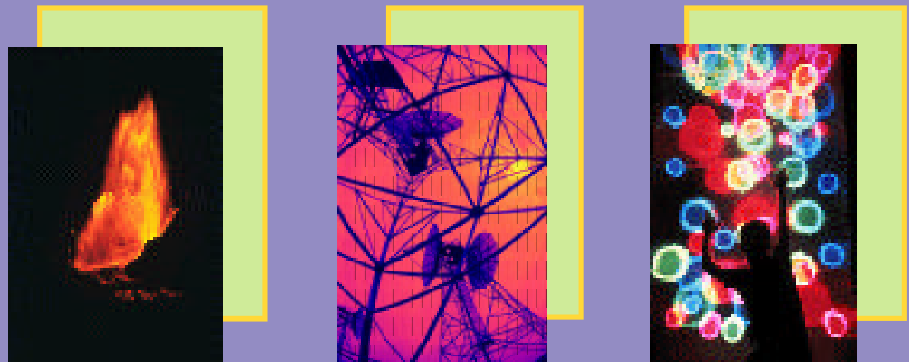
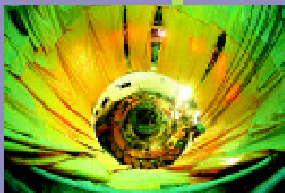


Oig.nsf.gov

Semiannual Report to the Congress



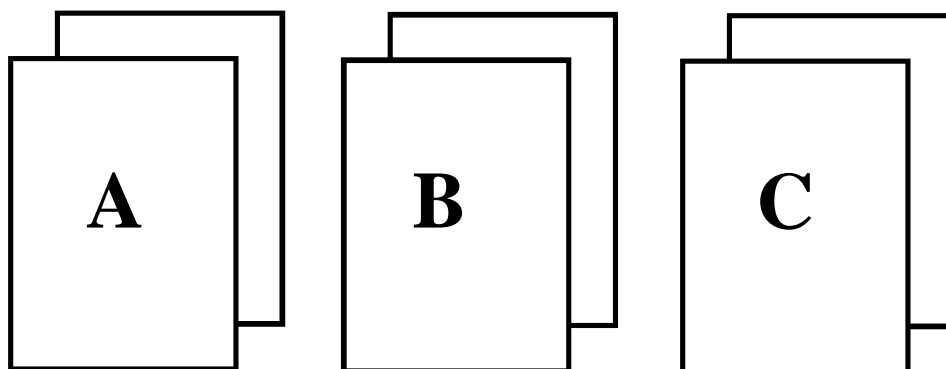
Yesterday...Today...Tomorrow...



SEPTEMBER 2000



Cover Photographs and Credits



- A** The height of this lava fountain in Hawaii was recorded at 1,000 feet.
Credit: National Science Foundation
- B** Satellite views from the bottom of a tower.
Credit: Dynamic Graphics
- C** A child inspects the “Wall of Lights” exhibit at the San Francisco Exploratorium.
Credit: San Francisco Exploratorium

The March 2000 Semiannual Report (23) to the U.S. Congress was designed by Sherrye L. McGregor and Belinda M. Robinson.

Sherrye McGregor is the Outreach and Oversight Attorney for NSF’s Office of Inspector General. Ms. McGregor coordinates the OIG Outreach and Liaison Programs and works with NSF awardees and professional societies to arrange seminars to discuss ethical and award administration issues in an interactive environment. She also resolves allegations of wrongdoing, including research misconduct, and coordinates OIG responses to FOIA and Privacy Act requests. Ms. McGregor was awarded a Juris Doctor from George Mason University School of Law and has been a member of the Virginia Bar since 1985.

Belinda Robinson is the Writer/Editor and Webmaster for NSF’s Office of Inspector General. Ms. Robinson is currently a Doctoral candidate at NOVA Southeastern University’s School of Business and Entrepreneurship in Fort Lauderdale, Florida.

Letter to the Congress of the United States

In January of this year I assumed the responsibilities and duties of Inspector General of the National Science Foundation (NSF). NSF is celebrating its 50th year as the only Federal agency devoted to supporting basic research in science, mathematics and engineering across all fields, and math and science education at all levels. During the past several months I have observed and learned about the challenges that face NSF and opportunities for the Office of Inspector General (OIG) in that context. I am encouraged by the OIG working relationships that have developed with the National Science Board, the Director and other officials within NSF, Members of Congress and their staffs, and the Inspector General community.

This report summarizes significant OIG activities during the period April 1 through September 30, 2000. The OIG staff remains highly dedicated to improving government by assuring efficiency and integrity in NSF's portfolio of programs. We reviewed internal functions of NSF and audited external awardee institutions, suggesting improvements in controlling credit card use and in assessing cost-sharing compliance. Cost-sharing requirements provide NSF with management challenges if awardees are not able to meet their program objectives. Cost-sharing principles and specific short-falls are discussed in this report. We hope that these findings will assist NSF in improving its administration of this important award requirement.



Several investigations focused on computer intrusions. These investigations are technically challenging and consume significant resources. I appreciate the assistance that we received from other OIGs, especially the United States Postal Service OIG. We are working with NSF to identify coordinated ways in which to improve computer security. With NSF's increased reliance on electronic systems, designed to facilitate programmatic and financial transactions, the security of these systems will remain an important challenge for us.

In addition to focusing on audit and investigative priorities, we took time to evaluate our internal structure and to revise our mission and vision statements. We revised the OIG strategic plan by engaging in extensive discussions among all staff, culminating in a two-day planning retreat. We believe that our planning process sharpened our shared sense of mission and clarified our understanding of the challenges we face.

Our new plan reaffirms our commitment to provide independent and objective information and to do our work in ways that advance NSF's mission. It strikes a balance between maintaining our independence and cooperating with stakeholders at NSF and in the communities it supports. We hope to tailor the traditional oversight role that Offices of Inspector General play throughout the federal government to the unique circumstances of

NSF and its funded community. Thus, we seek to focus our audits and reviews on issues of substantial concern and prospective importance to NSF by assessing the risks to achieving agency goals and selecting and designing projects in light of those risks. We plan to draw on our experience with misconduct in science to exercise leadership in the federal government and its IG community in implementing the new government-wide policy on research misconduct.

Finally, the plan identifies several strategies for improving our internal staffing and operations to better support our mission. Among these are articulating and refining key policies and procedures; doing better operational planning and priority setting; improving our technologies and databases; and developing a more focused approach to staff development and training. Our planning process also underscored the importance of crafting a coordinated strategy for dealing with computer security issues so that we can do effective audits and investigations in this area and address our own security needs.

A recurrent theme in the plan is our commitment to use our diverse disciplinary expertise and our knowledge of the agency to do more effective investigations and reviews. Another theme is trying to do more to help prevent problems. The plan highlights our education and outreach program as a vehicle for accomplishing our mission in these areas.

We look forward to continuing our work with NSF and the Congress, assuring the integrity and efficiency of our Nation's investment in learning and discovery.

Sincerely,

A handwritten signature in black ink that reads "Christine C. Boesz". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

Christine C. Boesz
Inspector General
September 30, 2000

Mission

We conduct independent and objective audits, investigations, and other reviews to support NSF in its mission by promoting the economy, efficiency, and effectiveness and safeguarding the integrity of NSF programs and operations.

Vision

We will use our diverse and talented staff and cutting edge technology to have a beneficial effect on NSF and the communities it supports. We will help prevent problems, address existing issues in a timely and proportionate manner, and keep abreast of emerging challenges and opportunities.

Values

PROFESSIONALISM

To follow accepted technical and ethical standards of our disciplines; do our work fairly and thoroughly; represent our results accurately, objectively, and with a sense of proportion; and complete our work within a reasonable time so that it is available for relevant decisions.

ACCOUNTABILITY

To take responsibility for the quality of the work we do and treat similar matters consistently.

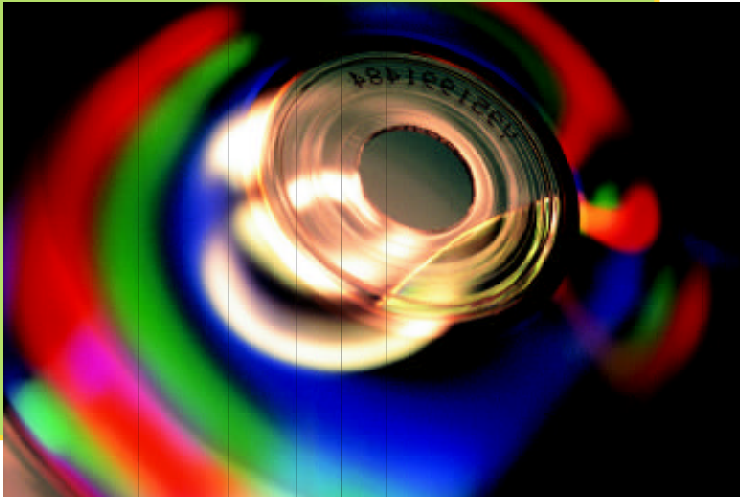
FLEXIBILITY

To think creatively, adopt new ways of addressing issues tailored to unique circumstances, and build on successful processes to make them better.

TEAMWORK

To be respectful of others, seek common ground with them as we do our work, and be honest, trustworthy, and straightforward. To be cooperative without compromising our independence.

Established August 2000



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About the IG



Christine C. Boesz, Dr.P.H.

The Inspector General heads the Office of the Inspector General, and reports directly to the National Science Board and the Congress. The OIG recommends policies to promote economy, efficiency, and effectiveness in administering NSF programs and operations. It also aims to prevent and detect fraud, waste, and abuse; improve the integrity of NSF programs and operations; and investigate cases involving misconduct in science.

Dr. Christine C. Boesz assumed her duties as Inspector General of the National Science Foundation on January 18, 2000. Prior to that, she served as Head, Regulatory Accountability, at Aetna U.S. Healthcare, a subsidiary of Aetna, Inc. In that position, Dr. Boesz was responsible for establishing and maintaining a compliance program for Medicare legislative and regulatory activities. She has also held several government compliance and oversight positions during an 18-year career with the Health Care Financing Administration, including Director, Operations and Oversight, Office of Managed Care.

Dr. Boesz received her Doctorate in Public Health from the University of Michigan School of Public Health (1997). Her M.S. in Statistics was awarded by Rutgers University (1967) and she received her B.A. in Mathematics from Douglass College (1966).

REPORTING REQUIREMENTS

Under the Inspector General Act, we report to the Congress every 6 months about what we have been doing. In particular, we must discuss:

3, 37

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

23, 48

Matters referred to prosecutors, and the resulting prosecutions and convictions

46, 48

With regard to previously reported recommendations: significant management decisions that were revised, and significant recommendations for which NSF has not completed its response

None to Report This Period

Legislation and regulations that may affect the efficiency or integrity of NSF's programs

None to Report This Period

Whether we disagree with any significant decision by NSF management

None to Report This Period

Any matter in which the agency unreasonably refused to provide us with information or assistance

Office of Audits

We are responsible for auditing grants, contracts, and cooperative agreements funded by the Foundation's programs. We review agency operations and ensure that financial, administrative, and programmatic aspects of agency operations are conducted economically and efficiently. We conduct financial audits to determine whether costs claimed by awardees are allowable, reasonable, and properly allocated. Our audits also seek to identify practices that can reasonably be modified in the future, thereby allowing funds to be used for other purposes that our customers consider more important. We also conduct performance audits that identify problems so Foundation managers can improve operations. We are also responsible for the annual audit of the Foundation's financial statements, which includes evaluations of internal controls and data processing systems.

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ISSUES INVOLVING ADMINISTRATION and MANAGEMENT

As part of our duties under the Inspector General Act of 1978, as amended, we perform reviews of selected NSF programs and operations to provide management with an independent assessment of whether desired results and objectives are achieved efficiently, effectively, and in accordance with prescribed laws, regulations, policies, and procedures. In some cases, as with our credit card audit discussed below, we directly review an internal function of NSF and make recommendations to improve it. In other cases, issues identified through our external audits of awardee institutions suggest improvements that can be made to internal NSF policies or management functions.

Controls Over Credit Card use Need Strengthening

The use of credit cards for government procurement, which first began in 1989, has grown significantly. Government-wide credit card purchases increased from \$1 billion in 1994 to an estimated \$18 billion in FY 2000. At NSF, the IMPAC¹ Purchase Card Program is administered by the Division of Administrative Services (DAS), whose goal is to expand the use of the program to cover all “micro-purchases” (i.e., purchases under \$2,500). NSF has issued approximately 145 credit cards to staff at various levels and in 1999 alone employees generated over 7,500 transactions totaling over \$2.4 million.

Concerned about the effectiveness of internal controls over small purchases, the Assistant Director of the Directorate for Biological Sciences (BIO) asked us to perform an audit of its credit card use. Our objective was to determine if controls ensured accountability for credit card transactions and safeguarded NSF funds. We found that although most cardholders and approving officials took their responsibilities seriously, BIO needs to ensure that its credit card purchases are for valid and authorized purposes. Few cardholders document their purchases, and not all approving officials document their reviews to the degree necessary to comply with NSF’s *IMPAC Purchase Card Program Manual*. Without adequate documentation, it is difficult to determine whether proper procedures are being followed and purchases are being made for legitimate government needs. We also found several types of transactions prohibited by Federal regulations and NSF internal procedures, including two instances of apparent split purchases (i.e. an attempt to circumvent the \$2,500 limit by “splitting” the purchase between two transactions), unnecessary tax payments, and prohibited travel costs.

We made several recommendations to BIO in order to strengthen its documentation procedures and other controls over credit card use. Specifically, we recommended that cardholders maintain adequate documentation for their purchases, that approving officials thoroughly review the monthly credit card statements and supporting documentation, that cardholders keep their cards in a safe location, and that BIO consider a standard policy for requiring pre-approval for certain purchases. We also recommended that BIO and DAS coordinate a periodic, internal review of approving officials and cardholders to test for compliance with regulations and procedures, and that DAS reinstate annual training for all participants in the IMPAC Purchase Card Program to increase awareness among cardholders and approving officials of their duties and responsibilities. BIO and DAS agreed with our recommendations and have already begun to address these problems by developing a set of new procedures to supplement those already in place.

¹International Merchant Purchase Authorization Card

Ownership Dispute Over On-line Database of Federal Research and Development

The federal government spends more than \$75 billion annually to support research and development in government laboratories, colleges and universities, private firms, and other entities. In 1992, NSF supported the initial development of a research and development database to understand where and how much the government is spending in each area of science and technology. NSF funded this project, through a contract with a nonprofit research organization, to support the work of the federally funded research and development center serving the White House Office of Science and Technology Policy (OSTP). As we reported in our March 1997 Semiannual Report (pages 20-21), there is a dispute over the ownership and the cost to develop the database, with the contractor claiming that it developed the database with its own and not federal funding. Our 1997 audit, however, revealed that the contractor had been charging costs for the database to its contract with NSF.

Currently, NSF is negotiating with the contractor for ownership rights to the database. The contractor claims that it has invested funds in the database project above the amounts that were reimbursed by NSF under the contract and collected as subscriber revenue from other federal agencies, as authorized under the NSF contract. The contractor proposed to relinquish its interest in the database by rebilling its excess costs to NSF. At the request of NSF management, we performed a limited review of contractor-provided financial statements to verify income from database subscriptions, NSF funding, database costs, and amortization of capitalized development costs incurred in the development, operations, and maintenance of the database.

Our audit identified \$59,000 of unreported income and fees from the Department of Energy (DOE) to organize, catalog, and deliver program funding data, and \$635,918 of capitalized development costs that the contractor had improperly reported in its financial statements as operations and maintenance costs. In response to these findings, the contractor agreed that the \$59,000 from the DOE should have been included as income, but disputed the auditors' characterization of development costs because it believes that software engineers and accountants use different definitions of the term "development." NSF management is currently reviewing our recommendations and the contractor's response in an effort to resolve the ownership and development cost questions.

Review of Ocean Drilling Program Financial Reports

The Ocean Drilling Program (ODP) entails an international exploration of the Earth's crust beneath the ocean to reveal the composition, structure, and history of the submerged portion of Earth's surface. ODP is jointly funded by NSF and seven international members representing over 20 countries, which together, through Memoranda of Understanding (MOU) provide for scientific and financial participation, contribute approximately \$48 million annually to support this program. In return for financial contributions, the international members participate with NSF in science planning and sea operations.

At NSF's request, we performed a review and verified that the amounts of contributions, receipts, and obligations were accurately reported in the ODP Financial Reports.

AUDITS of EDUCATION-RELATED AWARDS

NSF makes awards in all areas of science, mathematics, and engineering education. Many programs in the areas of education are funded through NSF's Directorate for Education and Human Resources (EHR). Many of the awardees in these programs include school districts, colleges and universities without strong research programs, and for-profit and non-profit organizations in the private sector. Such institutions may have little experience with standard federal accounting practices. Thus, our audits serve a developmental purpose as well as support NSF's oversight role. Other NSF directorates also support programs that integrate science, mathematics, and engineering research with education. We conducted ten financial and compliance audits of 22 education-related awards funded through several NSF directorates to public school districts, higher education institutions, and for-profit and non-profit organizations.

We found that improvements were needed primarily in the area of meeting and supporting required cost sharing. In particular, each of the six institutions reviewed that required cost sharing either did not meet or were unable to demonstrate that they had met this obligation. In addition, we questioned over \$2 million charged by the institutions to NSF awards. These questioned costs are primarily due to the institutions' lack of adequate systems and internal controls, which prohibit the institutions from determining whether costs are reasonable, allocable, and allowable.

Public School Systems

EHR developed an Urban Systemic Initiative (USI) program to assist targeted urban public schools to implement system-wide improvement in mathematics, science, and technology instruction for grades pre-K through 12. We found that two public school systems failed to meet their cost-sharing obligations, and claimed significant amounts of costs that we questioned because they were either unallowable or unsupported. We also found that in its resolution of a prior audit of a USI award to another public school district, a school district provided additional documentation to support some of the questioned costs and agreed to address other compliance and internal control deficiencies.

Southern School District

Claimed \$2.8 Million in Unsupported Costs and Cost Sharing

NSF decided to phase out a \$10.1 million cooperative agreement issued to a southern school district because the school district did not administer its USI award in accordance with NSF's programmatic goals. These programmatic concerns prompted our office to review the financial aspects of this award.

Under the cooperative agreement, the school district agreed to cost share \$4,012,542 during the award's 4-year duration. We questioned \$1,963,957 of the required cost sharing, because we could not determine whether the claimed costs were reasonable, allocable to the award, or allowable under NSF and federal regulations and because the school district did not have documentation to show that it had met NSF's cost-sharing requirement for the award.

Additionally, of the \$7.8 million in direct costs claimed by the school district, we questioned \$888,957 because the school district was unable to support \$815,799 of various types of costs, and claimed \$73,158 of unreasonable, unallocable, or unallowable costs.

We also identified significant weaknesses in the school district's controls for managing this NSF award. The school district did not retain financial records and supporting documents, report award expenditures accurately to NSF in its quarterly financial reports, or maintain records that adequately identified how the award funds were actually spent. In addition, the school district did not always perform cost analysis or maintain files for procurements as required by federal rules. We also found that the school system needed to strengthen its internal controls by reconciling bank statements in a timely manner.

The school district did not formally respond to our findings and recommendations, and we have forwarded this matter to NSF's Division of Contracts, Policy and Oversight for resolution of the audit findings.

Midwestern Board of Education had Cost Sharing of \$10.1 Million at Risk and Questioned Costs

We performed an audit of a USI award to a midwestern public school district's board of education (the board). NSF provided the board \$7.5 million under a cooperative agreement that included negotiated cost sharing of \$10.1 million. We identified all of the \$10.1 million in claimed cost sharing as "at risk" because the board did not adequately account for or document the costs. Specifically, we were unable to identify cost sharing specific to the USI award, and therefore were not assured that cost-sharing expenditures would not be claimed for more than one federal award.

Because of the serious nature of these deficiencies, we recommended that NSF management require the board to immediately implement procedures addressing the cost sharing on the USI award. In July 2000, NSF management notified the board that it would not make the fifth year's award increment of \$3.2 million available to the board until it has shown NSF that it has an adequate system for tracking and accounting for its cost sharing.

We also questioned \$969,738 of direct costs claimed by the board related primarily to salaries and fringe benefits. We were unable to verify salary costs because the board charged these costs based on budgeted rather than actual employee effort and did not support salary costs with after-the-fact time and attendance records or certifications. Also, the board did not have documentation to support how fringe benefits were allocated to the award. We recommended that the board implement procedures to ensure time and attendance records are maintained and used as the basis for claiming salary costs under the award, and modify its accounting records and financial report to NSF to reflect an adjustment for the questioned fringe benefits.

The board responded that it does not agree that personnel salaries are unsupported, but rather believes that its current procedures for certifying biweekly payroll are sufficient. The board is in the process of reviewing a cost-allocation system to provide a hard audit trail for cost sharing that can track and allocate costs to specific activities. NSF management is currently resolving the issues raised in the audit.

NSF OIG Award Winners



Awards presented by the Executive Council on Integrity and Efficiency in September. Shown from left to right, Helen Norris recipient of the ECIE Award for Excellence, Management and Administration; Dr. Christine Boesz, NSF Inspector General; and Ulysses Goodwin, Jr. recipient of the ECIE Award for Excellence, Audit.



Awards presented by the NSF Director in June. Shown from left to right, Maya Goodwin honored for Support Staff Excellence, Sandy Van Booven recipient of the Superior Accomplishment Award, and Bruce Carpel recipient of the Meritorious Service Award.



Awards presented by the NSF Director in June. Shown from left to right, Dawn Parker and Kristen Stagliano recipients of the Award for Excellence in Program Management, and Belinda Robinson recipient of the Award for Excellence in Administration.

Audit-Related Reporting Terms

Much of the terminology that we use in describing issues that we discover in our audits and reviews is complex. The following are some of the more common terms and definitions that we use.

Questioned Cost. Auditors question costs because of an alleged violation of a provision of a law, regulation, grant, cooperative agreement, or contract. In addition, a questioned cost may be a finding in which, at the time of the audit, a cost is not supported by adequate documentation; or a finding that the expenditure of funds for the intended purpose is unnecessary or unreasonable. It is important to note that NSF is responsible for making a *management decision* regarding questioned costs that includes an evaluation of the findings and recommendation included in an audit report. It is the management decision that may transform a questioned cost(s) into a *disallowed cost(s)*.

Funds Put to Better Use. Many times audit recommendations identify ways to improve the efficiency of programs that can lead to tangible cost savings over the life of an award. These are not questioned costs, but rather methods of making the most efficient use of federal dollars, such as reducing outlays, deobligating funds, or avoiding unnecessary expenditures.

Compliance or Internal Control Issues. Audits often result in recommendations to improve the auditee's compliance with NSF and federal regulations; or to strengthen the auditee's internal control structure to safeguard federal funds from fraud, waste, abuse and mismanagement.

Photos by Roy Jones and Belinda Robinson

Northeastern School District Must Adjust Future Claimed Costs

In our [March 2000 Semiannual Report \(pages 5 and 6\)](#), we reported the results of an audit of a Pennsylvania school district that received a USI award to improve the scientific and mathematical literacy of students. We reported that \$403,410 of \$9.9 million in claimed costs were questioned, because they were either unallowable or unsupported. We also identified material internal control weaknesses in the school district's accounting and reporting of cost sharing. In addition, the school district lacked the financial management capability to compare budgeted costs with actual costs to ensure its cash balances were not in excess of its cash needs and failed to maintain an adequate system of record retention and retrieval for NSF awards.

NSF sustained \$133,083 of the questioned subcontract and indirect costs. In addition, the school district agreed to undertake immediate steps to improve its accounting for cost sharing and address the other compliance and internal control deficiencies identified in our audit.

Institutions of Higher Learning

Cost Sharing Overstated at a Western University Foundation

A western university foundation administered three NSF awards related to the Federal Technology Reinvestment Project, a federal initiative to assist in the development of dual-use technologies that meet both defense and civilian needs, and to provide technological assistance to small firms, including defense companies converting from military to commercial manufacturing. NSF provided the foundation a total of \$6.2 million through the three awards and required \$6 million in cost sharing.

The foundation claimed a total of \$38 million in cost sharing—more than six times the required amount. We found, however, that the foundation could support only \$8 million of the \$38 million (or 21 percent) claimed as cost sharing. The primary reason the foundation could not support the \$30 million of the claimed cost sharing was because the awardee valued donated software using commercial prices rather than using discounted educational prices. Federal guidelines require that institutions value cost sharing in accordance with the federal cost principles, which require that institutions receiving education discounts use these discounts to reduce the amounts charged to awards. In addition, the foundation was unable to provide documentation for in-kind contributions and expenditures, and claimed unallowable cost sharing.

As a result of our review, we determined that the foundation provided acceptable cost sharing to meet the requirement on two of the awards, but did not provide sufficient cost sharing for the third award. We therefore recommended that NSF management require the foundation to reimburse the \$271,440 cost-sharing shortfall on the third award and improve its overall control processes for valuing, supporting, and meeting its cost-sharing obligations.

Our audit also found that the foundation had not developed ten multimedia-based training modules, a project for which it had received \$200,000 through one of the awards. Although foundation officials stated that modules had been incorporated into university courses and were available on the Internet, we

were unable to access them. We recommended that NSF management require the foundation to demonstrate that it had developed the modules and make them available to the intended industrial and academic communities, or return the \$200,000 awarded for the modules' development.

The foundation replied that it disagreed with our interpretation of the federal cost principles regarding the use of educational discounts in valuing donated software. It also believes that it can provide the necessary supporting documentation for the cost-sharing shortfall on the third award. However, the foundation agreed to improve staff training to ensure future compliance with applicable regulations related to cost sharing. In addition, the foundation did not concur with our audit finding regarding the training modules, and stated that it had received only part of the requested funds from NSF, and that in fact, the modules had been developed. These issues will be addressed by NSF management during audit resolution.

University is at Risk of not Complying With NSF's Cost-Sharing Requirements

We audited a \$9.3 million cooperative agreement issued to a university in Puerto Rico that serves over 5,700 commuter students. The university is one of six institutions that NSF funded under its Model Institutions of Excellence program, which is a 10-year comprehensive institutional development program to assist higher education institutions in substantially increasing the number of quality, minority baccalaureate degree graduates in the fields of science, engineering, and mathematics. While the university generally was able to support the \$8.2 million in claimed costs for the first 4 years of the award, we determined that the university was at risk of not meeting \$248,524, or 19 percent, of its \$1.3 million required cost sharing. This occurred for two reasons. First, the university mistakenly believed that it was only required to cost share \$232,000 instead of \$464,000 in the award's third year. Second, the university claimed \$112,516 of unallowable cost sharing, which included the construction of faculty offices and lounges, recruitment-related promotions, passenger van lease and related fuel expenses, and meal charges.

We also found other weaknesses in the university's controls for ensuring compliance with NSF and federal regulations. The university claimed over \$600,000 of award expenditures in cost categories that did not accurately reflect the type or purpose of the expenditure, thereby making it difficult to compare budgeted with actual expenditures and ensure funds were spent for their intended purpose. In addition, the university failed to maintain documentation to support the differences between expenditures reported to NSF and expenditures recorded in the university's accounting records. We also noted that the university's conflict of interests policy did not fully comply with NSF's conflict of interest policies, and that written procurement policies and subcontract agreements were not in compliance with Federal provisions.

The university agreed with most of our findings and recommendations, except for selected issues related to cost sharing. We have forwarded this matter to NSF's Division of Contracts, Policy, and Oversight for resolution.

Southwest State Engineering Agency has Questioned Costs and can Improve on its Accounting Controls

We conducted an audit of four NSF awards issued to a southwestern state engineering agency. The purpose of the awards was to assist the agency in increasing the number of minorities receiving Bachelor of Science degrees in mathematics, engineering, science and technology, to improve engineering education, and to develop a curriculum in biomedical optics. We questioned \$86,854 of \$20.8 million in costs claimed by the agency. The questioned costs were primarily related to the agency's failure to meet its cost-sharing obligation

Continued on page 12

Cost Sharing - A Continuing Risk

In accordance with Congressional requirements, NSF management requires that each grantee share in the cost of NSF research projects resulting from unsolicited proposals. In addition to this statutory requirement, NSF management can require cost sharing when it believes there is tangible benefit to the award recipient, such as infrastructure development or the potential for income or profit. Cost sharing, sometimes called matching or institutional support, is defined in federal regulations as "all contributions, including cash and third party in-kind," which meet seven criteria: verifiable, not included as contributions for any other federally-assisted project or program, necessary and reasonable for accomplishment of objectives, allowable, not paid by the federal government under another award (except where authorized by statute), provided for in the approved budget when required by the federal awarding agency, and in conformance with other federal regulations.

When cost sharing is provided in the approved award budget it becomes a condition of the award, and we audit these costs just as we do NSF-funded costs. If the award period has ended and we find that the awardee has not met its cost sharing requirement, we will indicate a questioned cost-sharing shortfall. We question costs when awardees do not meet their cost-sharing requirements, because the award was made on the premise that the cost sharing was necessary to meet the award objectives. If promised cost sharing is not realized, then either the awardee has not met its programmatic objectives, or the project actually costs less than it was originally estimated. In either case, NSF should have at least a portion of its funds returned to it.

Sometimes we audit awards where the award period has not yet ended. In these situations if an awardee has not met its cost-sharing obligation, but still has time within which to do so, we will identify the amount of cost sharing we believe to be "at risk." At the end of an award period, the cost sharing that remains at risk will become a questioned cost-sharing shortfall. The purpose of identifying cost sharing at-risk is to alert NSF management to a situation where an awardee may not be meeting its program objectives. This gives NSF an opportunity to monitor the situation and take appropriate action.

We have been finding significant problems with awardees' ability to meet their cost-sharing requirements. In this reporting period, we found several awardees that have significant problems in this regard. One awardee is at risk of not meeting its entire \$10.1 million requirement. Another awardee overstated its cost sharing received by \$30 million. These and other cost-sharing findings are discussed in more detail in our summaries of individual audits. Because of the programmatic impact when cost sharing is not met and the problems we have identified, we are continuing to focus our efforts in this area and are currently conducting a broad review of cost sharing at numerous institutions. We hope that our efforts will provide NSF management with the information and tools necessary to better administer this important facet of its awards.

Southwest State...
Continued from page 11

on one award, provide adequate supporting documentation for participant support, subcontract, and consultant costs, and correctly charge the awards for indirect costs. In addition, we made recommendations to improve the agency's accounting controls over monitoring and tracking participant support and subcontract costs and compliance with filing final project reports to NSF in a timely manner.

The agency agreed to improve its systems for monitoring subcontractors' costs and filing final project reports. However, the agency disagreed with the questioned costs and our recommendation for improved controls over monitoring participant support costs. We have referred these issues to NSF's Division of Contracts, Policy, and Oversight for resolution.

Non-Profit Organizations

Southwestern Non-Profit Education Center

Needs to Improve Grants Management Controls

We audited an NSF award issued to a southwestern non-profit education center that employs advanced technology to serve Native Americans in the areas of education, economic development, language and cultural preservation, tribal policy issues, and self-determination. The purpose of the award was to provide infrastructure technology and related training to Native Americans.

We found material deficiencies in the center's internal control structure for ensuring compliance with NSF and federal regulations. The center did not have a verifiable system for allocating costs for space and salaries to the appropriate cost objectives, or the overhead cost pool making it difficult to determine their reasonableness. Also, three of the Federal Cash Transaction Reports filed by the center differed significantly from their general ledgers. Such internal control problems are serious because they place all federal funds at risk of not being accounted for properly and increase the likelihood that funds will be spent for unnecessary or unallowable activities.

We also questioned \$82,802 of the \$1,295,054 in claimed costs because the center:

- (1) lacked documentation to support claimed costs;
- (2) used participant support funds for other expenses without NSF's authorization; and
- (3) failed to deposit award funds in an interest-bearing account, as required by federal regulations, resulting in lost income to the government.

The center did not respond to most of our concerns related to improvements needed to its systems and disagreed with the majority of the questioned costs. NSF's Division of Contracts, Policy, and Oversight will resolve the findings.

Western Educational Research and Development Agency has Questioned Costs

We audited three NSF awards issued to a western educational research and development agency to support studies and programs designed to help teachers effectively provide science education to students. Out of \$4.2 million in claimed costs, we questioned \$445,742 charged to one award. This included \$301,259 for participant support, materials and supplies, and other costs that we considered unreasonable, not allocable to the award, or not necessary to meet the award's objectives. It also included \$144,483 of indirect costs that were improperly charged because the awardee used different indirect cost rates for each of the fiscal years involved and included participant support costs in the indirect rate base.

As a result of the excessive dollar amount of unallowable and unallocable costs, we recommended that the agency implement procedures to screen costs for reasonableness, allowability, and allocability. To ensure adherence to NSF policies, we also recommended that the agency require its principal investigators file annual financial disclosure statements, notify NSF of changes in project scope, and obtain competitive price quotations for purchases over \$25,000.

The agency disagreed with most of the findings. NSF's Division of Contracts, Policy, and Oversight will resolve all questioned costs and contested findings.

Northwestern Foundation has Questioned Costs and can Strengthen its Policies and Procedures

We conducted an audit of incurred costs and cost sharing associated with three awards made to a northwestern non-profit educational foundation established to promote science education. We are questioning \$141,708 of \$2,661,096 in claimed costs primarily because the foundation spent funds budgeted for participant support on other activities without the specific prior approval of the NSF program official, as required by NSF regulations. We also questioned costs because the foundation could not provide supporting documentation for claimed costs related to participant support, salaries and related fringe benefits, travel, materials and supplies, subcontracts, and other direct costs. In addition to the questioned costs, we noted a \$40,970 shortfall in cost sharing for one of the awards because the foundation did not fully meet its required cost sharing by the end of the 5-year award.

We recommended that the foundation improve its controls for administering its grants, including maintaining documentation to support its claimed costs, establishing procedures to reconcile accounting records to financial reports submitted to NSF, and ensuring appropriate approvals of employee time and effort reports, and travel requests. The foundation agreed with most of our findings. NSF management is resolving the contested findings.

Midwestern Education Center has Clean Audit Results

We conducted an audit of three NSF awards issued to a midwestern non-profit education center that encourages the investigation and dissemination of knowledge in the sciences, arts, and humanities. These awards included support for providing leadership development and hands-on research activities for K-12 teachers in a midwestern state. Of the \$7.1 million claimed costs by the education center for the three awards, we did not identify any questioned costs. In addition, the results of our testing disclosed no issues related to noncompliance with NSF and federal regulations, and no weaknesses in the center's internal control structure.

For-Profit Entity

Northeastern Company Counts NSF Funds as Cost Sharing

We conducted an audit of a northeastern commercial company that received two NSF awards totaling \$7.1 million to create a new mathematics curriculum for elementary schools and to develop materials related to mathematics teaching methods.

We questioned \$71,595 of \$5.2 million in costs claimed by the company. The majority of the questioned costs were either not allowable, allocable, or reasonable under federal regulations or represented expenditures that were based on estimated amounts rather than on actual costs. Additionally, of the \$541,663 claimed by the company for its cost-sharing efforts, we questioned \$49,500 because the funds were actually NSF funds. No NSF funds can be used to meet an awardee's cost-sharing obligation.

To strengthen the internal control structure, we recommended that the company implement procedures to ensure that funds received and disbursed are properly recorded in the accounting records and reported to NSF in financial reports. We also recommended that the company implement procedures to ensure that cash contributions, designated as cost sharing for the award, actually be used for project costs.

The company is contesting most of the findings. We forwarded our audit report to NSF's Division of Contracts, Policy, and Oversight for resolution.

POLAR PROGRAM REVIEWS



NSF plays a leadership role among federal agencies involved in supporting research and logistics in the Arctic, and is the lead agency for managing the entire U.S. national program in the Antarctic through its Office of Polar Programs (OPP). Charged with managing all U.S. activities in the Antarctic as a single program, OPP not only funds research, but also is responsible for operating the infrastructure and logistics necessary to conduct scientific experiments in the harsh polar environment. In this role, it faces a number of unique challenges such as transporting and housing scientists and support staff, assuring their safety and health, protecting the polar environment, ensuring U.S. compliance with the international Antarctic Treaty, and promoting the national interest in maintaining an active and influential presence in Antarctica. OPP also faces some of the same challenges in the Arctic, and received \$245 million in FY 1999 for research and logistical support for the two areas.

While OPP operates like other NSF directorates in making awards for polar research, its responsibilities do not end there. In providing science, operations, and logistics support to the research it funds, it is significantly different from other NSF units. OPP staff must not only know the science, but must also be able to manage contractors engaged in delivering a broad range of services to the scientific community located in a difficult and dangerous environment. Our audit work has focused extensively on reviewing these activities because of their many inherent risks. From our perspective, NSF's polar programs involve not only a large expenditure of money, but also the safety of scientists and workers, environmental concerns, and the prestige of the U.S. government. Accordingly, accomplishment of the United States Antarctic Program (USAP) requires significant management and administrative skills to ensure successful operation.

Since 1997, we have conducted reviews related to commercial contractors and the Air National Guard, of functions previously performed by the U.S. Navy for the USAP. OPP asked OIG to review estimates of cost savings that would accrue from this transition. These reviews validated savings of more than \$6.6 million per year that would result from the transition. OPP also accepted our recommendations that would allow NSF to reap additional savings exceeding \$4.6 million per year. Follow-up reviews, completed during the current and previous semiannual periods, identified \$750,000 in duplicate or erroneous charges that OPP is currently working to recover from the Air National Guard for LC-130 air carrier services. Some of these costs are described more fully in the following article, "Review of Funds for USAP Personnel."

In addition, in both the Antarctic and the Arctic, NSF has recently awarded new contracts for research support and logistics that require the agency's careful attention. The USAP contract is NSF's largest and was recently awarded to a new organization. The Arctic contract is the first awarded under OPP's recently established Arctic Research Support and Logistics component. For FY 2001, OPP has requested \$209.30 million for research support and logistical support activities (\$184.38 for Antarctic and \$24.92 for Arctic). We plan to monitor the continuing transition of support activities to the new contractors.

Also, as part of our annual audit effort, we are developing a plan to assess the challenging aspects of providing research and research support in Antarctica and the Arctic.

Aviation Technical Services

The final phase of the U.S. Navy transition involved the transfer of air traffic control, meteorology and ground electronics maintenance to the Aviation Technical Services branch of the Space and Naval Warfare Systems Center (SPAWAR), Charleston, S.C. During the current reporting period, we completed a survey of this transfer.

According to SPAWAR's calculations, compiled with the U.S. Navy's assistance and cooperation, the transition was expected to result in approximately \$700,000 to \$800,000 in savings annually to NSF. In comparing SPAWAR's actual first-year costs with its current costs, we found they had increased by just under \$1 million during the 3-year period. The increase was due mainly to the addition of personnel and services. Therefore, while the anticipated savings from the transition were not realized, we reviewed the additional costs and advised OPP that they were reasonable.

We noted, however, that SPAWAR appeared to have overestimated the number of weeks that part-time personnel would be required to perform under contract. By comparing the number of weeks budgeted with the number of weeks necessary for operations, medical clearance, orientation, and training, we found that SPAWAR may have over budgeted by 8.5 weeks per person. We therefore suggested that OPP could reduce costs by approximately \$233,240 per year if the number of weeks were reduced. OPP and SPAWAR are jointly reviewing our suggestion.

Review of Funds for USAP Personnel

The 109th Airlift Wing of the New York Air National Guard provides LC-130 flight support to the USAP. In addition to its existing personnel, the 109th was authorized to hire 220 full-time officer and enlisted personnel to support the USAP. Commonly referred to as "USAP Hires," the salaries for personnel hired in these positions are reimbursed by OPP. OPP is not expected to make payments for vacant positions.

Based on a review of time reporting and personnel records for a two and one-half year period, our review revealed that OPP had been charged approximately \$110,000 in erroneous and inappropriate personnel costs. Specifically, the Air National Guard improperly charged for personnel who did not perform work for the USAP, for amounts higher than agreed to by OPP, and for days not actually worked. These overcharges were caused by inadequate review of the monthly charges by the Air National Guard and its headquarters, the Air National Guard Readiness Center, Financial Management, before they were submitted to OPP for reimbursement.

We recommended that OPP obtain a credit for these overcharges. We also made several recommendations to improve the procedures for preparing and obtaining a secondary review of invoices to OPP. In its response to a draft copy of our report, OPP indicated that it agreed with recommendations to recover \$91,600 from the Air National Guard, but needed to have further discussions with the Air National Guard regarding the remaining charges in question.

South Pole Projects

As reported in previous semiannual reports, we attend quarterly reviews of OPP's South Pole Safety and Environmental and Station Modernization projects. The most recent quarterly review reported that construction crews are working on the final phase of the South Pole Safety and Environmental project to complete the interior of the new power plant. OPP expects to accept this work in January 2001, which would see this \$25 million, 5-year effort successfully completed on time and within budget.

OPP is also reporting that the South Pole Station Modernization project is on time and within budget. On-site work on this project begins in earnest this operating season (November 2000 to February 2001) with the erection of steel for the elevated station. A critical factor affecting the project schedule and budget will be the limited availability of LC-130 flight hours, which have been curtailed by a military-wide shortage of pilots. OPP is addressing this issue in several ways. Beginning in FY 2001, OPP plans to shift some work from the LC-130s to other airframes. Also, OPP and Raytheon Polar Services Corporation, the support contractor for the project, continue to refine requirements and develop contingency plans in the event that airlift demand outweighs supply. Finally, as a by-product of a panel of USAP participants and polar operations experts convened by OPP to identify feasible, efficient, and cost-effective ways to increase future LC-130 flight hours for science, OPP will begin to conduct studies to determine the feasibility of the identified alternative proposals this season.

ISSUES INVOLVING RESEARCH PROJECT SUPPORT

Earthquake Engineering Research Centers Need Improved Record Keeping

In the wake of the Loma Prieta and Northridge earthquakes, NSF established, in 1997, three Earthquake Engineering Research Centers to conduct and coordinate earthquake engineering research. NSF administers the program under 5-year cooperative agreements with three universities, which collaborate on research and education with other universities, businesses, and the government. The total commitment for this program from both NSF and the three universities, which will share the costs, is expected to be at least \$60 million.

During this reporting period, we reviewed the financial and administrative systems at two earthquake centers to identify areas that can be strengthened during this early stage of operations. At both centers we identified issues with the annual reporting to NSF required under the cooperative agreements.

The annual reports omitted some data and contained errors. In addition, we found that the annual reports did not reflect unspent obligations, although the amount of unspent obligated and unobligated funds being carried forward has reached up to 90 percent of annual funding. NSF uses annual reports to review centers' progress in meeting its research objectives and to help decide the level of future funding support. Therefore, inaccurate and incomplete reports impede NSF's ability to decide the appropriate support for them. We recommended that the centers work with their respective university administrators to improve the reliability and completeness of the data reported and disclose or otherwise indicate in their annual reports the amount of unspent obligations exceeding 25 percent of the award amount. Both centers concurred with our recommendations. NSF has modified one of the awards to address the unspent obligations and is continuing to identify ways to improve reporting by the centers.

Additionally, at one of the centers, we questioned \$65,351 paid to consultants because the hourly consultant fees exceeded the maximum Federal reimbursement allowed. The center is contesting this finding, and the issue will be resolved by NSF's Division of Contracts, Policy, and Oversight.

Southern University Needs to Improve Award Monitoring

In 1978, the Congress authorized NSF to establish the Experimental Program to Stimulate Competitive Research (EPSCoR) for states traditionally receiving a low percentage of federal research funding. EPSCoR's goal is to develop and utilize a state's academic science and technology resources in a way that will support wealth creation and a more productive and fulfilling way of life for a state's citizenry. EPSCoR makes large awards to support research infrastructure at states' research-oriented university campuses and encourages long-term partnerships among state leaders in government, business, and higher education.

During this reporting period, we audited an EPSCoR award to a southern university for research in three areas: smart materials, biomaterials, and reclamation of solid waste. Of \$4,367,275 in claimed costs, we questioned only \$34,015, less than one percent, for unallowable travel and sub-awardee costs. In addition, we questioned whether the purchase of a computer was necessary to meet the purposes of the award. We also found that the university needs to improve its monitoring over cost sharing, costs claimed by sub-awardees, and costs used to support individuals who participated in program activities.

In general, the university agreed with the questioned costs and, as a result of the audit, has taken steps to improve sub-awardee monitoring. However, the university disagreed with our findings on monitoring participant support costs and the use of the computer purchased with award funds. We have forwarded these matters to NSF's Division of Contracts, Policy, and Oversight for resolution.

Western and North Central Research Centers Administer Awards According to Requirements

We are pleased to report that two research centers audited during this period were largely in compliance with federal and NSF regulations and generally had good systems of internal controls for accounting for its grant funds.

We audited a \$2.6 million award to a western non-profit research organization supporting research in the behavioral sciences and did not question any of the center's costs. We also largely accepted its calculation of administrative costs for the 3 years ended August 31, 1999, although we recommended a few adjustments to ensure compliance with federal cost principles.

We audited four awards NSF made to a midwestern non-profit research center collecting data and conducting survey research for government agencies and other private and non-profit organizations. We found that in general the center complied with award terms and had a good system of internal controls to account for the use of NSF funds. Of \$16.2 million in claimed costs, we found only \$4,997 that could not be supported by accounting records. We also noted a minor noncompliance with NSF procedures for which we recommended that NSF management remind program managers that written, not just verbal, approval is required for certain changes to approved award budgets.

RESOLUTION of PRIOR AUDITS

During this reporting period, seven reports with significant audit recommendations have been resolved. These resolutions, by reducing future or recovering past cash outflows, resulted in providing NSF with approximately \$800,000 for use in funding other award opportunities. In addition to the financial savings, the audit resolution process also resulted in some award recipients' agreements to improve their processes for managing their awards and increase the efficiency with which they utilize NSF funds.

NSF Used Review of Western Mathematical Sciences Institute to Adjust Final Award

In our [September 1999 Semiannual Report \(pages 7-8\)](#), we reported on our reviews of the proposed budgets for two mathematical sciences institutes submitted under NSF's Mathematical Science Research Program. One of the reviews concerned a western-based mathematical sciences institute proposing a budget of \$17.5 million for 5 years. As a result of our review, NSF management reduced the amount of the final award by \$100,000 because of unreasonable hospitality costs and included language in the new award agreement to specify these types of costs as unallowable. Further, in accordance with our recommendations, the institute negotiated a lease agreement with the university, which waives the institute's final payment of \$300,000 to the university. NSF management also included special conditions in the new award agreement, including a condition that no NSF funds would be used to cover exterior maintenance expenses of the leased building, as they are properly the responsibility of the university.

Our review also indicated that some of the indirect costs allocated to NSF under the proposed budget were attributable to non-NSF activities. In accordance with our recommendations, NSF management took steps to require the institute to develop an indirect-cost rate. The institute has agreed to submit an annual indirect-cost proposal for NSF's review and acceptance beginning December 1, 2000. Finally, the institute is in the process of implementing two other recommendations to develop a long-term plan to reduce its dependency on NSF funding, and written accounting policies and procedures.

Northwestern For-Profit Company Must Repay NSF and Adjust Claimed Costs

In our [September 1999 Semiannual Report \(page 10\)](#), we identified questioned costs of \$198,666 based on our review of a northwestern for-profit education company, which had received two awards totaling \$2.6 million to develop educational videodiscs on molecular and cell biology, and genetics, and to design science-education software for the fifth through the eighth grades. After reviewing the additional documentation provided by the company, NSF agreed that \$169,777 of costs were unallowable and not adequately supported. The company will repay \$51,964 to NSF and will adjust or offset its unbilled NSF award costs by \$117,813. NSF and the company satisfactorily resolved other compliance and internal control issues, particularly those related to its deficient cash management practices.

Review of Awardee A-133 Reports

Non-federal entities that expend \$300,000 or more in a year in federal awards are required, under the Single Audit Act of 1984, as amended, to have a single or program-specific audit conducted for that year.

OMB Circular A-133 constitutes the guidance prescribed under the Act and sets forth standards for obtaining consistency and uniformity among federal agencies for the audit of states, local governments, and non-profit organizations expending federal awards.

Reports prepared by independent auditors in accordance with this Circular are referred to as A-133 audits. The purpose of these audits is to provide federal agencies with a source of how well government funds are being managed and spent. NSF relies on the A-133 reports that it receives when making awards and for ensuring accountability of its funds.

Under Circular A-133, auditees are required to submit a data collection form along with their A-133 audit to the Federal Audit Clearinghouse. The Clearinghouse, in turn, sends the A-133 reports to the federal agency with oversight responsibility for the auditee. The Clearinghouse also sends the reports to all federal agencies, as indicated by the auditee on its data collection form, for which the audit has disclosed findings relating to awards that the federal awarding agency provided. This process of having audit reports go through the Clearinghouse is newly required for FY 1997 and subsequent audits. Consequently, there are some problems with the system. As reported by the Clearinghouse and seen in the audit reports received by NSF, these problems include misidentification by the auditees of their correct cognizant or oversight agency and misidentification by the auditees of federal agencies with findings. Our office continues to work with other Offices of Inspector General to address these problems.

Our office receives and reviews the A-133 reports submitted to us by the Clearinghouse and those that are continuing to be submitted directly from the auditees. During this reporting period, we reviewed 93 A-133 audit reports with NSF expenditures of \$564 million dollars for fiscal years 1997, 1998 and 1999. Eighty-six reports were sent to CPO for audit resolution this period with \$138,429 in questioned costs for eight institutions. The questioned costs were related to travel, equipment, salaries, and cost sharing. Internal control findings included weaknesses related to reporting, subrecipient monitoring, and cost sharing. The most common finding, cited at 21 different institutions, was related to awardees not maintaining a current inventory.

Northeastern Education Center to Reduce Future Claimed Costs by \$30,048

In our [March 2000 Semiannual Report \(page 6\)](#), we reported on the results of an audit of five awards to a northeastern non-profit company to develop visual technology for students. Of the \$8.4 million claimed costs, we questioned \$277,565 primarily because the center did not meet its cost-sharing requirement. During audit resolution, NSF forgave the cost-sharing shortfall because of a significant modification in the project that obviated the need for the original cost-sharing amount. However, the company did agree to reduce its request for future reimbursement by \$30,048 in order to compensate for questioned costs attributable to fringe benefits and food, and to refund \$6,861 in interest income to the government.

Southeastern Institute Owes \$42,780 of Excess Administrative Costs

During this reporting period, NSF resolved an A-133 audit of a southeastern statistical institute with \$42,780 in questioned costs, all of which NSF sustained. In following up on other recommendations that arose from our prior audit of this institute, as reported in the September 1999 Semiannual Report (page 8), NSF directed the institute to take corrective action regarding five internal control and compliance problems. The institute had previously agreed to take such corrective action, and NSF's continual oversight helps ensure full implementation of the corrective action.

Summary of Other Audit Resolutions

In addition to the resolutions described above, NSF management resolved, during this reporting period, three separate audits of organizations that received NSF funding. For one of the audits, NSF sustained questioned costs totaling \$27,589. For the second audit, which had questioned costs of \$4,929, the awardee was able to provide support for \$1,817 of the amount questioned but agreed to adjust future billing for the remaining \$3,112. In resolving the third audit, NSF sustained \$133,083 in questioned costs.²

²This resolution is described in more detail on page 9, "A Northeastern School District Must Adjust Future Claimed Costs."

Office of Investigations

The Office of Investigations is responsible for investigating and assessing allegations of wrongdoing and coordinating OIG's outreach efforts. We investigate allegations of wrongdoing involving organizations or individuals that receive funds from, conduct business with, or work for NSF. After investigating these allegations, we assess their seriousness and recommend appropriate action. When necessary, we work in partnership with agencies and awardee staff to resolve these issues. When appropriate, the results of these investigations are referred to the Department of Justice or other prosecutorial authorities for criminal prosecution or civil litigation, or to NSF management for administrative resolution.

Our administrative investigations include addressing allegations of research misconduct i.e., falsification, fabrication, and plagiarism. Such misconduct strikes at the core of NSF's mission and is a special concern for our office. Our criminal and civil investigations focus on allegations of improper diversion of NSF funds and material false statements submitted to the Foundation. We encourage anyone to notify our office of any significant problems relating to the misuse of NSF funds, because it significantly aids our investigative efforts and the possible recovery of federal funds. We can be contacted anonymously via our 1-800-428-2189 hotline number or emailed at oiig@nsf.gov.

Our outreach efforts are essential to building partnerships with the Foundation, other federal agencies, NSF awardees, and research communities. These partnerships assist us in promoting education on ethical issues and in resolving investigation and audit matters more effectively.

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ECIE/PCIE MISCONDUCT in RESEARCH WORKING GROUP

In our **September 1999 Semiannual Report (page 16)**, we discussed the publication of the Office of Science and Technology Policy's (OSTP) Proposed Federal Policy on Research Misconduct in the Federal Register. We, along with NSF management, actively assisted in the development of OSTP's policy and procedures, and currently participate in the OSTP Implementation Group and a networking group of research misconduct officials from federal agencies. Both groups meet periodically to discuss implementation strategies. In anticipation of OSTP's final policy publication, the Executive Council on Integrity and Efficiency (ECIE) and the President's Council on Integrity and Efficiency (PCIE) of federal Inspectors General formed a working group to consider their role in conducting or providing oversight of research misconduct investigations. ECIE and PCIE formed the Misconduct in Research Working Group (MIR Working Group). The MIR Working Group is chaired by NSF's Inspector General and among its membership are representatives of Inspectors General from 22 federal agencies that fund research in all fields of science and engineering including research in economics, education, humanities, linguistics, medicine, and psychology. This group is charged with educating the IG community on research misconduct issues and developing a white paper describing investigative models including the scope and standards for such investigations.

During this reporting period, the MIR Working Group met three times. Members discussed and compared selected agency and IG approaches to resolving allegations of research misconduct, heard from the Office of Government Ethics on preventative models, and began drafting quality standards for misconduct investigations. Two group members are also members of OSTP's Implementation Group and briefed that Group on the function of the MIR Working Group. We have facilitated agency and IG contacts through the exchange of membership lists. The interactions between the MIR and Implementation Groups will assist in the development of policies that will serve the needs of both communities to ensure that investigations are conducted rigorously, fairly, and with consideration of all relevant policies.

MISCONDUCT INVESTIGATIONS FORWARDED to the DEPUTY DIRECTOR

Intellectual Theft in Five Federal Proposals

We received an allegation that an engineer employed by a small business in California plagiarized material from a published paper into his NSF Small Business Innovation Research (SBIR) proposal. The engineer's proposal used the central research idea, some text, and a figure from this paper, but did not attribute or distinguish the copied material from material original to his proposal.

The engineer characterized his omissions as a careless mistake. We obtained four additional proposals in which the engineer again failed to attribute the same idea, text, and figure. In all, the subject submitted five proposals to four federal agencies, including a second proposal to NSF, which made unattributed use of the material. In more than one instance, the subject designated these concepts in his proposal as proprietary to his company.

The president of the small business and an NSF program officer told us that the engineer's lack of attribution was a significant and serious problem. We concluded, based on a preponderance of the evidence, that the subject knowingly committed intellectual theft and plagiarism in connection with two NSF proposals and that overall he exhibited a pattern of such behavior.

We recommended that NSF take the following actions to protect the federal government's interest: 1) send a letter of reprimand to the subject informing him that NSF made a finding of misconduct in science against him; and 2) require for 3 years that the subject submit signed certifications along with his supervisor's assurances that all NSF proposals contain properly attributed ideas. We suggested that NSF coordinate its activities with the other federal agencies that received proposals from the engineer.

Plagiarized Material in a Computer Science Proposal

We received an allegation that an assistant professor of computer science at an institution in Illinois plagiarized material from a conference proceeding into an NSF proposal. We identified approximately 50 lines of text and twographics in the assistant professor's proposal that were identical or substantially similar to material in the conference proceeding. The material appeared in the proposal without attribution or distinction. The assistant professor told us that he "copied and paraphrased" some of the material. We concluded that the allegation of plagiarism was substantive and deferred further investigation to the assistant professor's institution.

The institution made a finding of misconduct in science against the assistant professor. The Vice President and Chief Academic Officer sent him a letter of reprimand, notified him of the withdrawal of all of his pending proposals, institutionally debarred him for 1 year, required the review of any requests he intends to submit for external funding during the following year, and requested his participation in an ethics training program. The institution's investigation committee also suggested that the institution establish a formal program for training graduate students and faculty, in particular new and junior faculty, in matters of professional ethics.

We reviewed the committee's report and determined that the institution's investigation was fair, accurate, and thorough, and could be used in lieu of our own independent investigation. Based on the committee's report, we concluded that the assistant professor knowingly plagiarized material into his NSF proposal. We recommended that NSF find that the assistant professor committed misconduct in science, send him a letter of reprimand, and require for a period of 2 years that he submit certifications and his department provide assurances to OIG that any documents he submits to NSF contain no plagiarized material.

ACTIONS by NSF in CONNECTION WITH two CASES

Biologist Misrepresented Publications and Fabricated Data

In our [September 1999 Semiannual Report \(pages 17-18\)](#), we discussed the case of a biologist at a North Carolina university who misrepresented his publication record and included fabricated data in his funded NSF proposal. NSF's Deputy Director sent the biologist a letter of reprimand, concluding that he committed misconduct in science and debarred him for 1 year. NSF management also required that for the next 3 years the biologist submit certifications to the OIG in connection with any proposals or reports he submits to NSF that those documents do not violate NSF's Misconduct in Science and Engineering regulation. NSF also required that the scientist ensure that an appropriate supervisory official provide assurances that, to the best of his/her knowledge, any proposals and reports submitted to NSF by the biologist do not contain misrepresentations regarding the publication status of any manuscripts or any fabricated data.

NSF Requires Certification of Biohazard Review

In our [September 1999 Semiannual Report \(page 19\)](#), we described our investigation into allegations of misconduct in science stemming from a biologist's alleged failure to notify his institution of his biohazardous research. Our investigation concluded that both the biologist and the institution, a university in Michigan, failed to provide reasonable oversight. We recommended that NSF take significant action to ensure the safe conduct of NSF-supported biohazardous research by the biologist and the institution. We also recommended that the university reimburse NSF \$5,000 because a Research Experiences for Undergraduates (REU) supplement was not used to support an undergraduate student but rather was used to purchase general research supplies.

NSF agreed with our conclusions and took remedial action. For a period of 3 years, in connection with any NSF-supported biohazardous research, the biologist must submit copies to the NSF program supporting his research of any representations or promises he made to obtain biohazardous materials, and documentation of his efforts to comply with his commitments. The biologist is also required to submit documentation showing:

- 1) institutional approval and authorizations for his research;
- 2) that he posted notification in compliance with relevant regulations and policies that biohazardous research is being conducted in his laboratories; and
- 3) that individuals are notified of the hazards associated with that research.

For the same period, the institution is required to submit supporting documentation with any NSF proposal that involves biohazardous research to specifically document its review and approval of that research. Finally, the institution is required to reimburse NSF for the REU supplement funds.

SIGNIFICANT ADMINISTRATIVE CASE ACTIVITY

Awardee's Responsibility for Specimen-Collection Permits

In our [March 2000 Semiannual Report \(page 30\)](#), we described the joint efforts of NSF's Directorate of Biological Sciences (BIO) and our office to clarify awardee obligations associated with specimen-related research. Obtaining the proper permits for collecting specimens can be time consuming and confusing; however, the permits are variously designed to protect endangered species, natural resources, flora or fauna, and ensure respect for genetic resources, or cultural heritage. In response to the joint recommendations of BIO and OIG, NSF's Division of Grants and Agreements (DGA) promptly developed special language to be included in all award letters for projects involving specimen collection activity. The new language states:

The awardee shall ensure that award activities carried on both inside and outside the U.S. are coordinated, as necessary, with appropriate Government authorities, and that appropriate licenses, permits or approvals are obtained prior to undertaking proposed activities. . . . [The PI] shall provide a summary in each annual progress report and in the . . . final report, of all permits, licenses or other necessary approvals associated with specimen collection.

DGA has incorporated the language into recent award letters and briefed the NSF divisions that are affected most. It is also developing internal guidance to ensure that DGA staff notify awardees of their permit-related responsibilities to help ensure that specimens collected by NSF-funded PIs are handled in accordance with applicable laws.

During this period, we inquired into an allegation that a Principal Investigator (PI) failed to obtain the necessary collecting permits for the removal of nonendangered specimens from national and state parks. We learned that the PI had obtained a permit for collection from national forest land, but only oral permission from the state parks. The administrators of the state parks told us oral permission is not sufficient and the PI should have obtained written permits. We asked the PI and his university's Authorized Organizational Representative (AOR) if the PI's collection was in accordance with university policy, and further suggested that they contact the various parks to determine an appropriate resolution of the matter.

The PI and AOR told us the university did not have an explicit policy regarding specimen collection. However, the AOR said the university administration would meet to consider modifications to its Research Policy Manual on this topic. The PI contacted the various parks explaining what had happened and asked how he might rectify the situation. Because his specimens were not considered wildlife or an endangered species, the park administrators only requested to know how many specimens he collected and where he collected them. The PI explained that he is now fully aware of the permits he must obtain for future collections and assured us he will obtain them.

The Importance of Accurate Information in Proposals

We often receive allegations of improprieties associated with NSF proposals that raise concerns related to the accuracy of information in Current and Pending Support, Budget, and Biographical sections. While the information in these sections is not directly related to the proposed research, NSF's Program Officers rely on the accuracy of such information to make sound funding decisions. For example, Program Officers need accurate, current and pending support information to assess whether the PI can reasonably commit the required time and effort to the project, to check for similarly funded research, and to review requests for summer salary support on the PI's various awards. We typically refer these issues to NSF management. However, in egregious cases, we have pursued allegations that resulted in findings of misconduct by NSF (e.g., see page 26). Below, we discuss four recent cases that illustrate these issues and their resolution.

In one case, a PI allegedly misrepresented her role as the editor of a publication listed in an NSF proposal. We determined that the PI had editorial responsibility with regard to the publication, but another scientist had actually served as the editor. We concluded that the PI exaggerated her role when she cited herself as editor. We also concluded that the exaggeration was not a serious deviation from accepted practices because she had been involved in the editorial process. We contacted the PI to discuss our concerns about her citation, and she agreed to be more careful when citing her role in this effort in future proposals.

In another case, a PI allegedly misrepresented the access he would have to equipment critical to the success of an NSF award due to the expiration of a loan agreement, which the PI failed to disclose to NSF. In correspondence with us, the PI stated that he decided not to return the equipment on schedule and could replace it if necessary. At our suggestion, the Program Officer explicitly informed the PI and the institution's AOR of NSF's expectations regarding the PI's continued access to such equipment.

In a third case, a Program Officer informed us that a PI allegedly failed to properly describe his current and pending support in two proposals simultaneously submitted to NSF. According to this division's practice, the handling of such compliance issues is delegated to Program Officers. The division administrator told us that both proposals were likely to be declined on scientific merit and the pursuant declination letter could include a reference to the importance of proper acknowledgement of current and pending support. The letter told the PI that a "failure to follow the GPG guidelines is grounds for rejecting a proposal without review." We recommended that he follow this course of action.

The last case is another example of a researcher's lack of attention to current and pending support requirements. NSF received two proposals from different universities under one program announcement. A Co-PI on both proposals failed to disclose his dual participation in both sets of his Current and Pending Forms. A Program Officer learned of this problem during a site visit and questioned the Co-PI about his involvement with each proposal. The Co-PI told the Program Officer that if the two proposals were funded he intended to integrate his responsibilities. Administrators at one of the universities were unaware of the Co-PI's proposed dual obligations. At a meeting between university representatives, the Co-PI, and NSF staff, one of the university's representatives ensured the researcher's commitments would be met by him or other faculty. The Program Officer was satisfied with this resolution.

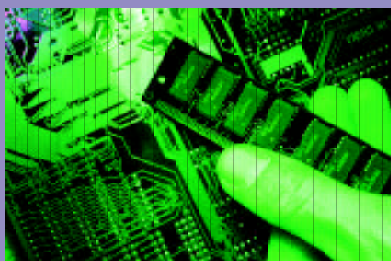
We encourage awardees and PIs to carefully review all information submitted to NSF. Accuracy helps assure fair evaluation of proposals and reduces the number of concerns about potential misrepresentation or other wrongdoing.

ISSUES INVOLVING CIVIL and CRIMINAL ALLEGATIONS

Computer Intrusions

OIG Participation in NSF's Computer Incident Response Team

NSF began the conversion from traditional paper documents to electronic systems in 1994. This conversion included the creation of the internal Proposal, PI, and Reviewer System (PARS) and FastLane,



NSF's electronic system designed to facilitate programmatic and financial transactions and the exchange of information about NSF's programs and awards between NSF and its client community via the internet. NSF has also improved the utility of its web sites to provide more comprehensive public access to information about NSF and NSF grants and publications. Notwithstanding these improvements, NSF's increased reliance on electronic systems presents a risk of loss, misuse, or unauthorized modification of the critical computer infrastructure and confidential information.

This problem is not unique to NSF and in recent years the federal government has issued several directives emphasizing the importance of protecting critical computer infrastructure and information. In conjunction with NSF's Division of Information Services (DIS), OIG organized a Computer Incident Response Team (CIRT). The primary purpose of OIG's participation on the CIRT is the collection and preservation of forensic evidence. DIS CIRT members focus on system protection and continuation or restoration of service. In addition to responding to attacks on NSF's electronic infrastructure, the CIRT handles incidents in which NSF's computers and networks are alleged to be the instruments, or contain evidence, of criminal behavior. The CIRT procedures do not apply to the routine handling of general computer viruses or spamming (junk e-mail, unsolicited advertising and promotional messages) that fall short of a denial-of-service attacks (an attempt to flood a computer network, thereby preventing legitimate network traffic). Through OIG, CIRT coordinates its efforts with other law enforcement entities and reports all significant computer intrusions to the Federal Computer Incident Response Capability (FedCIRC). FedCIRC is a central coordination and analysis facility dealing with computer security related issues affecting the civilian agencies and departments of the federal government. During this period, NSF's CIRT responded to several significant computer incidents that have helped us refine and test our procedures.

Attacks Involving the Computer Help Desk

NSF Help Desk personnel received a report that NSF's Division of Administrative Services (DAS) employees could not access their local area network (LAN) printers. In responding to this report, NSF technicians discovered an alteration to a critical command line in the network logon program.

In the same general time frame, NSF's Division of Information Systems (DIS) personnel experienced a similar problem. Once again, NSF technicians discovered an altered command line. A week after these problems were reported, Help Desk personnel began to experience problems with the password change menu selection on the Help Desk LAN menu. NSF technicians discovered that a program on the Help Desk menu was replaced with a different program that contained a destructive command to reformat (erase) the user's hard drive. This program failed to work because the command was written incorrectly. A week later, Help Desk personnel were alerted that personnel in OIG lost access to their LAN printers. It appeared that someone erased all of the printer directory files on OIG's LAN server. Computer security event logs revealed a series of Help Desk LAN accounts being accessed via a remote dial-in connection during the time frame of these file changes. In response to these computer intrusions, OIG formally requested the technical and forensic computer expertise of the United States Postal Service's Office of Inspector General (USPS OIG). NSF OIG and USPS OIG Special Agents conducted interviews with DIS staff members and Help Desk contract employees, and secured information from an internet service provider. However, OIG could not obtain definitive evidence linking the intrusions to anyone and the case was closed.

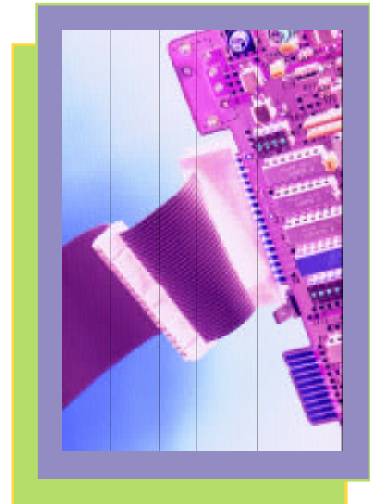
Employee's Unauthorized Access to Computers

Our office learned that an employee in NSF's Directorate for Education and Human Resources (EHR) established unauthorized shared access with the hard drives of several division computers, including the office computer of an EHR Division Director. Based on this and prior behavior by the employee, the EHR Division Director terminated the employee. The NSF CIRT severed the unauthorized connections between the affected computers and searched these computers for evidence of illegal activity. The CIRT found a compressed virus generator program on the employee's computer, but no evidence the employee ever installed or launched this program. Because our office discovered no illegal activity, this case was closed.

Additional Intrusions in the South Pole Station Network

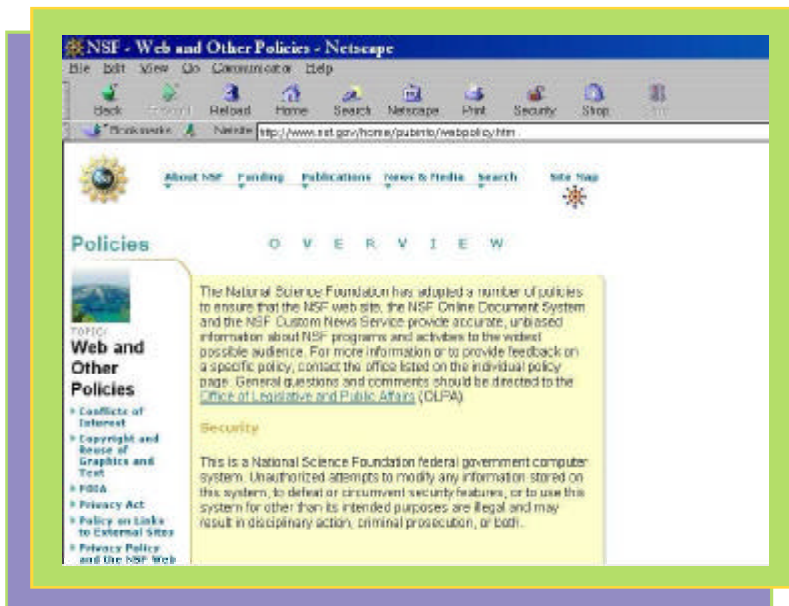
The Office of Polar Programs (OPP) notified OIG that intruders had accessed computer network servers at the United States Antarctic Program (USAP) South Pole station. As with the intrusions described in our [March 2000 Semiannual Report \(page 23\)](#), these unauthorized activities could have compromised user accounts and passwords at the USAP station and allowed unauthorized access to proprietary scientific data.

While OPP has overall administrative responsibility for the USAP, network administration and other information technology operations for the USAP are included as part of the USAP contractor's duties. The new USAP contractor restored the compromised systems to operation and is undertaking an effort to safeguard them from further intrusions. These safeguards will address the recommendation for enhanced security made in connection with prior intrusions. The OIG could not determine the source of the attack, and the case was closed.



Remedial Measures

As a result of the annual computer security audits performed as part of the Chief Financial Officer's audit, and recommendations by OIG based on recent cases, NSF implemented several measures to increase the security of its computer infrastructure. These security measures included significant password protocol changes at the NSF Help Desk and a DIS project to remove the names and passwords of all former NSF employees.



Additionally, NSF implemented electronic warning banners on all applicable systems to alert users to the fact that they are using a federal government computer system and unauthorized use violates federal law. Users will be informed that attempts to abuse the system are subject to disciplinary action or criminal prosecution. Users of the FastLane system for electronic submission of grant proposals to NSF will be told that information provided through that system is confidential, and in order to protect that information, NSF may monitor activity on the system. Finally, NSF staff and contractors accessing the computer systems within NSF will be reminded that they are using federal government computers and all files and traffic on these systems are subject to review by authorized officials. These banners will facilitate the investigation and prosecution of those who use NSF's computer systems for illegal activities.

NSF Employee Pleads Guilty to Conversion of Government Property

In our March 2000 Semiannual Report (page 22), we discussed a case involving an NSF employee who used government purchase cards to buy items for personal use. Our investigation revealed that the employee used the government purchase cards to buy over \$10,000 in personal goods and services, including sports equipment, memberships to internet sites, and the services of a law firm. He was terminated from government service.

We worked with the U.S. Attorney who prosecuted the case. The employee was charged with one count of Conversion of U.S. Government Property, 18 U.S.C. § 641. In July 2000, the employee pled guilty and was sentenced to 3-years probation, and ordered to make full restitution to NSF in the amount of \$10,475.

Subsequently, the NSF directorate where the employee worked asked OIG to perform an audit of its use of purchase cards. The results of that review are described on page 4 of this semiannual.

Geologists Misuse Grant Funds

Our investigation of two geology professors at a Florida university revealed that they improperly spent a combined total of \$20,007.56 from their NSF grants. This amount included unauthorized reimbursements related to travel and per diem expenses. The two geology professors failed to disclose the required financial information to their university as required for NSF grant proposals, an apparent omission of material fact under 18 U.S.C. § 1001. The geology professors also filed false and duplicative claims for travel in an apparent violation of 18 U.S.C. § 666 and § 287. The fraudulent claims requested reimbursement from NSF for consulting work performed on behalf of multinational mineral exploration corporations, for expenses incurred during personal travel to Greece, and for a business trip to Australia. We referred this case to the U.S. Attorney's Office in Florida for its consideration.

CHARACTERISTICS of CASES CLOSED THIS PERIOD

Summary of Case Activity for this Period

We receive allegations of wrongdoing from a variety of sources such as NSF staff, merit reviewers, scientists, engineers, graduate students, and institution officials. We review each allegation for substance, including those we receive anonymously, and classify them as either Preliminary, Administrative (which includes research misconduct violations), or Civil/Criminal cases. Preliminary cases are typically closed within 2 months or if supported by sufficient evidence converted into Administrative or Civil/Criminal cases.

We received 56 allegations. 31 of these were classified as Preliminary, 15 as Administrative, and 10 as Civil/Criminal cases. We closed 19 Preliminary cases and converted 6 others into either Administrative (4) or Civil/Criminal (2) cases.

We closed two Administrative cases after investigations. A finding of misconduct in science was made in one of these cases and NSF's Deputy Director took action consistent with our recommendations, (see pages 24 and 25). The other investigation resulted in a PI and awardee being required by NSF to take remedial action for their failure to provide adequate oversight, (see page 28).

We closed 24 Administrative cases at the inquiry stage. These cases involved subjects at public colleges and universities (18), private universities (2), a government agency (1), private industry (2), and a scientific journal (1). The primary allegations included false statements or other misrepresentations (5), plagiarism (5), failure to cite (3), breach of confidentiality of peer review (3), discrimination (2), falsification of data (1), and duplicate publications (1). Subjects' fields included biology, physics, behavioral science, engineering, geology, mathematics, chemistry, and education. We contacted subjects in 13 of these cases and we requested expert opinions four times.

Other Administrative case actions included deferring one inquiry and one investigation to awardees and forwarding the results of two investigations to NSF's Deputy Director for adjudication.

We also closed 22 Civil/Criminal cases that involved allegations such as diversion of funds (4), false statements or claims (7), conversion of government property (2), and computer intrusions (2). We referred five cases to Department of Justice or state prosecutorial authorities.

OUTREACH EFFORTS - A Bridge to Academia

Outreach Efforts to Promote Research Integrity



Our liaison and outreach programs have been described in previous semiannual reports (March 2000, pages 16-17; September 1999, pages 1-2; and March 1999, page ii). During this reporting period, we presented our seminar for Principal Investigators and Administrators at seven institutions and talked with groups of students at four institutions. We actively participated in a number of professional society meetings. In connection with past or current deferrals of investigations, we spoke with administrators at five universities to provide either technical advice or to seek feedback in order to improve our processes.

We spoke with groups of faculty, researchers, and administrators in California, Washington, Ohio, Montana, and Massachusetts. We discussed the handling of allegations of research misconduct, described several case studies, and highlighted the similarities between NSF policy and the proposed OSTP policy. Administrators and faculty were most interested in hearing about the context in which ethical issues are raised and how cases are resolved. They also asked questions about the investigation and deferral process, safeguards to protect subjects and complainants, and confidentiality issues.

Misconduct officials used this opportunity to disseminate their institutional policy and to answer questions about their institution's process and explain their roles. We believe that our outreach effort builds awareness and trust in the institution's process to resolve allegations.

In group seminars to students in the D.C. metropolitan area, Ohio, Montana, and Massachusetts, we discussed mentoring, collaborations and authorship disputes, peer review, data sharing, and data collection issues. We found that seminar participants often ask about the proposal application process, how their contributions to research are acknowledged, how authorship credit is negotiated, and what happens when disputes in collaborations arise. In response, we provided basic information on the funding process and discussed their ethical concerns in depth.

We also spoke at the Society for Research Administrators' regional meeting in Virginia Beach, Virginia, and the Office of Research Integrity-American Association for the Advancement of Science Practicum on Responding to Allegations of Research Misconduct in St. Charles, Illinois. We presented briefings at two institutions in connection with the Office of Experimental Program to Stimulate Competitive Research reviews and spoke to a group of NSF awardees at the Small Business Innovation Research/Small Business Technology Transfer Grantees' meeting for the Directorate for Engineering.

We spoke to officials at several universities in connection with visits to assist with deferral investigations. In these discussions, we emphasized the importance of meticulous inquiries and investigations, the importance of thoughtful interpretations of the definition of misconduct, careful assessment of intent, and the application of the preponderance of evidence standard. While we stressed the independence of the awardee and federal efforts, we also explained that we rely on thorough awardee investigations to form the basis of our own recommendations.

We constantly solicit feedback in order to improve our deferral process. Recent improvements include more specific guidance to committee members about assessing professional or financial conflict of interests, more focused investigative questions, and reducing the reporting burden on institutional officials.

Participation in Conference on Research Integrity

Staff from the Office of Inspector General submitted abstracts for two poster sessions at the Research Conference on Research Integrity scheduled for November 18-20, 2000. This conference, sponsored by the United States Department of Health and Human Services, Office of Research Integrity, will consider “the emerging challenges for the responsible conduct of research.” One poster will detail our external outreach program for university administrators, principal investigators and graduate students (see our March 2000 Semiannual Report, page 16). This poster seeks suggestions from members of the research community about possible improvements to our outreach program. The second poster addresses the issue of duplicate publications, as discussed in our March 2000 Semiannual Report (pages 18-19). This poster presents a mock version of two nearly identical manuscripts in order to gain a better understanding of various research communities’ expectations in regard to duplicate publications.

REVIEWS: INVESTIGATIVE FOLLOW ON

Research Experiences for Undergraduates Supplements

We sought to assess the effectiveness of Research Experience for Undergraduates supplements in meeting the programs’ stated goal of providing “appropriate and valuable educational experiences for undergraduate students through research participation”(NSF 00-107). We reviewed a sample of REU supplements awarded in a Directorate during Fiscal Year 1999 against three basic criteria: acceptability of expenditures, citizenship eligibility of participants, and quality of experiences reported by participants.

While we found no evidence of financial impropriety or abuse of citizenship eligibility requirements, we are not yet in a position to accurately assess the quality of the participants’ experiences because student turnover made it extremely difficult to obtain meaningful information. As a result, we recommended that NSF consider the benefits of implementing a formal requirement for PIs and students to provide a qualitative assessment of the students’ research experience.

Additionally, we noted some problems regarding the citizenship/permanent residency requirement for REU Supplement recipients. Furthermore, we suggested to NSF that it consider appointing an NSF-wide coordinator for the REU Program. Our recommendations were forwarded to NSF management for consideration.

Assessment of Jacket Retirement System

In connection with our assessment of the accuracy of PI publications in final project reports, which we reported in our [March 2000 Semiannual Report \(page 28\)](#), we found that approximately 20 percent of archived award jackets we requested could not be retrieved through NSF's records management system. During this period, we worked with the Division of Administrative Services (DAS) as it developed a plan to evaluate and correct this problem. We learned that the difficulties in retrieving archived jackets could not be eliminated by simply improving DAS's retrieval/accession system. Successfully tracking retirement-eligible jackets requires careful coordination between NSF program offices and DAS. When NSF programs retain retirement-eligible jackets, DAS has no administrative control over those jackets. DAS provided an NSF-wide training refresher on proposal retirement for Administrative Officers. DAS management is also enhancing the records retrieval system to ensure better tracking and retrieval rates.

DAS has proposed a 6-month timeline for implementing these enhancements. Once the new system enhancements are complete, we will test for reliability and retrieval rate.

Conflict-of-Interests Policies at NSF Engineering Research Centers

In recent conversations with scientists and professional societies, we have been asked for advice on how to assess conflict of interests (COI) issues. NSF supports several programs such as Engineering Research Centers (ERCs) that foster close working relationships between private industry and federally funded researchers. By focusing our analysis on ERCs' COI policies, we were able to assess the scope of the issues pertinent to reducing potential conflicts. We analyzed COI policies from a number of NSF ERCs and spoke with knowledgeable individuals.

There are 21 interdisciplinary ERC centers throughout the United States. They provide an integrated environment for private industry and academic researchers to study and design complex engineering systems. Several NSF ERCs include collaborations between multiple universities and international industrial partners.

NSF regulations require all ERCs to develop and enforce a COI policy requiring disclosure of all significant financial interests that would reasonably appear to be affected by the research or educational activities funded or proposed for funding by NSF; or in entities whose financial interests would reasonably appear to be affected by such activities.

We compared key terms (including COI, conflict of commitments, and immediate family), levels of guidance, and procedures for managing COI. We found significant differences in definitions and levels of guidance. Several ERC policies did not provide definitions for critical terms. In addition, the procedures for managing COIs differed across the ERC policies.

We have received requests from many investigators for additional guidance on resolving COI issues. We hope our effort will enable us to provide informed guidance to investigators and universities.

Statistical Data

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AUDIT REPORTS ISSUED WITH RECOMMENDATIONS for BETTER use of FUNDS

	<u>Dollar Value</u>
A. For which no management decision has been made by the commencement of the reporting period	100,000
B. Recommendations that were issued during the reporting period	0
C. Adjustments related to prior recommendations	300,000
Subtotal of A+ B+ C	400,000
D. For which a management decision was made during the reporting period	400,000
(i) dollar value of management decisions that were consistent with OIG recommendations	400,000
(ii) dollar value of recommendations that were not agreed to by management	0
E. For which no management decision had been made by the end of the reporting period	0
For which no management decision was made within 6 months of issuance	0

AUDIT REPORTS ISSUED WITH QUESTIONED COSTS

	Number of Reports	Questioned Costs	Unsupported Costs
A. For which no management decision has been made by the commencement of the reporting period	11	2,022,750	314,987
B. That were issued during the reporting period	21	6,007,044	2,886,525
C. Adjustment related to prior recommendations	(1)	(641,129)	0
Subtotal of A+ B+ C	31	7,388,665	3,201,512
D. For which a management decision was made during the reporting period	13	1,388,129	314,987
(i) dollar value of disallowed costs	N/A	539,472	N/A
(ii) dollar value of costs not disallowed	N/A	848,657	N/A
E. For which no management decision had been made by the end of the reporting period	18	6,000,536	2,886,525
For which no management decision was made within 6 months of issuance	0	0	0

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.

The General Accounting Office 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 non-federal 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 non-federal 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 non-federal 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 41 provides statistical information about shortfalls occurring during the course of a project and at the completion of the project.

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 42 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. Reports with monetary findings for which no management decision has been made by the beginning of the reporting period	3	987,061	619,144	239,980
B. Reports with monetary findings that were issued during the reporting period	9	24,383,764	10,388,386	2,456,509
C. Adjustments related to prior recommendations	N/A	0	0	0
Total of Reports With Cost-Sharing Findings (A+ B+ C)	12	25,370,825	11,007,530	2,696,489
D. For which a management decision was made during the reporting period	3	987,061		
1. Dollar value of cost-sharing shortfall that grantee agreed to provide	N/A	N/A	584,584	0
2. Dollar value of cost-sharing shortfall that management waived	N/A	N/A	34,560	239,980
E. Reports with monetary findings for which no management decision has been made by the end of the reporting period	9	24,383,764	10,388,386	2,456,509

STATUS of SYSTEMIC RECOMMENDATIONS THAT INVOLVE INTERNAL NSF MANAGEMENT

Open Recommendations

Recommendations Open at the Beginning
of the Reporting Period

1

New Recommendations Made During
Reporting Period

11

Total Recommendations to be Addressed

12

Management Resolution of Recommendations¹

Awaiting Resolution

11

Resolved Consistent With OIG Recommendations

1

Management Decision That No Action is Required

0

Final Action on OIG Recommendations

Final Action Completed

0

Recommendations Open at End of Period

12

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 Resolution²

0 through 6 Months

1

7 through 12 Months

0

13 through 18 Months

0

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 decided are appropriate to address an OIG recommendation.

LIST of REPORTS

NSF and CPA Performed Reviews

Report Number	Subject	Questioned Costs	Unsupported Costs	Better Use of Funds	Cost Sharing At-Risk
00-1009	Science Center	182,678	34,604	0	0
00-1010	Board of Education	969,738	969,383	0	10,139,862
00-1011	Science Academy	0	0	0	0
00-1012	Research Center	4,997	0	0	0
00-1013	Center	0	0	0	0
00-1014	University	0	0	0	248,524
00-1015	University	271,440	0	0	0
00-1016	University	34,015	34,015	0	0
00-1017	Educational Asoc.	445,742	0	0	0
00-1018	Institute	82,802	9,042	0	0
00-1019	Public School System	2,852,914	1,815,448	0	0
00-1020	Experiment Station	86,854	26,033	0	0
00-1021	Math Institute	121,095	0	0	0
00-2006	Project	0	0	0	0
00-2007	Air Force Base	109,860	0	0	0
00-2008	Purchase Card Use	0	0	0	0
00-6008	Contractor	641,129	0	0	0
00-6009	Center	0	0	0	0
00-6010	University Center	65,351	0	0	0
	Total	5,868,615	2,888,525	0	10,388,386

LIST of REPORTS

NSF-Cognizant Reports

Report Number	Subject	Questioned Costs	Unsupported Costs	Cost Sharing At-Risk
00-4011	Society	0	0	0
00-4012	College	0	0	0
00-4013	Learning Center	0	0	0
00-4014	Association	0	0	0
00-4015	Teachers Council	0	0	0
00-4016	Higher Education	0	0	0
00-4017	Research Institute	0	0	0
00-4018	Television Company	0	0	0
00-4019	Foundation	0	0	0
	Total	0	0	0

LIST of REPORTS

Other Federal Audits

Report Number	Subject	Questioned Costs	Unsupported Costs	Cost Sharing At-Risk
00-5045	University	15,558	0	N/A
00-5059	State	13,438	0	N/A
00-5060	University	3,239	0	N/A
00-5066	College	56,383	0	N/A
00-5067	University	179	0	N/A
00-5073	College	3,090	0	N/A
00-5082	State	1,018	0	N/A
00-5083	Public School System	45,524	0	N/A
Total		138,429	0	0

AUDIT REPORTS WITH OUTSTANDING MANAGEMENT DECISIONS

This section identifies audit reports involving questioned costs, funds put to better use, and cost sharing at risk where management had not made a final decision on the corrective action necessary for report resolution within 6 months of the report's issue date. At the end of the reporting period, there were no reports or items remaining open for a period longer than six months. All twelve reports remaining open at the end of the last reporting period have been closed. The status of systemic recommendations that involve internal NSF management are described on page 42.

INVESTIGATIVE ACTIVITY and STATISTICS

Investigative Activity

Active Cases From Previous Reporting Period	35
New Allegations	12
Total Cases	47
Total Cases Closed	23
Active Cases	24

Investigative Statistics

New Referrals	0
Referrals From Previous Reporting Period	0
Indictments (including criminal complaints)	2
Criminal Convictions/Pleas	2
Civil Settlements	0
Civil Complaints	0
Administrative Actions	1
Investigative Recoveries*	\$15,475

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

MISCONDUCT CASE ACTIVITY and ASSURANCE/CERTIFICATIONS RECEIVED

Misconduct Case Activity

	<u>FY 2000 First Half</u>	<u>FY 2000 Last Half</u>
Active Cases From Prior Period	49	37
Received During Period	25	19
Closed Out During Period	37	26
In-Process at End of Period	37	30
Cases Forwarded to the Office of the Director During Period for Adjudication	1	2
Cases Reported in Prior Periods With No Adjudication by the Office of the Director	2*	1**

*These cases are described in our [September 1999 Semiannual Report, pages 17-18 and 19-21](#).

**This case is described in our [March 2000 Semiannual Report, pages 19-20](#).

Assurances and Certifications*

Number of Cases Requiring Assurances at End of Period	6
Number of Cases Requiring Certifications at End of Period	10**
Assurances Received During This Period	0
Certifications Received During This Period	0
Number of Debarments in Effect at the End of 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 Associate Inspector General for Scientific Integrity 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.

**One of these cases is described on page 26. It ultimately was not considered a misconduct case.

ACRONYMS

AOR	Authorized Organizational Representative
BIO	Directorate for Biological Sciences
CFO	Chief Financial Officer
CIRT	Computer Incident Response Team
CPA	Certified Public Accountant
COI	Conflict of Interests
COV	Committee of Visitors
CPO	Division of Contracts, Policy, and Oversight
DARPA	Defense Advanced Research Projects Agency
DAS	Division of Administration Services
DGA	Division of Grants and Agreements
DIS	Division of Information Systems
DOD	Department of Defense
DOE	Department of Energy
DOJ	Department of Justice
ECIE	Executive Council on Integrity and Efficiency
EHR	Directorate for Education and Human Resources
EPSCoR	Experimental Program to Stimulate Competitive Research
FedCIRT	Federal Computer Incident Response Team
FY	Fiscal Year
GPRA	Government Performance and Results Act
ISP	Internet Service Provider
LAN	Local Area Network
MOU	Memoranda of Understanding
NSB	National Science Board

ACRONYMS

ODP	Ocean Drilling Program
OGC	Office of General Counsel
OPP	Office of Polar Programs
OSTP	Office of Science and Technology Policy
PARS	Proposal, PI, and Reviewer System
PCIE	President's Council on Integrity and Efficiency
PI	Principal Investigator
PP&E	Property, Plant, and Equipment
REU	Research Experiences for Undergraduates
SBIR	Small Business Innovation Research
SGER	Small Grants for Exploratory Research
SPAWAR	Space and Naval Warfare Systems Center
SPSE	South Pole Safety and Environmental
SPSM	South Pole Station Modernization
STC	Science and Technology Center
USAP	United States Antarctic Program
USPS OIG	United States Postal Service Office of Inspector General
USI	Urban Systemic Initiative

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