. The funds recovered can be made available to support other programs.

NSF management is reviewing our recommendations.

Summary of Other Significant Audits of NSF Awards

Before conducting an audit, we usually perform preaudit surveys. The preaudit survey is a limited review of an institution's accounting system and grant expenditures to determine whether further auditing is required. Based on the results of our preaudit surveys, we may conduct a full financial audit or an audit that focuses on specific cost categories. Questioned costs can result both from audits and preaudit surveys.

Education Awards

During this reporting period, we completed seven audits and two surveys covering education awards totaling more than \$10.8 million. The institutions audited were primarily school districts with no recent NSF audit coverage. The audits identified a total of \$544,257 in direct costs and \$157,685 of amounts claimed as cost sharing that were questioned. In addition, they identified \$2,193,095 of cost sharing commitments that may not be satisfied by the institutions. Two of the audits had significant findings:

- A northwestern school district charged \$285,309 for personnel compensation costs that were questioned because they were not adequately supported by time and attendance records.
- An audit of a southwestern school district disclosed \$88,336 that had been budgeted as participant support costs that were spent in other cost categories without prior NSF approval.

Research Awards

During this semiannual period, we also completed 14 preaudit surveys, 7 of which resulted in audits, covering 46 research awards totaling approximately \$36 million. The organizations we reviewed were primarily small research institutions that had limited experience administering federal awards, and they had no recent NSF audit coverage.

Most of the surveys conducted during this semiannual period did not yield significant questioned costs or identify serious compliance issues. Four of the audits and three of the surveys conducted this period yielded total questioned costs of \$193,262 for indirect costs in excess of the amount allowed; costs incurred after the expiration of the award without the prior approval of appropriate NSF officials; and unsupported consultant fees, participant support costs, equipment, and supplies. Three of the audits disclosed more significant findings, which are summarized below.

- An audit of a southwestern nonprofit organization identified questioned costs of \$103,123 for preaward costs incurred more than 90 days prior to the start of the award, indirect costs not included in the award budget, unsupported costs, duplicate costs, and costs that were not allocable to the award. The audit also identified several compliance issues including at risk cost sharing.
- An audit of a northeastern, nonprofit educational organization yielded questioned costs of \$109,887. Costs for leasehold improvements, legal fees related to a reorganization, and duplicate costs and consultant costs in excess of the NSF daily allowable rate were questioned because they were unallowable under the applicable federal cost principles. We also questioned certain indirect costs charged to the award because they were not approved by NSF, and we questioned costs that were incurred more than 90 days prior to the start of the award without the approval of an appropriate NSF official.
- An audit of a Midwestern nonprofit hospital yielded questioned costs of \$237,060. The majority of these costs were for a subcontract with a Canadian university that was not approved by NSF and for which there was no subcontract agreement. We also questioned unsupported salaries and benefits and indirect costs charged to the award because they were not approved by NSF. The audit also identified several compliance issues.

Peer Review of Another Office of Inspector General

The Inspector General Act of 1978, as amended, requires that the audit function of OIGs must be peer reviewed by a federal audit entity. This peer review is required to ensure that OIGs are in compliance with auditing standards established by the Comptroller General of the United States. These standards require that audit organizations establish an appropriate system of internal quality control and undergo an external quality control review of that system at least once every 3 years.

We reviewed the system of quality control for the audit function of the National Railroad Passenger Corporation's Office of the Inspector General (AMTRAK OIG) for the year ended March 31, 1997. We found that the system of quality control for the audit function of AMTRAK OIG was designed in accordance with the quality standards established by the President's Council on Integrity and Efficiency.

While there were no significant findings, NSF OIG made three minor recommendations for improving the quality control system: (1) to retain copies of external quality control review reports, (2) to ensure working papers are prepared in accordance with

AMTRAK OIG policy and procedures and with government standards, and (3) to establish written procedures for

the AMTRAK OIG's monitoring of financial statement audits.

The AMTRAK OIG agreed with these recommendations.

Audit Resolutions

Underpayment of Wages to Contract Employees

In Semiannual Report Number 15 (page 21), we reported that a contractor and its subcontractor, who provided the staffing for NSF's mailroom, printing, and warehouse operations, were suspected of not complying with the minimum wage standards outlined in the "Wage Determination" section of the Service Contract Act of 1965, as amended. We informed NSF management, and it referred the apparent violations to the U.S. Department of Labor, which has jurisdiction for formal investigation and adjudication.

During 1997, we conducted a follow-up review with the Department of Labor related to the audit of the NSF contractor. The Department of Labor agreed that an underpayment liability under the NSF contract had occurred and asked our assistance in calculating the amount owed to the employees. The Department of Labor requested that the contractor and its subcontractor pay the employees back wages in accordance with the amounts outlined in the wage determination. As a result of this review, we determined that contractor and subcontractor employees had been underpaid by \$51,120. We worked closely with NSF management to ensure that the employees received the correct

amount of back wages and interest from the contractor and subcontractor.

Preward Audit Analysis of Two Proposals Results in Significant Savings

In Semiannual Report Number 17 (page 9), we reported that our preaward audit analysis of a proposal for funding of supercomputer centers identified \$8 million in potential savings. These estimates were associated with avoidance of sales tax payments on equipment purchases (\$5 million), limiting annual salary increases (\$2 million), and negotiating a subcontractor's fee (\$1 million).

NSF concurred with our recommendation to avoid sales tax payments on equipment purchases which, because of the reduced amount budgeted for equipment, will save \$3.7 million. The award budget did not provide funding increases for future periods. Therefore, any annual salary increases requested will be negotiated by the agency in future years. The supercomputer center negotiated the subcontractor's fee prior to submitting the proposal to NSF. However, upon expiration of this arrangement (in 2 years) NSF will review the subcontractor's fee.

Use of Temporary Scientists and Engineers

In Semiannual Report Number 17, we evaluated the costs of two programs that NSF uses for employing temporary scientists: the Intergovernmental Personnel Act (IPA) Mobility Program and the Program for Visiting Scientists, Engineers, and Educators (VSEE). We recommended certain cost controls.

In this reporting period, NSF management modified its process for determining IPA salaries, and NSF implemented two new requirements. NSF decided that (1) senior management must concur with the hiring of any IPAs whose salary exceeds the normal rate of pay for a position at NSF and (2) the Deputy Director must concur with the hiring of any IPA whose salary exceeds the level of pay for a senior federal executive (level 6 of the pay scale for the Senior Executive Service). Management also implemented additional controls to ensure that IPA assignments are temporary by limiting them to a maximum of 6 years during a 10-year period.

Investigations

The Investigations section is responsible for investigating violations of criminal statutes or regulations involving NSF employees, grantees, contractors, and other individuals conducting business with NSF. The results of these investigations are referred to federal, state, or local authorities for criminal prosecution or civil litigation, or to NSF's Office of the Director for administrative resolution.

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Coordinating Our Investigative Efforts

Over the last 5 years, we identified instances when NSF funds awarded to academic and research institutions were diverted from their intended purposes. In other instances, we identified small businesses that made false statements and omitted material information in documents to secure NSF funding through the Small Business Innovation Research (SBIR) program. We obtained efficient and effective resolutions in cases when we coordinated our investigative efforts with other organizations.

In cases involving SBIR awards, we found that companies engaged in fraudulent activity tend to do so concurrently against several agencies that support SBIR programs. By coordinating our investigation of SBIR award recipients with other agencies, we conserve federal investigative resources while developing effective working relationships. In some instances, agencies alerted us to fraud that might affect NSF and have invited us to initiate or participate in an investigation. In other instances, we identified possible fraudulent activities that do not directly implicate NSF and referred relevant information to the cognizant law enforcement authority.

During this reporting period, we combined our investigative efforts with those of other affected agencies to uncover evidence that a company may have received substantial duplicate funding from several federal agencies under the SBIR program. In previous and current investigations, we worked with agents from other federal agencies in identifying companies that secured SBIR awards through a pattern of false statements and material omissions in their research proposals, progress reports, and final reports. Prior semiannual reports detailed SBIR investigations by our office that resulted in three criminal convictions, three civil settlements, and investigative recoveries exceeding \$6 million. During this semiannual period, one case resulted in a criminal conviction. We continue to work with the Department of Justice (DOJ) and other law enforcement offices to resolve four other SBIR cases.

Outside of the SBIR arena, we often work closely with grantee academic and research institutions to coordinate investigations regarding allegations of financial improprieties involving NSF funds and programs at those institutions. University internal auditors, for example, assist us by explaining their university's accounting and records systems as well as policies and procedures. They also have internal sources of information that can provide key investigative leads.

We believe grantee institutions also benefit from our coordinated investigations. The grantee can use jointly obtained evidence to support prompt and appropriate administrative action to stop improper activities while state or federal authorities decide whether criminal prosecution or civil litigation is warranted. In a number of cases, university internal auditors have used evidence gathered during the coordinated investigations to support their own recommendations to their university. Auditors' recommendations based on coordinated investigations have supported administrative

actions ranging from suspension of a subject's signature authority over university funds to placement of the subject on administrative leave or termination of the subject's employment. In those cases where we successfully coordinated our investigative efforts with grantees, but concluded that criminal prosecution or civil action was unwarranted, we often allow the institution to resolve any outstanding administrative issues.

Several of our coordinated investigations are detailed in this report.

Cases Involving Improper Use of NSF Funds

We place a high priority on allegations involving embezzlement, diversion of grant or contract funds for personal use, or other illegal use of NSF funds. Deliberate diversion of NSF funds from their intended purpose is a criminal act that can be prosecuted under several statutes. We encourage universities and other grantees to notify NSF of any significant problems related to the misuse of NSF funds. Early notification of significant problems increases our ability to investigate allegations and take corrective action to protect NSF and its grantees.

University Professor Indicted for Theft and Abuse of Official Capacity

We worked jointly with the Federal Bureau of Investigation (FBI), the Defense Criminal Investigative Service, state and federal prosecutorial authorities, and university internal auditors in investigating allegations involving a professor at a southwestern state university. The professor, who was the PI on NSF awards as well as research awards from other federal, state, and private grant-making entities, was also the owner of two private companies. One of the professor's companies had submitted proposals to, and obtained federal research awards from, the SBIR program administered by various federal agencies, including NSF and the Department of Defense (DOD).

Our joint investigation revealed evidence that the professor had used university funds and resources for his personal gain. In February and March 1998, based on this joint investigation, a state grand jury brought three separate felony indictments against the professor. One of the indictments charged the professor with *Theft* for appropriating property of another that came into his custody and possession through his position as a public servant. Two of the indictments stated that, as an employee of the state university system and therefore a public servant, he misused government money that came into his custody and possession by virtue of that employment. These two indictments charged the professor with *Abuse of Official Capacity* for using state government money for personal gain.

An indictment charges that the professor intentionally and knowingly misused government money for his personal gain to pay expenses for: (1) printing promotional fliers for courses he sponsored through a personal business; (2) textbooks for those courses; and (3) airline flights, hotel accommodations, meals, and ground transportation related to the courses. Another indictment charges that the professor intentionally and knowingly misused government money for his personal gain to pay travel expenses related to the operation of the professor's other small business, which had secured SBIR funding from the federal government.

In a separate outgrowth of our investigation, DOD proposed that the professor and his SBIR company be suspended from eligibility for federal grants and contracts, and suspended a pending \$750,000 Phase II SBIR award to the company. That procurement was canceled during this period, and the funds were used for an SBIR contract to another small business.

Our coordinated investigation with the university led to a determination that the professor had failed to disclose his outside business interests to the university as required by university regulations, and he had made affirmative statements to conceal these business interests. In one instance, in a proposal to the university and a state funding agency, the professor stated that a company had pledged to provide \$170,000 in matching industrial support for the project; however, he did not disclose that he was the owner of that company. Based on this proposal, the

state agency awarded \$235,588 to the university with the professor as PI. We found that no matching support was ever provided by the professor's company. The university and state agency determined that the professor's failure to disclose his interest in the company was material to the award process and canceled the grant.

The university also found that the professor had used university resources for activities related to his personal companies. When required to designate an account to be charged for the use of these resources, the professor charged many of the associated costs to research accounts, including an account for an NSF grant on which the professor was a co-PI. The university found that the professor had wrongfully charged the NSF grant \$100,349. The total amount of the NSF award was \$318,304, and the university provided \$308,191 in cost sharing for this project. The university returned \$100,349 to the project to fund continued research by the other PIs. The university removed the professor as co-PI on this NSF award, and it replaced the professor as PI on another NSF award, which totaled \$323,730. On another NSF award that expired during the investigation the university returned \$60,582 of unspent funds. The university also placed the professor on administrative leave and restricted his signature authority to charge expenses to university accounts.

Administrative Assistant Agrees to Pretrial Diversion for Embezzlement

In a case involving an investigation we coordinated with a west coast university, we determined that the director of an NSF-funded biology project “loaned” \$6,000 to her administrative assistant from an unauthorized private bank account created specifically to manage program income generated by the NSF grant. The administrative assistant also subsequently wrote four checks to herself from the account, totaling \$11,600, and forged the director’s signature on the checks. During the investigation, the administrative assistant repaid the university the \$17,600 she had received from the project income account, plus an additional \$1,000 which she described as “interest.” The administrative assistant admitted, in a sworn statement to OIG agents, that she signed the director’s name on the checks without authorization, and that she used the money to pay for work being done on her house. She also stated that she had always intended to repay the money, plus interest. We referred the matter to the cognizant U.S. Attorney’s Office.

In November 1997, the U.S. Attorney’s Office filed a criminal complaint charging the administrative assistant with violating 18 U.S.C. § 666, *Theft or Bribery Concerning Programs Receiving Federal Funds*. Subsequently, the U.S. Attorney’s Office and the administrative assistant agreed to resolve the case by having the assistant enter a pretrial diversion

agreement, which mandated 18 months of supervised probation, 200 hours of community service, and counseling as directed by Pretrial Services. If the assistant successfully completes the supervised probation, the charges will be dropped.

In the course of this investigation, we also identified questionable entertainment expenses the administrative assistant and the director had charged to the NSF grant. The university agreed to credit the NSF grant account for approximately \$7,360 of these charges. During the investigation, the director resigned from the university and the university terminated the employment of the administrative assistant.

Conditions Placed on Future NSF Funding for a Northeast Nonprofit

We received allegations that a small science center in the northeast had misused NSF funds from a grant that was to provide an environmental science program for teachers. The center, a nonprofit organization offering educational programs in science, previously received a number of awards to develop and disseminate science education materials to teachers in secondary schools. While we found evidence that the organization produced the program that it proposed, and identified no specific examples of misuse, we also found evidence that the institution was financially unstable and that financial records had not been adequately maintained.

Because the science center has no current federal awards but had previously received over \$1 million from NSF, we recommended that NSF take action to ensure that further funding is not provided to the science center or any other organization operated by its current director unless the organization can demonstrate that it has an adequate system for maintaining financial records that comply with applicable federal regulations. NSF agreed with our suggestion and immediately took steps to implement it.

NSF Funds Reprogrammed After Jury Verdict

An FBI investigation of an NSF-funded scientist resulted in his being found guilty by a U.S. District Court jury of extortion and fraud. Based on the FBI investigation, we began an inquiry into the scientist's use of NSF grant funds. Our inquiry led the scientist's university to voluntarily suspend a newly awarded NSF biology grant that named the scientist as PI. Following the jury verdict, NSF and the university agreed to cancel the 3-year continuing grant, allowing NSF to reprogram the \$345,000 awarded. After the scientist is sentenced, we will recommend that, based on the fraud conviction, NSF debar the scientist for 3 years from receiving federal grants and contracts.

Update on Continuing Investigations of NSF SBIR Awardees

As previously stated, we continue to coordinate SBIR investigative efforts with other agencies and are currently conducting several joint investigations of companies that receive funds from NSF's SBIR program. The following significant actions involving SBIR cases occurred during this reporting period:

- During a review of an east coast company that had received NSF SBIR funding, we found evidence that the company had received awards from the Department of Education (DoEd) and the National Institutes of Health for identical projects by making misstatements and omissions in the proposals and signing false or misleading certifications. Because the fraud did not involve NSF awards, we referred the matter to the DoEd OIG for investigation. In February 1998, the company's president, who was the PI on the duplicate awards, pled guilty to one count of violating the mail fraud statute, 18 U.S.C. § 1341, *Fraud and Swindles*, for submitting false and fraudulent documents through the mail in order to receive identical SBIR awards. The company president is to be sentenced later this year.
- During a review of a company that had received several NSF SBIR awards, we found evidence that the company may have received duplicate awards from NSF and DOD. DOD investigators joined our review of this company's SBIR awards and we found

evidence that the company may have submitted similar or identical proposals to several different federal agencies without disclosing prior submissions, as required in the solicitations, even though this action rendered the proposals and accompanying certifications false or misleading. We referred this matter to the U.S. Attorney's Office, which is now coordinating a joint investigation that includes all involved federal agencies. During this reporting period, the U.S. Attorney's Office sent a letter to the company notifying it of the investigation and asking for the company's response to allegations that it had wrongfully applied for and received duplicate awards.

- NSF, and several other agencies that award SBIR grants and contracts, received allegations that a company was misusing SBIR funds by receiving duplicate awards and by subcontracting work on SBIR awards to other companies owned by its president. We coordinated the investigative efforts of all the agencies that had made SBIR awards to this company. Our initial review found evidence to support the allegations and we referred this matter to the cognizant U.S. Attorney's Office. We and the U.S. Attorney's Office are now coordinating this multi-agency investigation.
- A civil complaint seeking \$298,854 in damages and penalties was filed by the cognizant U.S. Attorney's Office,

charging violations of 31 U.S.C. § 3729, *False Claims Act*, alleging that a west coast company had submitted similar or identical proposals to different federal agencies without disclosing the prior submissions, as required. As a result of these misleading submissions, the company received a \$49,618 SBIR award from NSF after receiving a \$49,983 SBIR contract for the same project from another federal agency. Based on the evidence supporting the civil complaint, NSF suspended the company and the company's president, who was the sole PI on all SBIR proposals by the company, from participating in federal grants and contracts.

- In our investigation of a Midwest company, we found evidence that the company had submitted false claims to receive \$50,000 of NSF SBIR grant funds. The company president was ineligible to be the PI on the NSF SBIR award because he was a full-time employee at a university during most of the SBIR award period. In addition, the company, acting through its president, who was also the PI on the award, presented data in the SBIR final

technical report as having been obtained for the NSF award. In fact, the data were obtained before the NSF SBIR award was made for another, unrelated, federally funded project conducted by and at the university. The company no longer submits proposals through the SBIR program; therefore, we are working with the cognizant U.S. Attorney's Office, which is negotiating a civil settlement to resolve this matter.

- We found evidence that a company had placed a graphic image of the NSF logo on its website along with the words "A National Science Foundation SBIR Site," without NSF's authorization or knowledge. This company had never received funding from NSF. It received the logo from another entity, which had been given the graphic image under an NSF contract. We were concerned about the unauthorized use of the NSF logo and the words "A National Science Foundation SBIR Site," because it implied a close affiliation between the company and NSF. Based on our investigation, the company removed the NSF logo and the words "A National Science Foundation SBIR Site" from its website.

Other Investigative Matters

Conflicts of Interests

In Semiannual Report Number 17, we mentioned that we referred two conflict-of-interests investigations to DOJ. The conflict matter involving honoraria payments remains pending at DOJ. The conflict matter involving stock ownership was declined by DOJ. Our investigation in that matter found evidence that an NSF program officer had failed to recuse himself from acting on proposals submitted by a company after he purchased stock in the company, despite being advised to do so by NSF's Designated Agency Ethics Official. After receiving advice from the Designated Agency Ethics Official, the program officer improperly participated in the review process by recommending the declination of two proposals submitted by the company and by summarizing panel reviews for a third proposal, which was also declined. Participation of any kind (including declination) is a violation of federal conflict-of-interests laws and regulations. During this report period, NSF suspended the program officer for 14 days.

Anti-Spam Legislation Needed

"Spam" is a term applied to widely disseminated, unsolicited electronic mail. The quantity of spam has increased dramatically in recent years, wasting both recipients' time and Internet resources. We reviewed the status of the law after receiving complaints from NSF staff who had received spam at their NSF electronic mail addresses. We determined that current law affords no effective means of taking action against this practice, unless the spam constitutes fraud or other wrongdoing. Two bills pending in the Senate would allow users of the Internet to avoid spam and would allow legal action to be taken against the senders of spam in certain circumstances. The enactment of either bill into law would enable federal agencies, such as NSF, to protect agency resources against the ever-increasing onslaught of unsolicited electronic mail.



Oversight

The Office of Oversight focuses on the science-engineering-education-related aspects of NSF operations and programs.

It oversees the operations and technical management of the approximately 200 NSF programs that involve about 50,500 proposal and award actions each year. The Office conducts and supervises compliance, operations, and performance reviews of NSF's programs and operations; undertakes inspections and evaluations; and performs special studies. It also handles all allegations of nonfinancial misconduct in science, engineering, and education and is continuing studies on specific issues related to misconduct in science. The Office's scientists and engineers engage in outreach activities to acquaint NSF's staff with misconduct in science policies, inspections, and with OIG activities in general.

Oversight Highlights

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Misconduct in Science and Engineering

Partnership With Universities in the Referral Process

Our practice of referring allegations of misconduct in science to awardee institutions for investigation is guided by NSF's misconduct in science regulation that affirms "awardee institutions bear primary responsibility for prevention and detection of misconduct" (45 C.F.R. §689.3(a)). This practice permits awardee institutions to take responsibility for activities on their campuses and provides us with the relevant scientific community's assessment of whether a subject's actions are considered serious.

As explained in Semiannual Number 12 (page 26), we refer cases to awardees for investigation after we, or the awardee, conduct an inquiry to determine whether the allegation requires investigation. A referral allows each partner to perform its role. When an awardee institution accepts the referral of an allegation, we delay our own investigation, pending the receipt of the institution's investigation report. We review an awardee institution's report to determine if it is accurate and complete and if usual and reasonable procedures were followed. We determine whether we can use it instead of initiating our own independent investigation.

The balance that is maintained between the partners permits each to take actions it considers appropriate and necessary. Although we both share responsibility for the integrity of the scientific community, an awardee institution takes action within its community and NSF takes action within the federal context.

We reviewed our closed cases to develop a quantitative assessment of the frequency with which we refer cases and the effectiveness of our referral process. We determined that, from our office's inception in 1989 until September 30, 1997, awardee institutions conducted 88 percent of our completed investigations. We were unable to refer a few of these investigations to awardee institutions because we were notified of the matter after they had completed their efforts. The remaining 12 percent were investigated by our office alone because the institution's size, the location of the individual, or the nature of the allegation precluded an impartial evaluation of the allegations by the institution.

We considered 61 percent of the investigations conducted by awardee institutions to have met our criteria, and accepted the institution's investigation reports as our own, often after contacting the awardee institution to request clarification or supplementary information. The remaining 39 percent of awardee investigations required further investigation by our office. Our investigative efforts were principally to develop more evidence about intent, seriousness, or a pattern of behavior uniquely important in support of our recommended actions to NSF management. Of all the investigations conducted by awardee institutions, we considered only 10 percent to be unacceptable, requiring that we conduct our own review.

Our practice of referring cases to awardee institutions has routinely provided our office with information upon which we have relied when making our own recommendations.

Although we frequently supplement these reports with additional information, we have rarely been required to conduct an entirely new review. We believe that the referral process strengthens our partnership with awardee institutions and the scientific community. It ensures that our recommendations are grounded in the relevant scientific community's assessment of its members' actions and not in a process dissociated from the community served by NSF.

Case Leading to Investigative Report Sent to the Office of the Director

Plagiarism From Three Published Papers

We received an allegation that the president of a small business (the subject) plagiarized from a previously published paper (paper 1) into his proposal submitted to NSF's SBIR program. It was alleged that the subject's proposal was based on the same basic research ideas put forth in paper 1 and that it relied significantly on the theory and the application of that theory as developed in paper 1. We determined that the subject's proposal contained extensive, verbatim text, a figure, references, and formulas identical to those in paper 1, but without attributing or distinguishing the copied material from material original to the proposal. We also determined that the subject's proposal contained verbatim text without attributing or distinguishing it from a second, published paper (paper 2).

We wrote to the subject three times and telephoned him once asking for an explanation for the similarity of his proposal to the published papers. We did not receive a substantive response. For this reason, we took the unusual step of proceeding without input from the subject.

We asked an expert in the proposal's field of science to compare paper 1 and the

subject's proposal to evaluate the significance and seriousness of the duplication between the two documents. During his evaluation, the expert noticed that a figure in the proposal was an unattributed reproduction of a figure from a third paper and that most of that figure's caption was also copied. Our expert reported that most of the verbatim duplication between the proposal and paper 1 occurred in the section of the proposal containing the scientific and technical justification for using this specific approach to the problem. The expert said that the volume of copied material was substantial and that the proposal made use of the scientific research ideas originally presented in paper 1. We considered the subject's verbatim use of this material from paper 1 more serious because he incorporated almost all of the text that presented and justified the original ideas in paper 1 into his proposal.

Although the subject included citations in his proposal to papers 1 and 2, these citations did not adequately convey to the reader that he used ideas, verbatim text, formulas, references, and a figure from paper 1 and verbatim text from paper 2 in his proposal. Our expert said that in key places, proper attribution was not given and it was not clear to the reader that much of the background discussion came from paper 1. The expert considered the non-

attribution significant and serious. We concluded that a preponderance of the evidence supported the conclusion that the subject copied substantial material from three published papers and used scientific research ideas from paper 1 in his proposal.

It is inconceivable that the subject could have inadvertently copied such a large quantity and variety of material without acting intentionally. He copied extensive material from three published papers and, in particular, two figures from two different published papers were xerographically reproduced and included in his proposal without any citation or acknowledgment. In light of the fact that the subject did provide some citations to source documents within the proposal, including some properly referenced figures, it is not probable that the subject forgot to provide the appropriate references and to distinguish the copied text from his own. The subject demonstrated a selective use of citations, not a lack of knowledge about how to use them.

We believe that a preponderance of the evidence supports the conclusion that the subject acted knowingly when he plagiarized material from three source documents with the intention of deceiving NSF's reviewers and Program Director into believing that these were his ideas, and that he had the expertise and knowledge to complete the project.

We recommended that NSF conclude that the subject committed misconduct in science and take three actions to protect the federal government's interest. First, NSF should send a letter of reprimand to the subject informing him that NSF has made a finding of misconduct in science against him. Second, for 3 years from the final disposition of this case, NSF should require the subject to obtain certification, signed by himself and co-signed by the PI or manager of any federally sponsored research, that any documents the subject prepares in connection with the research project contain no plagiarism. Third, NSF should exclude the subject from participating as an NSF reviewer, advisor, or consultant for 3 years from the final disposition of this case.

Decisions by the Office of the Director

Agreement to Voluntary Exclusion Settles Case of Obstruction of Agency Proceedings

As reported in Semiannual Report Number 17 (page 43), at our recommendation, NSF issued a notice proposing to debar a university professor from receiving federal funds for his having submitted and vouched for the authenticity of false evidence during an investigation

into allegations that he had committed misconduct in science. In this reporting period, the professor entered into a binding agreement with NSF to resolve the debarment proceeding and misconduct-in-science allegation. Although denying wrongdoing, the professor acknowledged that there was sufficient evidence

to permit a fact finder to conclude that he submitted falsified evidence for the purpose of disproving the

misconduct in science charge being investigated by the OIG, that [he] knew that the evidence was falsified, and that [he] made false statements under oath in the OIG investigation concerning the authenticity of the evidence.

The professor accordingly withdrew his request for a fact-finding hearing, and voluntarily excluded himself from receiving any funds from, serving as a PI on, or having supervisory responsibility, substantive control or critical influence over, awards from any federal agency for 2 years following the date of the agreement. He also voluntarily excluded himself for the same period from serving as a merit reviewer, panelist, or member of a Committee of Visitors for NSF. In turn, NSF agreed not to issue a finding of misconduct in science against the professor or to make further referrals to federal or state prosecutorial authorities based upon the facts in the administrative record.

NSF also agreed to fund a pending proposal by his university on which the professor had originally been named as PI, conditioned on his replacement as PI and his exclusion from supervisory or management control over the research. This agreement tracked the terms of NSF's debarment regulation, 45 C.F.R. Part 620, which contemplates that persons debarred or voluntarily excluded from financial assistance and benefits under federal programs and activities may not have "primary management or supervisory responsibilities" or have "critical influence on or substantive control" over a covered transaction during the period of debarment or voluntary exclusion. However, the university ultimately withdrew the proposal "due to the voluntary exclusion of [the

professor] from receiving Federal funds and the university's inability to arrange for an appropriate substitute PI."

Postdoctoral Researcher Falsified Data

In Semiannual Report Number 17 (pages 39-40), we discussed the case of an NSF-supported postdoctoral researcher who falsified data from a commercial firm's analysis. We recommended that NSF's Acting Deputy Director find the subject committed misconduct in science and impose certification and assurance requirements in the event the subject associated himself with an NSF-supported project. NSF's Acting Deputy Director sent the subject a letter of reprimand that concluded he committed misconduct in science. He required for the next 3 years that the subject submit, in connection with any NSF-supported publication or submission to NSF, a certification to OIG that to the best of his knowledge, his documents contain no false data and no hypotheses or conclusions based upon falsified data. He also required that the subject ensure that an appropriate supervisory official provide an assurance that, to the best of his or her knowledge, the subject's work associated with any NSF-supported publication or submission to NSF does not contain falsified data and presents neither hypotheses nor conclusions based upon falsified data.

Use of Paraphrased Text in an NSF Proposal

In Semiannual Report Number 15 (page 40), we described a case of a PI whose failure to cite text paraphrased from a source document had given rise to an

allegation of misconduct in science. We deferred the case to the institution whose Investigation Committee did not view the subject's copying as plagiarism. The Committee determined that the subject had not committed misconduct in science. We regarded the Committee's view of plagiarism as too narrow because it did not recognize that paraphrased text needed to be cited to a source document.

The adjudicator, NSF's Acting Deputy Director, determined that although the subject "did not adequately apprise the reader of the full extent of [his] reliance on the . . . review article in the background section of [his] NSF proposal," he "did not seriously deviate from accepted practices or engage in scientific misconduct." He cautioned him

to use great care in future NSF proposals or submissions to ensure that [he] attribute[d] full credit to the original author and that [he] offset verbatim or paraphrased text and include[d] citations to the source document.

On Appeal, NSF Upholds Misconduct Decision

In Semiannual Report Number 17, we discussed NSF's Acting Deputy Director's decision to debar for 2 years a scientist who plagiarized text from a review article and an NSF proposal. The plagiarized text appeared in four different proposals that sought funding for the same underlying research project. The subject appealed this decision to NSF's Director. The Director concluded that the administrative record established that the subject plagiarized text into four proposals and that he attempted to conceal his actions by requesting that the original author not serve as a peer reviewer of his proposal. The Director concluded that the 2-year debarment was warranted and observed that the University investigation committee recommended a longer period of debarment. He noted that the University investigation committee was unaware of the full extent of the subject's plagiarism (which we discovered during our subsequent investigation).

Misconduct Cases Involving Citation Errors in NSF Proposals

PIs cite papers and manuscripts in NSF proposals to reference work and to show their accomplishments under prior NSF-supported projects. This information needs to be prepared carefully so the PIs' proposed research can be evaluated and compared with competing proposals fairly by everyone involved in the review process. We closed three cases this period in which inconsistent, incomplete, and inaccurate citations for papers and manuscripts gave rise to allegations of misrepresentations in NSF proposals.

In the first case, it was alleged that the subject, in three successively submitted NSF proposals, misrepresented facts about the submission and publication of a co-authored manuscript. In his first proposal, the subject stated in two separate sections that the manuscript was either submitted to one journal or to a second journal. In three separate sections of his second proposal, the subject cited the manuscript as "accepted" by the second journal and included the date of acceptance by the journal in two of these sections. In the third proposal, the subject listed the manuscript as "accepted" by the second journal. In his most recent progress report for his award (from the first proposal), he stated that the manuscript had been published in yet a third journal.

We learned from the subject that the manuscript had been submitted to, but rejected by, the first journal. The subject's co-author had then submitted a revised manuscript for comment to a member of a scientific society that publishes the second

journal. The co-author relayed comments attributed to the member to the subject. The subject incorrectly interpreted these comments to mean that, pending some revisions, the manuscript would be published in the second journal. The subject then began incorrectly citing it as "submitted" to, and then as "accepted" by, the second journal in his NSF proposals. Later, the subject learned that the society member had not read the manuscript. Once he had, he said it was not ready for publication. The co-authors then revised the manuscript and submitted it to the third journal, in which it was published. The subject said that his actions were "honest error[s]," but that he had also been "naive and incorrect." We considered the subject's actions to be a bad practice, but not sufficiently serious to initiate an investigation. We concluded that no further action was required in this case because (1) he is aware, through our exchanges, that his incorrect claims about his manuscript were a bad practice and do not meet the community's expectations for high scholarship and (2) the subject's accurate citation for the manuscript in his progress report for the award had corrected NSF's record.

In the second case, a reviewer alleged that the subject misrepresented information in his proposal because he failed to cite a manuscript that discussed the results of the proposed project. We learned that the subject had submitted four proposals on the same idea over a 3-year period. The first three proposals were declined (the third was the focus of this

inquiry) and the fourth was funded. According to the subject, there were two separate manuscripts describing a pilot project; the second was a revision of the first. He explained that the earlier manuscript had been rejected by the editor shortly before he submitted his third proposal and that the later manuscript was submitted after NSF received it. He said he should have clarified the status of the project and the relationship of the manuscripts to it in his proposal. We concluded that the reviewer's concerns could have been avoided if this explanation had been included in the third proposal.

In the third case, a reviewer alleged that the subject had misrepresented the titles of two co-authored papers and a co-authored manuscript in two separate sections of his NSF proposal by changing the species name of an organism in those titles. For the two papers, we confirmed that the journals had not been officially notified of any corrections. We learned that the correct speciation of the organism has been the focus of an ongoing scientific disagreement. In one of the papers, the

authors discussed their uncertainty in using the species name in the title and deferred any final decision on its correctness until they had more information. We concluded the title changes were consistent with the subject's attempt to clarify his position in the debate. Further, the changes had not introduced a significant error in the record or misinterpreted his research. We concluded that the subject's changes were a careless way of providing information in an NSF proposal; however, they were not, in this case, sufficiently serious to pursue.

These examples demonstrate the importance of careful preparation of proposals. The *Grant Proposal Guide* instructs applicants to prepare their proposals with "strict adherence to the rules of proper scholarship and attribution" (NSF 98-2). If the subjects in these three cases had carefully checked the information provided in their proposals prior to submission, the interpretations that led to the allegations of misconduct in science could have been avoided.

Examination of Merit-Review System

The Senate Committee on Commerce, Science, and Transportation was concerned about the possibility of NSF awards being given out in circumvention of merit review. At the Committee's request, we sought to identify any discretionary spending programs that have no formal merit-based criteria established or that have criteria that are not being properly applied. We determined NSF's merit-review system uses reasonable and impartial criteria that are fairly applied throughout NSF's programs.

All NSF awards are merit reviewed, either through the peer-review system, which solicits opinions from experts outside the Foundation, or through internal review by NSF program officials. Awards made without outside peer-review are restricted primarily to special classes of proposals, such as workshops, conferences, and Small Grants for Exploratory Research. We examined awards for FY 1997 that were made without outside peer-review and determined that the waivers of outside peer review were reasonable and consistent with NSF guidelines.

While there are both statutory and administrative priorities regarding particular programs, such as K-12 science education, global climate change, or polar programs, these are not specific to individual institutions. The only exceptions we found were in report language accompanying FYs 1994 and 1995 NSF appropriations that provided funds to review NSF's research centers. However, these allocations appear to have been directed at administrative issues rather than substantive scientific research.

Our findings are consistent with those of reviews conducted by the General Accounting Office, an external Proposal Review Advisory Team, and a joint NSF and National Science Board Task Force on Merit Review. We concluded that formal merit-based review criteria exist to guide all of NSF's funding decisions, and that the applicable criteria are appropriately applied to these funding decisions. We did not identify any NSF programs or awards for which such criteria were absent or improperly applied.

Other Oversight Activities

We describe aspects of four cases we closed this period in which concerns were raised about NSF's management decisions. In the first case, our efforts resulted in an improvement in an NSF program, and in the remaining cases, our review of NSF programmatic and managerial decisions concluded that NSF had proceeded properly.

Database user alleges "invasion of privacy"

NSF maintains an Internet accessible database system that contains information on academic science and engineering resources. A complainant accurately informed us that new users could not access the database without providing information, such as their names and e-mail addresses, that the complainant considered an invasion of privacy. Most of the user-entered information was stored so that each future use did not require re-entering all of the originally requested information.

The program manager (PM) responsible for the database explained that the requested information allowed NSF to statistically determine the percentage of users from academia, the government, or the private sector. The PM said he was concerned about any negative impression users might have about providing identifying information and said he would change the *requirement* that users enter their names and e-mail addresses to an *option*. We confirmed that he had implemented this change and that users may now access the database anonymously.

NSF's alleged "cover-up"

The complainant alleged to OIG that his university had misrepresented his abilities during an NSF site visit in connection with a proposal, and that the

PM refused to acknowledge the university's misrepresentation. The complainant was not listed as a PI or co-PI on the proposal, but was to provide technical support. The complaint was concerned that possible misrepresentations in NSF records were damaging to his professional reputation and sought information from us. We determined the complainant's request for information about the site visit was more appropriately handled as a Privacy Act request and forwarded it to NSF's Privacy Act Officer, who informed the complainant that the only information about him in the proposal was a copy of his *vitae* and offered it to him.

Unsatisfied with this response, the complainant alleged to OIG that NSF was engaged in a "cover-up" because it would not provide him the information he sought. He said he was concerned with "things not in the proposal" that should have been in the record, and thus alleged the PM was not being honest about his description of the site visit. The complainant also alleged that the PM had spoken with the media about the project. The complainant asked OIG to investigate his allegations. The complainant provided no evidence to support his allegations, but did provide us with the names of individuals who participated in the site visit.

We interviewed these people and the PM and found no written or oral evidence that anyone from the site visit team acted

inappropriately, that NSF has any records about the complainant it has not offered him, or that anyone from the complainant's university misrepresented his abilities to NSF's site visit team.

PI's Replacement of Project Personnel

As part of a larger case, a complainant alleged that her removal as director of an effort that was supported by a supplement to a PI's larger NSF award violated NSF's *Grant General Conditions* (GC-1). The institutional officials to whom she appealed supported the PI's decision. We learned the NSF award jacket contained a message from the PI documenting the decision to replace the complainant. The complainant sought our assistance after she spoke with NSF staff requesting their intervention; NSF staff had concluded that her removal did not require NSF approval.

The GC-1 stipulates that although a grantee can seek NSF's advice, the grantee is responsible for the administration of an award. Seeking NSF's advice does not shift the responsibility for operating decisions to NSF. The GC-1 specifies only that NSF must be notified and approve of the unusual absence of, or a change in, PI; it does not require NSF approval for the removal of other project personnel, such as the complainant. We concluded that the PI was within his authority to replace the complainant and his decision was supported by the institution. The terms of the GC-1 had not been violated by the PI's decision and NSF had acted appropriately.

Unacceptable Remarks in an *ad hoc* Review

One case caused us to consider NSF's practices for handling inappropriate remarks made by reviewers—considerations we have periodically addressed. NSF management informed us that a PI, whose proposal had been declined, expressed concern about a PM's use of one *ad hoc* review. We reviewed the matter to determine if the PM had handled the *ad hoc* review appropriately. The review contained prejudicial language about the PI's and his students' ethnic group. The PI said the PM should not have used this biased review. The PI acknowledged, however, that the PM had written on the copy of the verbatim review that the paragraph with the prejudicial language "was not considered when making the decision." The PI subsequently contacted the PM, who explained she had not considered the prejudicial remarks in making her funding decision.

NSF's *Proposal and Award Manual* (PAM) explains that a PI should receive verbatim copies of all reviews except those determined to be unacceptable. Unacceptable reviews are not to be used in the evaluation of the proposal. According to the PAM, verbatim copies of all reviews used to make a decision must be sent to the PI after deleting information that could identify the reviewer and, in rare instances, other information that is necessary to protect certain other rights and interests.

We are aware that NSF PMs use one of the following approaches when dealing with inappropriate remarks in reviews. They (1) consider the review unacceptable and don't use it at all, or (2) use the review and include a note to the PI explaining that the inappropriate remarks were not considered.

We concluded that, however distressful such discriminatory remarks are, the PM's actions were consistent with NSF's requirements. Her decision to decline this proposal was consistent with her program's goals and objectives and was not influenced by the inflammatory remarks.

Oversight Staff Activities

- Two OIG scientists participated in a Conference on Managing Integrity in Research co-sponsored by the Public Health Service's Office of Research Integrity and the Office of the Vice President for Research at the University of Michigan in Ann Arbor.
- At NSF, OIG scientists and Japanese scientists from the National Center for Science Information Systems in Tokyo and from the JIKEI University School of Medicine in Tokyo discussed how NSF handles allegations of misconduct in science and engineering and how public information on findings of misconduct in science can be made readily accessible with Japanese scientists.
- At the annual meeting of the Association for Practical and Professional Ethics in Dallas, TX, the Assistant Inspector General for Oversight moderated a small group discussion of the keynote address, "Ethical Systems and Public Policy: The National Bioethics Advisory Commission Experience."

Inspections

Our office conducts external and internal inspections. External inspections are on-site reviews at grantee organizations that receive NSF funding. Internal inspections review NSF's administrative units.

Inspections are designed to highlight what works well and identify problems or deficiencies so that managers at NSF and NSF-funded organizations can improve their operations and better achieve research and education goals. Inspections are conducted by multidisciplinary review teams that may include scientists, engineers, auditors, computer specialists, investigators, lawyers, and management/program analysts.

We completed two external inspections during this reporting period, which were conducted at a public school system in the South and at a private, non-profit biological laboratory in the Mid-Atlantic region. We did not conduct any internal inspections during this period.

External Inspections

We designed our external inspections program to improve our understanding of NSF's grantee activities by integrating financial, administrative, and program analyses in a single review. We view external inspections as an effective approach because they allow us to determine whether NSF's program goals are being achieved as well as review the financial and administrative management of NSF awards. Inspection teams look for early indications of financial, administrative, or compliance problems so they can be addressed before they become so serious that their resolution requires an audit or investigation.

We have been closely following the development of NSF's GPRA Strategic Plan for FY 1997-2003 and in particular, the GPRA performance measures included in the FY 1999 Performance Plan NSF sent to OMB to accompany its FY 1999 budget. Although we expect internal inspections to play a larger role than external inspections in our monitoring of NSF's GPRA compliance, our external inspections will examine the capacity of NSF's grantees to supply information relevant to NSF's GPRA performance measures.

Inspection of a Statewide Systemic Initiative in the South

We also discussed two questioned cost audits of systemic initiative awards in this report. See [page 8](#).

This inspection was based on a cooperative agreement made by NSF's Directorate for Education and Human Resources (EHR) with a state agency to

administer a project aimed at reforming the state's education system. Supporting projects such as this is one of NSF's key investment strategies toward its goal, stated in its *GPRA Strategic Plan*, of "promot[ing] broad-based or system-wide reform in science, mathematics, engineering and technology education that is based on national standards."

We found that project and NSF officials shared a commitment to results oriented management as envisioned in GPRA. They sought to use student achievement data to measure results and help them focus and improve their efforts. We learned that, despite this commitment, the project's capacity to generate and analyze results data was widely viewed as needing improvement.

Reporting to NSF

NSF receives ample programmatic information about the state agency's project, enabling NSF to monitor the project effectively. However, the state agency's reports did not supply necessary financial information, including some information that would have helped NSF evaluate programmatic performance. The cooperative agreement requires the state agency to annually report an estimate of carry-over funds with an explanation of the reasons if the funds exceed 10 percent of the year's budget. In the fourth year, the state agency reported that of the \$2.4 million it had received that year, there would be no carry-over funds at the end of the fourth year. However, we found that the state agency's five regional partnership subcontractors had carried \$362,582 (15 percent of the fourth-year funding) over to the fifth year.

The state agency did not report carry-over funds maintained by the subcontractors primarily because the state agency recorded cash advance payments to subcontractors as actual incurred costs. When the state agency claimed these cash advance payments as incurred cooperative agreement costs, NSF believed that the subcontractors had already used those funds to support educational reform activities.

NSF had no way to realize that funds were actually being carried over in the subcontractors' cash reserve.

To make a reasonable assessment of past performance and future budget needs, NSF needs accurate information about what funds have and have not been expended by the state agency's regional partnership subcontractors. Accordingly, we recommended that the state agency report any carry-over funds maintained by the subawardees with an explanation of the reasons if the funds exceed 10 percent of the year's budget. The state agency agreed that this information was useful for NSF and promised to include it in future reports.

Monitoring Subawardees

A major focus of our review was the state agency's management of its subawards to institutions across the state to engage in educational reform activities. As of August 31, 1997, the state agency spent 80 percent of costs claimed for the cooperative agreement (\$6.6 million) on regional partnership subcontracts and other subawards. We were especially interested in how the state agency monitored the activities of the project's five regional partners, which together received about half of the funds from NSF's award. In our visits to two of the regional partnerships and our interviews at the state agency, we found that project managers at the state agency were intimately familiar with programmatic activities in the regions and that communication between the state agency and its regional partners was excellent.

Our financial review found that the state agency's cash management procedures for its subawardees needed improvement. The state agency typically provided subawardees a large portion of their funds at the beginning of each subaward period based on long-term budget projections. NSF's Grants Policy Manual (GPM) and OMB Circular A-110 require that grantees and subawardees make actual disbursements in a minimum amount of time after the transfer of federal funds. We do not believe that the one-time cash advances to subawardees for an entire subaward period meet federal cash management requirements. When subawardees have unspent federal funds at or near the end of a subaward period, they may spend these funds in unauthorized or inefficient ways rather than choose to return unspent funds to the state agency. Accordingly, we recommended that the state agency implement appropriate cash management standards for its subawardees. The state agency agreed to implement procedures whereby subawardees will submit requests for payments based on their calculations of immediate cash needs.

As required by the cooperative agreement, the state agency had written agreements with each of the five regional partners. These agreements were generally well prepared and included detailed provisions regarding the state agency's expectations of its subcontractors. However, we noted that these agreements did not include a provision requiring compliance with NSF and federal regulations. This type of provision would be helpful in alerting subawardees to their obligations. When, as at a subawardee we visited, personnel are not familiar with NSF and federal regulations, the risk increases that the awardee will incur

unallowable expenditures. We recommended that in future subawards the state agency include a provision requiring compliance with NSF and federal regulations, and the state agency agreed to do so.

Inspection at Private Nonprofit Bioscience Organization

This inspection was based on nine grants made by NSF's Directorate for Biological Sciences. Over the 7 years spanned by these grants, NSF provided approximately \$2.7 million in funding. In 1996, NSF provided about 18 percent of the federal funding to this institution. Five of the grants were made by NSF's Living Stocks Collections program to support the various collections of biological materials maintained by the organization and its efforts to distribute and preserve authenticated specimens. The remaining four awards supported basic research.

At the time of our inspection, this 73-year old organization was in major transition. It is relocating, aligning itself with an academic institution, emphasizing the importance of an internal basic research effort, developing new databases for the storage and retrieval of information about its specimens, and changing its production and distribution practices. It is anticipated that the relocation will cause a large turnover in personnel. One of the three buildings it currently occupies was purchased, in part, with NSF funding. At our suggestion, the organization agreed to coordinate the sale of that building with NSF.

We found that this organization provides valuable services to the biological community. In terms of potential NSF GPRA results, the organization's efforts can be expressed as outputs and outcomes. It can measure how many samples it supplied for scientific research as well as how many times it responds to information requests from the scientific community. It can monitor the influence of the specimens, services, and information it provides on new discoveries and on subsequent directions taken by research efforts.

With the exception of the organization's misconduct in science policy and its laboratory records retention policy, we concluded that its policies and practices were consistent with NSF's expectations. The organization is modifying its current policies to incorporate many of our recommendations. We also concluded that the administration and management of these awards generally met NSF's standards. We learned that no formal subcontract existed in one of several awards that contained large subcontracts. We recommended that such a document be executed. We also learned that the NSF-approved budget for two of the grants in this inspection permitted the organization to charge some of the expenses of advisory committee meetings as direct costs that allowed it to recover the associated indirect costs. NSF has clarified that such meeting costs may be charged to NSF grants, but only as participant support, which does not permit indirect cost recovery. We recommended that the organization and NSF consider the best way to implement these budgetary changes.

Statistical Data

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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	104,885,996
B. Recommendations that were issued during the reporting period (these were issued in 6 reports)	22,689,440
C. Adjustment resulting from resolution process	0
Subtotal of A+ B+ C	127,575,436
D. For which a management decision was made during the reporting period	39,822,080
(i) dollar value of recommendations that were agreed to by management	
<i>based on proposed management action</i>	8,160,129
<i>based on proposed legislative action</i>	0
(ii) dollar value of recommendations that were not agreed to by management	32,416,951
E. For which no management decision had been made by the end of the reporting period	86,998,356*
For which no management decision was made within 6 months of issuance	65,141,945*

*Of this amount, \$60 million is related to funds collected for the registration of domain names. These funds are the subject of litigation in Federal District Court.

Audit Reports Issued With Questioned Costs

	Number	Questioned Costs	Unsupported Costs
A. For which no management decision has been made by the commencement of the reporting period	65	8,532,906	3,126,932
B. That were issued during the reporting period	31	5,744,711	2,692,595
C. Adjustments to questioned costs resulting from resolution activities	0	0	0
Subtotal of A+ B+ C	96	14,277,617	5,819,527
D. For which a management decision was made during the reporting period	53	3,109,108	872,503
<i>(i) dollar value of disallowed costs</i>	N/A	1,286,459	N/A
<i>(ii) dollar value of costs not disallowed</i>	N/A	1,822,649	N/A
E. For which no management decision had been made by the end of the reporting period	43	11,168,509	4,947,024
For which no management decision was made within 6 months of issuance	21	5,497,942	2,254,429

Additional Performance Measures

As required by the Inspector General Act of 1978, we provide tables in each Semiannual Report to the Congress that give statistical information on work conducted by our audit and investigation units.

Tables that provide statistics concerning these required performance measures are on [pages 53 and 54](#). GAO and OMB suggested that Offices of Inspector General develop additional performance measures that provide information about their activities. As a result, we developed two additional performance measures to provide additional insights about the work of our office. The two additional measures are “Cost Sharing Shortfalls” and “Systemic Recommendations.”

COST-SHARING SHORTFALLS—NSF seeks to leverage its resources by acting as a catalyst, promoting partnerships, and, in some cases, obligating grantees to contribute substantial nonfederal resources to a project. When NSF award documents require substantial cost sharing, we seek to determine whether grantees are in fact providing promised resources from nonfederal sources.

We divide cost-sharing shortfalls into two categories. Shortfalls occurring during the life of a project indicate that the grantee may not be able to provide all promised resources from nonfederal sources before completing the project. Shortfalls that remain when a project is complete demonstrate that a grantee has in fact not met cost-sharing obligations; these findings result in formal questioned costs. The table on [page 45](#) provides statistical information about shortfalls occurring during the course of a project and at the completion of the project.

Auditors who conduct financial statement audits at grantee organizations may identify a general deficiency concerning cost sharing (which we classify as a “compliance finding”) but often do not identify the amount of a cost-sharing shortfall (which we classify as a “monetary finding”) because it is not material in the context of the organization’s overall financial statement presentation. We track both monetary and compliance findings that involve cost sharing.

SYSTEMIC RECOMMENDATIONS—OIG staff members regularly review NSF’s internal operations. These reviews often result in systemic recommendations that are designed to improve the economy and efficiency of NSF operations.

We routinely track these systemic recommendations and report to NSF’s Director and Deputy Director quarterly about the status of our recommendations. The table on [page 46](#) provides statistical information about the status of all systemic recommendations that involve NSF’s internal operations.

Audit Reports Involving Cost-Sharing Shortfalls

	Number of Reports	Cost Sharing Promised	At Risk of Cost-Sharing Shortfall/ (Ongoing Project)	Cost-Sharing Shortfalls at Completion of the Project*
A. For which no management decision has been made by the beginning of the reporting period				
1. Reports with monetary findings	19	60,886,936	30,481,530	408,070
2. Reports with compliance findings	7	N/A	N/A	N/A
B. That were issued during the reporting period				
1. Reports with monetary findings	10	13,833,241	11,557,912	182,165
2. Reports with compliance findings	1	N/A	N/A	N/A
Total of Reports With Cost-Sharing Findings (A1+ A2+ B1+ B2)	37	74,720,177	42,039,442	590,235
C. For which a management decision was made during the reporting period				
1. Dollar value of cost-sharing shortfall that grantee agrees to provide	12	28,980,608	17,217,736	263,721
2. Dollar value of cost-sharing shortfall that management waives	2	0	12,799	58,417
3. Compliance recommendations with which management agreed	8	N/A	N/A	N/A
4. Compliance recommendation with which management disagreed	0	N/A	N/A	N/A
D. For which no management decision has been made by the end of the reporting period				
1. Reports with monetary findings	17	45,739,569	24,808,907	268,097
2. Reports with compliance findings	0	N/A	N/A	N/A

*These findings result in questioned costs and are also identified in our table on questioned costs on [page 43](#).

Status of Systemic Recommendations That Involve Internal NSF Management

Open Recommendations

Recommendations Open at the Beginning of the Reporting Period	47
New Recommendations Made During Reporting Period	30
Total Recommendations to be Addressed	77

Management Resolution¹ of Recommendations

Recommendations Awaiting Management Resolution	11
Recommendations Resolved by Management	66
Management Agrees to Take Responsive Action	63
Management Decides No Action is Required	3

Final Action² on OIG Recommendations

Final Action Completed	40
Recommendations Open at End of Period	37

Aging of Open Recommendations

Awaiting Management Resolution:	
0 through 6 Months	11
7 through 12 Months	0
more than 12 Months	0

Awaiting Final Action After Resolution

0 through 6 Months	15
7 through 12 Months	4
13 through 18 Months	5
19 through 24 Months	0
more than 24 Months	2

¹ “Management Resolution” occurs when management completes its evaluation of an OIG recommendation and issues its official response identifying the specific action that will be implemented in response to the recommendation.

² “Final Action” occurs when management has completed all actions it had decided are appropriate to address an OIG recommendation.

Status of Systemic Recommendations That Involve Internal NSF Management

Recommendations Awaiting Management Resolution for More Than 12 Months

None to report during this period.

Recommendations Awaiting Final Action for More Than 24 Months

Report Title	Issue
Review of NSFNET	Audit of Infrastructure Account
Review of NSF's Property Management System	Responsibilities of Property Custodians

List of Reports

NSF and CPA Performed Reviews

Report Number	Subject	Questioned Costs	Unsupported Costs	Better Use of Funds*	Cost Sharing At-Risk
98-1001	Atmospheric Research Group	9,100	0	0	0
98-1002	Small Company	0	0	78,029	0
98-1003	School District	285,309	285,309	0	510,310
98-1004	City School System	225,938	111,039	0	0
98-1005	Zoological Society	66,512	64,502	0	2,362
98-1006	City Board of Education	2,071,176	1,671,623	0	366,611
98-1007	City School System	96,944	31,282	0	1,682,785
98-1008	Science Museum	5,534	0	87,000	0
98-1009	Research and Instrument Company	3,037	0	0	0
98-1010	Small Company	25,365	0	0	0
98-1011	Southwest College	35,167	0	0	0
98-1012	Telecommunications Company	31,327	5,126	0	0
98-1013	City School District	41,222	0	0	0
98-1014	Public Television Station	0	0	294,095	0
98-1015	School	103,123	66,294	0	7,700
98-1016	School	109,887	15,010	0	0
98-1017	City School System	104,658	68,780	538,816	0
98-1018	Small Company	705,125	20,000	0	8,987,733
98-1019	State Department of Education	1,099,207	292,927	0	0
98-1020	Hospital Organization	237,060	60,703	0	411
98-1021	Traineeship Program	259,556	0	0	0
98-1023	County School District	0	0	0	0
98-2001	Office of Polar Programs	0	0	20,936,500	0
98-2002	NSF's FY 97 Financial Statements	0	0	0	0

List of Reports

NSF and CPA Performed Reviews

Report Number	Subject	Questioned Costs	Unsupported Costs	Better Use of Funds*	Cost Sharing At-Risk
98-2003	NSF—Administrative Cost Recoveries	0	0	755,000	0
98-2004	NSF—Draft FY 97 Management Letter Report	0	0	0	0
98-6001	National Engineering Center	60,613	0	0	0
98-6002	Research Foundation	3,368	0	0	0
98-6003	City Public School System	0	0	0	0
98-6004	Science Center	0	0	0	0
98-6005	Association	3,040	0	0	0
	Total	5,582,268	2,692,595	22,689,440	11,557,912

* Over 5 years.

List of Reports

NSF-Cognizant Reports

Report Number	Subject	Questioned Costs	Unsupported Costs	Cost Sharing At-Risk
98-4009	Research Company	25,650	0	0
98-4011	Telecommunications Institute	65,695	0	0
	Total	91,345	0	0

Other Federal Audits

Report Number	Subject	Questioned Costs	Unsupported Costs
98-5012	School Foundation	13,569	0
98-5018	Northeast University	936	0
98-5072	Southwest University	6,654	0
98-5075	Botanical Garden	16,738	0
98-5101	Southwest University	1,437	0
98-5104	Midwest College	31,200	0
98-5121	Institute	564	0
	Total	71,098	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 within 6 months of the report's issue date. At the end of the reporting period, there were 21 audit reports with questioned costs, 5 reports with recommendations for funds to be put to better use, and 4 items involving cost sharing at risk. The status of systemic recommendations that involve internal NSF management are described on page 46.

Report Number	Title	Date Report Issued	Dollar Value	Status
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Items Involving Questioned Costs

95-5722	State Government	09/22/95	113,204	1
96-1002	State Department of Administration	10/01/95	181,459	1
96-1003	State Education Agency and University	11/14/95	514,268	1
96-1014	Educational Research Association	03/20/96	211,879	1
96-1025	Science Museum	03/28/96	237,678	1
96-1027	For-Profit Contractor	03/28/96	828,915	1
96-1031	Learning Center	09/30/96	337,377	1
96-2113	Contract Services Provider	08/29/96	4,054	1
97-1004	Public School System	02/07/97	130,996	1
97-1010	Northeastern University	03/13/97	451,147	1
97-1012	Mathematical Society	03/18/97	341,057	1
97-1018	School District	06/02/97	173,877	1
97-1021	Public School System	08/07/97	49,455	1
97-1023	University	09/03/97	134,358	1
97-1024	School District	09/03/97	52,151	1
97-1025	School District	09/04/97	345,937	1
97-1027	School District	09/17/97	133,478	1
97-1028	School for Science and Mathematics	09/19/97	251,639	1
97-1031	Research Corporation	09/30/97	314,690	1
97-1032	Communications Company	09/30/97	49,194	1
97-2105	Review of FFRDC	03/31/97	641,129	1

Audit Reports With Outstanding Management Decisions

Report Number	Title	Date Report Issued	Dollar Value	Status
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Items Involving Funds Put to Better Use

97-2107	Review of Funding for Development of the Internet	03/31/97	60,000,000	3
97-1031	Research Corporation	09/30/97	2,341,945	3
97-2115	Research Center	09/15/97	2,800,000	3

Items Involving Cost Sharing at Risk

97-1021	Public School System	08/07/97	292,352	2
97-1024	School District	09/03/97	822,279	2
97-1025	School District	09/04/97	11,511,738	2
97-1027	School District	09/17/97	624,626	2

Status Codes

- 1 = Resolution is progressing with final action expected in next reporting period.
- 2 = Information requested from grantee not yet received in full.
- 3 = Further negotiations required before resolution.

Investigative Activity and Statistics

Investigative Activity

Active Cases From Previous Reporting Period 49

New Allegations 14

Total Cases 63

Cases Closed After Preliminary Assessments 0

Cases Closed After Inquiry/Investigation 22

Total Cases Closed 22

Active Cases 41

Investigative Statistics

New Referral 2

Referrals From Previous Reporting Period 14

Prosecutorial Declinations 1

Indictments (including criminal complaints) 4

Criminal Convictions/Pleas 0

Civil Settlements 1

Administrative Actions 1

Investigative Recoveries* \$1,338,675

*Investigative recoveries comprise civil penalties and criminal fines and restitutions as well as specific cost savings for the government.

Misconduct Case Activity and Assurances/Certifications Received

Misconduct Case Activity

	FY 1997 Last Half	FY 1998 First Half
Active Cases From Prior Period	58	48
Received During Period	17	33
Closed Out During Period	27	23
In-Process at End of Period	48	58
Cases Forwarded to the Office of the Director During Period for Adjudication	4	1
Cases Reported in Prior Periods With No Adjudication by the Office of the Director	1*	3**

*This case is described in Semiannual Report Number 15, pages 40 through 41.

**These cases are described in Semiannual Report Number 17, pages 36 through 41.

During this reporting period, we closed 23 cases, 21 of them at the inquiry stage. These cases included allegations of plagiarism (verbatim and/or intellectual theft), violations of the confidentiality of peer review, failure to share samples, misrepresentations of research efforts, abuse of the mentor relationship, or human subjects violations. Many of these cases contained multiple allegations of misconduct in science. After reviewing information available to us from NSF or other sources, we found it necessary to obtain additional information from the subjects in nine of these cases.

Assurances and Certifications Received*

Number of Cases Requiring Assurances at End of Period	1
Number of Cases Requiring Certifications at End of Period	1
Assurances Received During This Period	0
Certifications Received During This Period	0

*NSF accompanies some findings of misconduct in science with a certification and/or assurance requirement. For a specified period, the subject must confidentially submit to the Assistant Inspector General for Oversight a personal certification and/or institutional assurance that any newly submitted NSF proposal does not contain anything that violates NSF's regulation on misconduct in science and engineering. These certifications and assurances remain in OIG and are not known to, or available to, NSF program officials.

Glossary

Funds to be Put to Better Use

Funds the Office of Inspector General has identified in an audit recommendation that could be used more efficiently by reducing outlays, deobligating funds, avoiding unnecessary expenditures, or taking other efficiency measures.

NSF's Definition of Misconduct in Science and Engineering

Fabrication, falsification, plagiarism, or other serious deviation from accepted practices in proposing, carrying out, or reporting results from activities funded by NSF; or retaliation of any kind against a person who reported or provided information about suspected or alleged misconduct and who has not acted in bad faith.

Questioned Cost

A cost resulting from an alleged violation of law, regulation, or the terms and conditions of the grant, cooperative agreement, or other document governing the expenditure of funds. A cost can also be "questioned" because it is not supported by adequate documentation or because funds have been used for a purpose that appears to be unnecessary or unreasonable.

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SEMIANNUAL REPORT
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