

# Semiannual Report to the Congress

September 2001



National Science Foundation

 **Office of Inspector General**

***“...The work we do – the science and engineering we support – helps as much as any human action to combat the global factors that encourage events such as Tuesday’s, which include ignorance, poverty and prejudice. Every week we move the boundaries of knowledge and reason a little farther ahead. Every month we get genuinely, if sometimes imperceptibly, closer to a world in which decency, community, tolerance and freedom can flourish.”***

**Dr. Rita R. Colwell  
Director, National Science Foundation**

**September 14, 2001  
National Day of Prayer and Remembrance**



## From the Inspector General

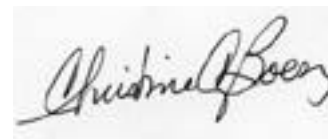
**T**his report highlights the activities of the National Science Foundation (NSF) Office of Inspector General (OIG) for the six-month period ending September 30, 2001. The time period is one I am certain we will never forget because of the horrendous events that occurred on September 11<sup>th</sup>. Traveling in China during the attack, I experienced an outpouring of support for this country at a very personal level. The National Natural Science Foundation of China telephoned to convey official sympathy to me and to all Americans. More spontaneously, many people stopped me on the street to express, in any way that they could, their sorrow and sympathy. Some spoke a few words of English expressing sadness and sorrow; some gestured by touching their hearts and caressing hands. From time to time I also ran into tour groups from other countries, such as Australia, New Zealand, France, Spain, and Japan. All of the expressions of concern and grief were poignant reminders that people care about people.

As we continue to recover from the attacks, I am proud to report that our office successfully carried on its responsibilities during these trying times, including contributing to the recovery efforts of the Pentagon. The following is a summary of some of the more significant issues described in this semiannual report:

- Seven audits of awardee institutions' cost-sharing practices reveal that problems in accounting for cost sharing are prevalent even among some of NSF's largest grant awardees. These weaknesses continue to undermine NSF's ability to oversee an award, and to the extent they cause NSF to pay more than its fair share, reduce opportunities to fund other awards. **(p. 21)**
- The Inspector General testified before the House Subcommittee on Research in September about NSF's Large Facility Projects Management & Oversight Plan. NSF's plan addresses weaknesses associated with large project management that were identified in a previously reported OIG audit (see March 2001 Semiannual Report, p. 6). I advised the Subcommittee that although the draft plan was an important first step, NSF needed to strengthen it to improve accountability, authority, and post-award project management. **(p. 3)**
- An audit of an international research institute that received approximately \$2.2 million annually from NSF indicated that the director invested NSF award funds in the stock market. The money, intended to support scientific research, was invested in volatile stocks and mutual funds through a margined investment account over which he had sole authority. Although there was no evidence of fraud, the actions of the director subjected U.S. Government funds to an unacceptable level of risk and reflected weak internal controls and oversight on the part of the institute and its governing council. **(p. 7)**
- Audits of education awards and NSF contracts indicate increased risks of non-compliance with award conditions. Averaging \$500,000 each, the education grants tend to be much larger and inherently riskier than the typical NSF grant. We conducted five audits of education awards with claimed amounts of \$18.7 million and questioned costs totaling over \$3.9 million. Audits of NSF contracts worth \$25.7 million resulted in our questioning \$1.2 million, with instances of material non-compliance with federal regulations and internal control weaknesses cited for three of the five contractors. **(p. 8, 14)**

- Our FY 2000 Management Letter Report to NSF recommends improved financial reporting and award administration. We suggested that NSF develop performance measures and goals that can be linked to the budget, actual costs, and management challenges. The report also proposes a risk-based approach to monitoring and overseeing grants and awards. **(p. 6)**
- An investigation of a Small Business Innovative Research (SBIR) grant determined the recipient had grossly misrepresented the accomplishments of his Phase I SBIR grant. The text of the final report was essentially copied verbatim from a Masters thesis written, by one of the subject's graduate students, before the grant was awarded. We found that, in fact, no work at all had been performed by the subject under the Phase I grant. On our recommendation, NSF suspended the grant. The subject subsequently repaid \$198,975 to NSF and made an unrestricted donation to NSF of an additional \$27,500. Other aspects of this case are still being reviewed. **(p. 41)**
- An investigation of an SBIR grant proposal determined that the principal investigator (PI) had plagiarized a significant portion of the material contained in the proposal. The PI copied materials verbatim from six different source documents. We also determined that the PI had submitted proposals to two other federal agencies with plagiarized material. We recommended that NSF find that the scientist committed misconduct in science, send a letter of reprimand, and require oversight by this OIG for a period of two years to assure that any documents he submits to NSF contain no plagiarized material. **(p. 34)**
- As part of our ongoing effort to reach out to the research community, we developed an Education and Outreach Plan during this semiannual period. Our goals, which are based on the OIG Strategic Plan, are to ensure the integrity of financial administrative and research systems; prevent and detect fraud, waste, abuse, and research misconduct; maintain current knowledge about the communities we serve to enable us to focus on matters of substantive concern; and make it easy for the communities we serve to contact and interact with us. **(p. 49)**

As we move into fiscal year 2002, we are committed to assisting the National Science Foundation in addressing the challenges it faces in the rapidly changing world of science and technology. As the Congress, the National Science Board and the NSF adjust the agency's priorities to meet new national priorities, the OIG will be flexible so that we can continue to add value to these efforts. We appreciate the past cooperation and responsiveness of the National Science Board, the Director and others in NSF and look forward to continuing our productive working relationship.



Christine C. Boesz, Dr.P.H.  
Inspector General  
November 2, 2001

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# OIG Management

## Congressional Relations

Recognizing the value of an independent perspective, Congress frequently calls upon the OIG to provide information, analysis, and testimony related to significant agency issues. During this semiannual period, our office responded to the following requests:

### Congressional Request for Top-10 Performance Measures

The Government Performance and Results Act of 1993 (GPRA) requires federal agencies to evaluate the results of their activities. For NSF, this involves evaluating and measuring the long-term results of basic research, a formidable task. But despite the difficulties inherent in measuring the success of basic research, NSF is making progress in complying with GPRA and devotes considerable resources toward this effort.

With little independent verification of GPRA data being performed, the validity and accuracy of the information that agencies report under GPRA have been a concern of the General Accounting Office, and consequently were included in the OIG's current list of NSF's major management challenges. In response to these concerns, NSF engaged an independent public accounting firm to verify and validate selected FY 2000 GPRA performance data as well as the process used in collecting and compiling the data and information.

In response to a request from the Chair of the House Committee on Government Reform, we selected the ten most significant performance measures contained in NSF's *FY 2000 GPRA Performance Report* and paid particular attention to whether the data underlying these measures had been verified and validated. In our assessment, NSF's ten most significant performance measures are:

- NSF's use of Committees of Visitors and Advisory Committees to review program practices, processes, and results for NSF's four qualitative outcome goals;
- Percent of funds allocated to projects selected through an external, merit-based, competitive process;
- Percent of proposals submitted electronically through FastLane;
- Percent of program announcements and solicitations available at least three months prior to deadlines or target dates;
- Percent of proposals processed within six months of receipt;
- Percent of competitive research grants awarded to new investigators;
- Efforts to attract job applications from members of underrepresented groups in order to increase NSF staffing in those groups;
- Comparison of facility projects' actual total cost with planned total cost;
- Comparison of facility projects' actual construction progress with planned schedule;
- Comparison of facility projects' actual operating time with scheduled operating time. (The operating time of a facility is a measure of its efficiency.)

Of these ten performance measures, the underlying data for six were verified and validated. NSF indicated that it plans to expand its verification and validation efforts in the near future, and have its independent contractor review the data underlying three more of these measures.

## Congressional Testimony

During this semiannual period, the Inspector General was invited to appear before two separate congressional committees to testify about several management issues reported on by the OIG. In June, Dr. Boesz testified before the Senate Committee on Appropriations Subcommittee on VA, HUD, and Independent Agencies (Appropriations Subcommittee) as part of the hearing on NSF's FY 2002 appropriation. Additionally, in September, Dr. Boesz testified before the House of Representatives Committee on Science Subcommittee on Research (Subcommittee on Research) as part of a hearing on NSF's Major Research Facilities: Planning and Management Issues.

### *Senate Hearing on Appropriations*

The Senate Appropriations Subcommittee invited the Inspector General, the NSB Chair, and the NSF Director, to testify at the hearing on NSF's FY 2002

appropriation, regarding the major management challenges that face the National Science Board and NSF over the next year. Dr. Boesz focused her testimony on three of the management challenges, discussed in the March 2001 Semiannual Report (pp. 4-6), that involve management of NSF's awards: Award Administration, Management of Large Infrastructure Projects, and Cost Sharing.

Dr. Boesz testified that as the nature and composition of NSF's awards change, new challenges arise in the way they are managed. These challenges must be addressed. For example, NSF should focus on the interactions among its program, grant, and contract officers so that information vital to managing awards can be shared. NSF should also identify those awards and institutions that are likely to pose greater risk and accord them closer oversight.

Additionally, because NSF is increasing its investment in large infrastructure projects, Dr. Boesz testified on the need for greater oversight and management of these awards. Finally, as first identified in the September 2000 Semiannual Report (p. 11), OIG audits are finding an increasing number of issues associated with cost sharing. Consequently, Dr. Boesz testified that improving its administration of awards requiring cost sharing is among the most important priorities for NSF management.

### *House Hearing on Major Research Facilities*

As discussed in the March 2001 Semiannual Report (pp. 6-7), NSF is in the process of updating its policies and procedures to strengthen the management and oversight of large facility projects. As part of this process, NSF is developing a *Large Facility Projects Management and Oversight Plan*. NSF has sought OIG input as it developed this Plan, and OIG has responded with comments to NSF throughout this process. In September, the House Subcommittee on Research convened a hearing on NSF's Major Research Facilities: Planning and Management Issues and invited Dr. Boesz, the NSB Vice-Chair, and the NSF Director, to testify regarding the OIG's recent review of NSF's procedures and policies in this area.

The IG testified that the *Large Facility Projects Management and Oversight Plan* is an important first step in the process of ensuring that NSF's large facility projects provide their intended research benefits while also providing appropriate stewardship over public funds. She further stated that the Plan represents progress toward laying the groundwork for all of NSF's efforts in the area of large facility management and provides a blueprint for future actions.

However, Dr. Boesz noted that awards for large facilities are inherently different from those that NSF makes to institutions for individual research and research projects and therefore require a different management approach. Her testimony focused on



several issues related to the implementation phase of large facility projects, and recommended improvements in the areas of accountability, authority, and post-award project management. The IG stated that the role of our office would be to work with NSF to ensure that sound business and management practices are in place in order to advance NSF's scientific goals.

## OIG Performance Plan

The OIG is nearing completion of our first performance plan. Built on the strategic plan that we developed last year, the performance plan lays out goals, performance measures, and strategies for improving the OIG's performance. We plan to use FY 2002 to measure our baseline performance and to use the baseline information we generate this year to set meaningful targets for FY 2003.

We held a two-day all staff retreat in June to discuss what measures, strategies, and actions we should give priority in FY 2002. The retreat built on extensive consultations among our managers and staff about the key areas in which the OIG should strive for improvement. We anticipate that the performance plan, which is based on the requirements of the Government Performance and Results Act, will be a vital tool in managing our office, holding individual managers accountable for achieving goals, as well as providing useful data for external audiences interested in our performance.



The Inspector General responds to a question during a discussion of the OIG performance plan.

# Audits & Reviews

We are responsible for auditing grants, contracts, and cooperative agreements funded by NSF, and for reviewing agency operations to ensure that they are conducted effectively and efficiently. Financial and compliance audits determine (1) whether costs claimed by award recipients are allowable, reasonable, and allocated to the proper award, and (2) if awardees had adequate procedures and controls to ensure compliance with federal laws and regulations, NSF requirements, and the terms and conditions of the award. Performance audits and reviews evaluate the effectiveness and the efficiency of the administrative and programmatic aspects of NSF and awardee operations. In addition, by law we conduct the annual audit of NSF's fiscal year financial statements, including evaluations of internal controls and data processing systems.

## Administration and Management

Improving financial management and information security has been an important priority of the Federal Government for many years. Their importance was reaffirmed in August 2001, when *The President's Management Agenda* identified improved financial management as one of five government-wide initiatives the new administration would undertake. The President's goal is to ensure that federal financial management systems produce accurate and timely information to support operating, budget, and policy decisions.

Since 1990, Congress has enacted several laws that are designed to improve federal financial management and information security. The Chief Financial Officer's Act of 1990 (CFO Act), as amended, established the legal framework for improving federal financial management. The CFO Act requires that federal agencies prepare financial statements and the agency's OIG, or an independent public accounting firm selected by the OIG, audit these statements. The Government Information Security Act (GISRA), enacted in October 2000, requires that agencies perform annual reviews and report on their information system security programs. In addition, Inspectors General are to provide independent evaluations of the information security program and practices of their agencies. On September 10, 2001, NSF and the OIG submitted the agency's first report under this Act.

### HIGHLIGHTS

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During this semiannual period the Office of Inspector General issued two reports that resulted from work performed in accordance with the CFO Act and GISRA. In addition, a report on the financial results of the Ocean Drilling Program was also issued at NSF's request.

## Management Letter

We issued our *FY 2000 Management Letter Report* to NSF, containing details on internal control findings and recommendations identified during our FY 2000 financial statement audit and review of NSF's electronic data processing controls. The *Management Letter Report* made several recommendations to NSF management for improving financial reporting and electronic data processing including a recommendation that NSF develop performance measures and goals that can be linked to the budget, actual costs, and management challenges. In addition, it recommended that NSF incorporate a risk-based process for grant monitoring and oversight to ensure that NSF funds are spent only for the purposes intended by the grant. Management has prepared a response to the recommendations that is currently under review by our office.

## GISRA Report

In accordance with procedures established by the Office of Management and Budget (OMB), NSF and the OIG provided to OMB an agency evaluation and an independent assessment of NSF's information security programs and practices. We reported that for several years the OIG has worked closely with NSF management to strengthen the agency's information security program. NSF continues to demonstrate its commitment to improve information security programs and processes and has made significant progress toward meeting GISRA requirements. However, the report noted that improvements to information security systems were needed to reduce the risk of (1) loss, misuse, and unauthorized access to and modification of information and (2) disruption of services. The OIG plans to review these areas in more detail during its audit of NSF's FY 2001 financial statements.

## Review of Ocean Drilling Program Financial Reports

The Ocean Drilling Program (ODP) involves an exploration of the Earth's crust beneath the ocean to reveal the composition, structure, and history of the submerged portion of the Earth's surface. The program is being carried out by NSF

in partnership with seven international members that represent over 20 countries. As prescribed in a Memorandum of Understanding, NSF and the international members jointly contribute approximately \$46.5 million annually to support ODP science planning and operations. At NSF's request, we performed a review to verify that the amounts of contributions, receipts, and obligations were accurately reported in the ODP Financial Reports.

## Award Administration

### International Research Institute Invests Government Funds in Stock Market

In July, we reported on an audit of an international research institute that has received an annual grant from NSF of approximately \$2.2 million to support its research programs since 1992. A U.S. honorary society has received a separate NSF grant to act as the U.S. member organization, which is responsible for overseeing U.S. interests at the institute.

Our audit found that the institute's management controls were inadequate to effectively safeguard NSF funds. In particular, the governing council failed to adequately oversee the director's management of the institute's finances. Acting within his authority granted under the institute's charter and council resolutions, the former director invested member funds in stocks, bonds, mutual funds, and cash through a margined investment account over which he had sole signature authority. The investments subjected member funds to an excessive level of risk and violated OMB Circular A-110, which limits investment of funds from a government award to short-term interest bearing accounts. The value of the investment account averaged almost \$6.6 million from 1997 to 2000.

Several causes of weak financial controls and oversight were cited. A lack of clarity in NSF's award agreements with the institute and the U.S. member organization contributed to confusion about U.S. requirements for the award. Similarly, the U.S. member organization's oversight role was not clearly defined in its grant agreement with NSF, and communication between NSF and the U.S. member organization was incomplete, particularly regarding events and discussions occurring at the institute's council meetings. However, regardless of the lack of clarity as to its oversight role, we found that the institute's governing council, including the U.S. member organization which was representing U.S. interests, failed to exercise good judgement and did not effectively oversee the financial management of the institute.

We recommended that NSF undertake efforts through the U.S. member organization to strengthen the institute’s financial controls and improve the governing council’s oversight of the financial administration of the institute. We further recommended that NSF release additional funds to the institute only after verifying that internal controls are adequate to safeguard NSF funds. Finally, we recommended that NSF clarify in writing the responsibilities of the U.S. member organization, enhance associated communications, and develop improved administrative procedures to handle future grants for membership contribution.

The institute has begun taking steps to improve its internal controls and oversight by its governing council. NSF agreed with all recommendations, but the program office disagreed with our characterization of the funding as a “membership contribution” if that implied that continued funding would not be based on scientific quality as determined by a peer review. Therefore, future NSF funding for this institute is under review.

## Education Related Audits

NSF makes awards in all areas of science, mathematics, and engineering. Many education programs in these areas are funded through NSF’s Directorate for Education and Human Resources (EHR). For FY 2000, EHR Directorate’s obligations for awards amounted to \$683.5 million, or 17 percent of NSF’s \$3.9 billion total funding for awards. With the amount of individual awards often exceeding \$500,000, much larger than the NSF average, we consider EHR awards to be inherently riskier than other NSF awards.

In addition, many of the awardees include school districts, small colleges and universities, for-profit entities, and non-profit organizations that have limited experience with NSF and the administrative and accounting requirements associated with its awards. In past audits of EHR awards, we have found that awardees experience problems with accounting for NSF funds in accordance with award and federal requirements. We believe our continued audit work serves to help awardees obtain a better understanding of the award requirements, while also providing a valuable tool to NSF in evaluating how to effectively manage these high risk awardees.



William Harrison, OIG audit manager, was recognized by the ECIE with an Award for Excellence

During this semiannual period, we completed five audits of EHR award recipients, involving \$18.7 million in costs claimed over a five-year period. Three of the five audits disclosed questioned costs totaling over \$3.9 million. For each of the five awardees, we found instances of material non-compliance and internal control weaknesses. Our findings suggest that it would be beneficial for NSF to develop procedures for identifying high risk awardees and ensuring that they comply with federal requirements and implement appropriate internal control systems. For awardees deemed to be high risk, the procedures might include: conducting a more rigorous analysis of awardees' systems prior to the start of an award; providing more detailed instruction to high risk awardees; and monitoring award activity more closely to assure financial and administrative compliance.

In each audit, we made recommendations to the awardees for improving their compliance with NSF and federal requirements and strengthening their internal control systems. A summary of the results of each of these audits is provided below. In addition, we have included a summary of three EHR awardee audits described in the last semiannual report that NSF management resolved during this semiannual period.

## A Northeastern Local School District Did Not Provide Documentation For \$2.9 Million of Claimed Costs

We conducted a financial and compliance audit of \$8.9 million in costs claimed by a northeastern local school district. The school district received an EHR award of \$10.4 million to stimulate improvement in the quality of science and mathematics education in grades K-12. Of the amount claimed, we questioned a total of \$3,336,687.

We questioned \$2,936,594 because the school district did not provide documentation to support costs claimed for the first two years of the award period. We also questioned \$35,277 claimed for severance pay and \$364,816 budgeted for participant support costs but expended for other purposes without NSF's prior approval. We recommended that the questioned costs be returned to NSF.

We also identified an instance of material non-compliance with federal regulations. We found that employees of the school district did not complete time sheets or sign semi-annual certifications to support salary and wage costs charged to the NSF award as required by federal regulations. Salary and wage costs represented \$3.7 million or 40.9 percent of total costs claimed under this award. Because the employees were not required to complete time sheets or sign labor effort certifications, NSF had no assurance that salary and wage costs charged to NSF were for work related to the award. We did not question the related salary and wage costs because we determined that the charges appeared appropriate based on interviews with the

school district's project director and employees, and a review of the award documentation. Nevertheless, we recommended that the awardee amend its policies and procedures to ensure that documentation for salary and wage costs is maintained to provide clear evidence that NSF funds are being used for the purposes intended under the award.

The school district disagreed with many of our findings, and we have sent our report to NSF's Division of Contracts, Policy and Oversight for resolution.

### Increased Controls Needed at a Southern State University

We reviewed \$2.6 million of costs claimed by a southern state university that received three EHR awards. The awards provided funding to the university to (a) participate in an alliance to encourage underrepresented students to select careers in science, engineering, and mathematics, (b) establish a research center with another southern state university for the purpose of integrating education with research in the areas of science, mathematics, engineering, and technology, and (c) participate in a state-wide initiative to improve the preparation of future K-12 teachers. The awardee promised to contribute a total of over \$15 million in cost sharing on its three NSF awards. We questioned \$387,471 of total costs claimed.

We found that the awardee overpaid \$363,560 to one of its subcontractors on an NSF award. In later accounting periods, the awardee recovered its overpayment to the subcontractor and reduced the related claim to NSF.

We noted several instances of material non-compliance with NSF award and federal regulations. The awardee did not use award funds as required by NSF to interact with other NSF-funded centers and in NSF specified percentages on targeted disciplines. The awardee's noncompliance with these specific award requirements could impact NSF's attainment of overall program objectives. It also could impact the awardee's ability to complete the NSF project consistent with the award objectives. We recommended that the awardee establish policies and procedures to ensure that NSF funds are expended in conformance with award agreements.

Also, the awardee did not have a system for readily identifying cost sharing on its awards and did not submit cost-sharing certifications as required by NSF. This diminishes NSF's ability to monitor the awardee's cost sharing on the awards and the awardee's progress in meeting project objectives. It could also impact the awardee's ability to adequately support cost sharing at the completion of these projects. We recommended that the awardee strengthen its current policies and procedures to ensure adequate systems are in place for supporting cost sharing and submitting required cost sharing certification.

Additionally, the awardee did not provide documentation to show after-the-fact confirmation of work performed for employee time charged to the awards as required by federal regulations.

The university agreed with some of our findings. We have forwarded the report to NSF's Division of Contracts, Policy, and Oversight for resolution.

## Northeast Nonprofit Entity Claimed \$206,503 Provided by Another Funding Source

We audited a \$2.5 million EHR award issued to a northeastern nonprofit entity to conduct workshops and provide teaching materials for teachers in three rural sites in Mississippi, Massachusetts, and New York. The overall project objective was to increase the proportion of students who complete algebra successfully in late middle school or high school and who enter college preparatory mathematics studies.

Of the \$2,008,087 costs claimed by the entity, we questioned costs totaling \$215,788. Consultant and participant support costs of \$206,503 were questioned because these costs had been funded by another funding source. We also questioned \$9,285 of consultant costs, which either exceeded the daily maximum rate allowed or could not be supported with appropriate documentation. We identified areas for improvement to ensure the entity's compliance with NSF and federal regulations. We also recommended that the questioned costs be returned to NSF.

We identified three material weaknesses in the entity's internal control structure that place NSF funds at risk: 1) the awardee's accounting system did not account for costs by source and the application of award funds; 2) the invoice authorization forms used by the awardee were not properly reviewed or approved prior to the expenditure of funds; 3) the subcontract agreements of the awardee did not include the clauses required by federal regulation. We recommended that the awardee improve its internal controls in these areas to ensure that expenditures are appropriately authorized and charged to the appropriate funding source and that federal requirements are complied with.

The awardee agreed with many of our findings. We have forwarded our report to NSF's Division of Contracts, Policy, and Oversight.



## Midwestern Museum's Accounting System Did Not Identify Costs Charged to Awards

A midwestern museum received four EHR awards to foster awareness of science through exhibits, films, and web sites. The museum, a combination of a science center and a natural history museum, is dedicated to providing science-learning opportunities in the museum and to the science community at large.

Of the \$3.3 million in claimed costs and \$6.7 million claimed for cost sharing, we did not identify any questioned costs. However, we found that the museum's accounting system did not distinguish between direct award and cost-sharing costs in accordance with Federal requirements which require that costs be specifically identified with a funding source. When direct award costs are commingled with cost sharing, certain costs which are only allowable as cost sharing could be charged to the NSF award as direct costs and go undetected. In addition, commingled funds make it difficult to determine whether the awardee has met its proportionate share of the project costs. Accordingly, we recommended that the museum track cost sharing separately from NSF direct award costs. The museum disagreed with the finding because it believed that modifying its accounting procedures to record cost by funding source would not be cost effective.

We also noted that there were conflicting provisions in the award documents for reimbursing indirect costs. Inconsistencies or unclear provisions in awards for reimbursement of indirect costs can lead to misunderstandings between NSF and award recipients and result in questioned indirect costs. We recommended that NSF's Division of Grants and Agreements ensure that grant officials review proposal award budgets and indirect cost rates with their applicable direct cost bases to ensure mathematical accuracy and consistency with provisions in award letters and negotiated rate agreements.

We have forwarded the report to NSF's Division of Contracts, Policy, and Oversight for audit resolution.

## Northeastern Museum Needs To Improve Documentation to Support Labor and Fringe Benefit Costs

We conducted an audit of two NSF awards issued to a northeastern museum dedicated to education, conservation and research of water. Through exhibits of aquatic life, the museum expands public understanding, appreciation, and stewardship of the marine environment. The EHR made awards to develop traveling exhibits related to acoustic oceanography, and scientific and environmental issues facing Lake Victoria and North American fisheries.

Our audit did not question any of the \$1.9 million in total direct award costs or \$1.2 million of cost sharing claimed by the museum. However, we found that the museum did not complete the required time and effort reports to support \$709,991 in claimed labor and related fringe benefit costs. Instead, the museum allocated labor costs of salaried employees to the awards based on budgeted percentages or a flat amount allocated for each employee assigned to the NSF projects. We were satisfied that the budgeted and fixed labor allocations approximated actual labor costs incurred based on interviews with the employees whose salaries were charged to the awards. Nevertheless, we recommended that NSF management ensure that the museum establish a system to properly document labor costs charged to NSF-funded projects as well as other activities in a manner to comply with federal requirements. This documentation is important to ensure that charges to NSF for salaries and related expenses are appropriate.

During the audit resolution process, the museum affirmed to NSF that it had developed new timecards, established new procedures to record time worked on projects, and trained its employees to properly implement these procedures. As a result, the museum can record actual time worked to support labor costs and the related fringe benefit costs assigned to all museum activities, including federally funded projects.

## Audit Resolutions of Education Awards

### NSF Recovers \$421,852 from a Northwest Tribal Federation

In our *March 2001 Semiannual Report* (p. 15), we reported the results of an audit of a northwest tribal federation that received an NSF *Rural Systemic Initiative* award to improve the scientific and mathematical literacy of students. We questioned \$421,852 or 4.7 percent of the \$8.9 million in claimed costs as unallowable and unsupported. Specifically, we questioned \$264,830 because the federation charged salaries and related fringe benefits to the award based on budgeted amounts rather than on actual and documented payroll costs and \$88,505 because the federation claimed amounts in excess of actual incurred costs. We identified an additional \$54,442 of questioned costs because travel, materials and supplies, and subaward costs were either not related to the award or not adequately supported by source documentation. In addition, we found \$14,075 in interest income earned on NSF advanced funds that the federation should have returned to the U.S. Department of Health and Human Services (DHHS).

As a result of the audit resolution process, NSF sustained the full \$421,852 of costs questioned in the audit report. The federation agreed to adjust or offset unbilled NSF award costs for the sustained amount. In addition, the federation agreed to remit the \$14,075 in interest income to the DHHS and has assured NSF that actual

and not budgeted payroll costs will be used to determine claimed costs for future NSF awards. Also, it was reported that an additional \$3,632 in interest income was remitted to DHHS by the Federation, as a result of its improved internal controls.

## Eastern Non-Profit Consortium Agrees to Repay \$84,576

In our *March 2001 Semiannual Report* (pp. 13-14), we reported on an audit of an eastern non-profit consortium that received a \$4.3 million award to enhance teaching. Of almost \$3.1 million in costs claimed by the consortium, we questioned \$84,576 primarily due to improper salary and fringe benefits charged to the award and claimed costs not reflected in the accounting records.

NSF sustained the full \$84,576 of questioned costs. The consortium agreed to adjust its accounting records to reflect the questioned costs, and take action to address the underlying compliance issues and internal control weaknesses identified in the audit report.

## Midwestern School District Agrees to Document Labor and Participant Stipend Costs

In our March 2001 Semiannual Report (pp. 14-15), we reported on an NSF cooperative agreement to assist a Midwestern school district in reforming its K-12 mathematics and science education programs. Of the \$11 million in costs claimed by the school district, our audit did not identify any questioned costs. However, we found that the school district was not in full compliance with federal cost principles because it did not have completed time sheets or signed certifications to support labor and participant stipend costs charged to the cooperative agreement.

During the audit resolution process, the school district assured NSF that it had instituted new procedures that require supporting documentation for all salary and related expenditures charged to individual awards. NSF required the school district to ensure that changes made as a result of these new procedures comply with federal requirements.

## Contract Related Audits

In our fiscal year 2001 audit plan, we identified procurement as an area of strategic focus. While the majority of NSF's awards are either grants or cooperative

agreements, the role of procurement is not insignificant. In FY 2000, NSF procured \$336.9 million in goods and services, which represents 8.5 percent of NSF's FY 2000 budget authority. During this period, we completed several contract audits requested by the NSF Office of Contracts, Policy and Oversight to determine whether costs claimed were reasonable, allocable, and allowable.

Our audits of five contractors identified over \$1.2 million of questioned costs, 4.6 percent of the \$25.7 million claimed by the contractors over a seven-year period. The majority of the questioned costs related to indirect and consultant costs. Four of the five contractors claimed indirect costs of \$594,677 that exceeded the amounts allowable based on negotiated or audited rates. Two contractors claimed \$293,077 of consultant costs that exceeded the maximum allowable amounts.

We further identified an additional \$1.4 million of costs claimed by three contractors as unresolved costs, which are costs for which we could not make a determination as to their reasonableness, allowability, and allocability at the time of our audit. We classified the \$1.4 million as unresolved costs because actual indirect cost rates or other standard billing rates for certain years had not been determined by the cognizant federal agency at the time of our audit. Therefore, we could not determine whether the three contractors had over-billed NSF for indirect and other costs for those years.

We also found that some contractors needed to improve their compliance with NSF award conditions and federal regulations and strengthen internal controls. Specifically, we found that three of the five contractors had instances of material non-compliance with federal regulations and internal control weaknesses.

The complex nature of government procurement in general suggests that it is an administrative risk for the agency. The results of our current contract audits and the three audits we completed during the last semiannual period indicate that NSF needs to maintain a continuing focus on overseeing its contract awards.

A summary of the results of each of the five contract audits is provided below. In addition, we have included a summary of two contract audits that we reported on in our last semiannual report that NSF management resolved during this semiannual period.

## Mid-Atlantic For-Profit Contractor Has \$187,278 of Questioned Costs and Material Deficiencies

At the request of the NSF Division of Contracts, Policy and Oversight, we audited 10 task orders of a \$6.2 million NSF contract issued to a mid-atlantic for-

profit company, which provided support services to various NSF programs and divisions. Of the \$2.1 million total costs claimed under these task orders, we questioned \$187,278 consisting of the following: \$60,127 for unaccounted for equipment and software; \$30,548 for temporary staff, printing, and training costs which were not authorized by the task orders; \$41,802 for unsupported costs; \$4,907 for consultant and travel costs in excess of federal maximum rates; and, \$49,894 for indirect costs, including \$24,639 for fringe benefits and indirect costs that were in excess of allowable amounts and \$25,255 for general and administrative costs related to the questioned direct costs.

We believe material weaknesses in the contractor's controls for administering its NSF awards and ensuring compliance with federal regulation contributed to the questioned cost findings. In general, we found a lack of overall contract management and compliance with contract reporting requirements. Specifically, we found that the contractor: failed to obtain written modifications for task order changes; billed NSF for amounts that were not reported in the general ledger; did not reconcile its accounts receivable history with vouchers it submitted to NSF for payment; did not completely document its voucher file; did not maintain records identifying all government-acquired equipment and software purchased under the task orders and therefore could not support the physical existence of assets; and failed to maintain adequate accounting records to support the costs claimed for proposal processing. Without good contractor management controls, NSF has limited assurances that it is getting the goods and services it contracts for and that it is not paying costs that are unallowable based on the contract provisions.

In addition to the questioned costs, we found that actual costs incurred on nine of the ten task orders exceeded budgeted amounts by \$122,713. Although these costs were not charged to the NSF contract, it is in the best interest of the contractor, as a for-profit entity, to have adequate systems to prevent the occurrence of such cost overruns.

The contractor did not agree with many of our findings. We made specific recommendations to NSF requiring the contractor to address each of the questioned cost items, instances of non-compliance, and internal control weaknesses. We forwarded this report to NSF's Division of Contracts, Policy and Oversight for resolution.

## Mid-Atlantic Education-Consulting Firm Claimed \$677,556 of Questioned Costs

We audited three NSF contracts awarded to a mid-Atlantic education-consulting firm that provides technical assistance and consultation to school systems, education

associations, governmental agencies, and institutions of higher education. The contracts provided technical assistance to institutions in planning and implementing NSF's Model Institutions for Excellence program and technical support related to the rural and urban systemic initiatives funded by NSF's Directorate for Education and Human Resources.

The contractor claimed direct costs and fees totaling \$6,403,808, of which we questioned 11 percent or \$677,556. Included in the questioned costs were claimed indirect costs of \$305,208 in excess of the actual allowable incurred costs, consultant costs of \$276,926 that were not approved by NSF's Contracting Officer, and labor costs of \$41,741 that were not based on actual hourly rates. We also found that the contractor claimed other direct costs of \$5,905 that were not supported by its accounting records.

We attributed most of these questioned costs to material deficiencies in the contractor's procedures for administering its NSF awards. The contractor failed to submit proposed final indirect cost rates to NSF for fiscal years 1994, 1996, 1997, and 1998 as required by federal regulations and the contract provisions. In addition, the contractor lacked adequate procedures to ensure that unallowable indirect expenses are not included in its indirect cost rate charges. As a result, our review of the contractor's pools of indirect costs for those four fiscal years identified numerous unallowable costs in the pools. After eliminating the unallowable costs from the pools and calculating the actual indirect cost rates, we found that the contractor had claimed \$305,208 in excess indirect costs. We also classified \$191,484 of costs claimed under one contract as unresolved, because at the time of our audit the contractor had not submitted its FY 1999 proposed indirect cost rates to NSF and was unable to make the indirect cost data available for our review.

The contractor lacked procedures for preparing invoices directly from its accounting system, resulting in it claiming \$5,905 of other direct costs that could not be traced to its accounting records. The contractor also did not have adequate timekeeping procedures in place. Timesheets sometimes lacked the appropriate authorizing signatures and changes were not initialed. Although this deficiency did not result in questioned costs, sound internal controls dictate that timesheets be properly signed and changes initialed given the significant labor effort amounts claimed under its contracts.

We recommended that NSF direct the contractor to submit its proposed indirect cost rates for FY 1999 and future years, and limit claimed costs to costs allowable under the federal regulations and the contracts' provisions. We also recommended that NSF direct the contractor to institute policies and procedures to identify unallowable indirect costs in the accounting system, prepare invoices directly from the accounting system, and require employees and supervisors to sign all timesheets and initial all timesheet changes.

The contractor disagreed with some of our findings. We have forwarded this report to NSF's Division of Contracts, Policy, and Oversight for resolution.

## Midwestern For-Profit Contractor Claims Excessive Indirect Costs

We audited three NSF contracts issued to a midwestern for-profit corporation to conduct surveys of scientific and engineering research facilities for NSF's Division of Science Resources Studies. Of \$3.3 million in costs claimed under the contracts, we questioned \$337,589 or approximately ten percent of the audited costs. We found a material instance of noncompliance with federal regulations and material deficiencies in the contractor's internal control structure to have caused the questioned costs: the contractor did not maintain invoices and other detailed receipts to adequately explain and support expenses in its indirect cost pools for such costs as accounting, consulting, meals, entertainment, and lodging expenses as required by federal regulations. Consequently, we eliminated \$357,673 of unsupported expenses from indirect cost pools, which had the effect of reducing the indirect cost rates. These lower indirect cost rates, coupled with our finding that the contractor also claimed costs using rates which exceeded the maximum indirect cost rates allowed in the contracts, resulted in questioned indirect costs and related fixed fees of \$279,942.

We also found that the contractor's accounting system did not record all costs that were applicable to the NSF contracts and that the amount of costs recorded did not always agree with costs reported to NSF. In addition, the contractor did not monitor subcontract costs to ensure that award limits were not exceeded and did not require detailed receipts and invoices prior to the payment of expenses. As a result of these deficiencies in internal controls, we questioned \$51,849 in costs claimed for labor, subcontract, other, and related indirect costs in excess of actual costs recorded in the accounting records. Also, \$5,798 of subcontract and related indirect costs were questioned because the costs exceeded the amount of the subcontract award.

We recommended that NSF require the contractor to: (1) return \$337,589 of questioned costs, (2) review expenditures included in the indirect cost pools for allowability under federal regulations, (3) institute a procedure to maintain required detailed receipts and invoices to support costs incurred, and (4) exercise greater care in the recording, reporting, and reconciling costs related to NSF contracts, which includes tracking subcontract costs so that award amounts are not exceeded.

The contractor agreed with most of our findings and recommendations. We have forwarded this report to NSF's Division of Contracts, Policy, and Oversight for audit resolution.

## Mid-Atlantic Contractor Had \$862,318 of Unresolved Costs

We conducted an audit of a three-year NSF contract awarded in 1996 to a mid-atlantic employee-owned research firm. The contractor provided technical assistance and communications support to several program offices in NSF's Directorate for Education and Human Resources.

Of the \$8.4 million costs claimed by the contractor, we classified \$611,460 of indirect costs and \$250,858 of computing and copying charges as unresolved costs. We found at the time of our audit that the contractor's cognizant federal audit agency, Defense Contract Audit Agency (DCAA), had not negotiated either final indirect cost rates for fiscal years 1997 through 1999 or standard billing rates for computing and copying charges for fiscal years 1996 through 1999.

We also questioned \$22,240 of costs claimed by the contractor which were unallowable based on applicable federal cost principles; \$15,267 of indirect costs claimed which were in excess of allowable amounts; \$608 of direct costs claimed for alcohol and bartender services; and, \$6,365 of direct costs claimed by the contractor for unallowable subcontract costs.

We referred the audit findings to NSF's Division of Contracts, Policy, and Oversight for resolution.

## Mid-Atlantic Contractor Did Not Comply With Federal Regulations

We conducted an audit of two contracts awarded to a mid-atlantic firm – the first to operate NSF's central computer facility, and the second to provide software support, system management and administration, and user support for NSF's electronic mail and UNIX operating systems. We examined \$5.4 million of costs claimed under these two contracts. We also audited the indirect cost rates for the NSF contracts for fiscal years 1993, 1994, and 1996.

We found that the contractor's cognizant federal agency, DCAA, had not yet negotiated the contractor's final indirect cost rates for fiscal years 1998 through 2000. As a result, we reported \$418,588 of claimed indirect costs for those years as unresolved costs.

We questioned \$4,774 claimed for consultant costs because the contractor did not provide supporting documentation. We recommended that NSF disallow these costs. We also recommended that NSF ensure that the contractor has appropriate



policies and procedures for accounting for costs and that it maintains adequate documentation to support claimed costs.

The contractor did not respond to our findings. We have forwarded these matters to NSF's Division of Contracts, Policy, and Oversight for resolution.

## Audit Resolutions of Contract Awards

### An Eastern For-Profit Corporation Must Repay NSF \$5,382

In our *March 2001 Semiannual Report* (pp. 18-19), we reported the results of an audit of two contracts awarded to an eastern for-profit corporation to conduct data processing services and database maintenance for NSF. Out of a total of \$2.9 million costs claimed by the contractor, we questioned \$54,478. The questioned costs included \$40,791 in direct labor and related indirect costs, \$8,603 of other costs claimed for which the contractor could not provide supporting documentation and \$5,084 in claimed general and administrative costs which were in excess of the contractor's actual costs. To improve its compliance with the provisions of federal contract awards and internal controls, we recommended that the contractor improve its accounting and internal controls related to classifying and recording costs in correct expense categories.

In resolution of the reported \$54,478 questioned cost findings, NSF allowed \$49,096 and sustained only \$5,382 of questioned costs. NSF allowed \$40,791 in direct labor and related indirect costs based on an affidavit signed by the company's president affirming the correctness of the labor charges that the contractor was unable to support with adequate payroll documentation. NSF also allowed \$7,004 of the \$8,603 other direct costs questioned based on supporting documentation provided by the contractor during the audit resolution process, but sustained the remaining \$1,301 which was not supported by adequate documentation. Of the \$5,084 excess general and administrative claimed by the contractor, the contractor provided closeout invoices supporting only \$1,301 of the questioned amount and therefore the remaining \$3,783 was sustained.

NSF indicated that the few isolated cases of misclassified costs in reporting expenses did not indicate systemic problems in the contractor's internal controls as we had determined.

## NSF Software Support Service Contractor Addressed Audit Findings

In our *March 2001 Semiannual Report* (pp. 17-18), we reported the results of an audit on three task orders issued to a midwestern for-profit corporation that provided for systems development and computer support services to NSF. Of \$8.2 million in claimed costs, we questioned \$14,242 because the contractor was not able to provide supporting documentation for labor costs charged to NSF. In addition, we reported that the contractor did not submit to DCAA indirect cost rate proposals for fiscal years 1997 through 2000. These audits and negotiations of the indirect cost rate proposals by DCAA could change the approximately \$2 million of indirect costs that the contractor claimed on the NSF task orders. Accordingly, we recommended that the contractor submit indirect cost rate proposals to DCAA for audit and negotiation and adjust its claims to NSF if the actual rates are less than the provisional rates the contractor used to bill indirect costs to the task orders.

During NSF's resolution of the audit findings, the contractor located and provided to NSF the missing time records to support \$14,242 of the questioned labor costs. Also, it was determined that DCAA was not negotiating indirect cost rates for the contractor's location where the NSF work was being performed since NSF was the only federally funded activity at this location. Therefore, at NSF's request the contractor submitted its indirect cost proposals for fiscal years 1997 to 2000 to the NSF Cost Analysis and Audit Resolution Branch for its review and negotiation of final indirect cost rates. Upon completion of NSF's negotiation of final indirect cost rates, any indirect costs charged to the contract in excess of the amount determined to be allowable will be collected from the contractor.

## Cost Sharing

### Audits Find Recurring Internal Control Weaknesses In Accounting for and Reporting on Cost Sharing

In our March 2001 Semiannual Report, we identified cost-sharing as one of NSF's top ten management challenges for NSF (p. 5), and discussed our continuing efforts to monitor awardees' ability to meet their cost-sharing requirements (pp. 7-10). During this reporting period, we completed, or NSF resolved, additional audits at seven institutions involving \$12.9 million in cost sharing. We also completed an audit of an Engineering Research Center (ERC) in which we found that the Center claimed \$9.9 million of cash and in-kind support from industry sources. Although the contributions to the Center did not meet the technical definition of cost-sharing, they raised some of the same accounting, monitoring, and reporting issues.

The audits of cost sharing at the seven institutions again identified recurring cost-sharing, compliance, and internal control weaknesses. At three of the institutions that promised to provide \$4,239,560 million in cost-sharing, the accounting system did not identify cost-sharing contributions. In addition, six of the institutions, representing \$11 million in cost sharing obligations, lacked written policies and procedures for certifications, did not submit annual cost-sharing certifications required by NSF, and/or based the certifications on budgeted rather than actual, amounts. Two institutions lacked procedures for valuing in-kind cost sharing or claimed costs that were not allowable. Finally, at three institutions some or all of NSF research and development (R&D) awards were not audited in an annual federal audit, required under the Single Audit Act (the OMB Circular A-133 Audit) in part because awardees had not identified the NSF awards as R&D awards.

### Common Cost Sharing Problems in Seven Audits

| Awardee               | Promised Cost Sharing | Accounting System Did Not Identify Cost-Sharing Contributions | Questioned Costs | Cost-Sharing Certification Problems | Valuation of In-Kind Cost-Sharing Issue | NSF Awards Not in Federal R&D Cluster For A-133 Audit |
|-----------------------|-----------------------|---|------------------|-------------------------------------|---|---|
| University Foundation | \$5,532,778           |   | X                | X                                   |   | X   |
| University Foundation | 2,532,580             | X   | X                | X                                   |   | X   |
| University            | 1,902,040             |   | X                |                                     |   |   |
| State government      | 1,134,648             | X   |                  | X                                   |   |   |
| University            | 1,124,379             |   | X                | X                                   | X                                       |   |
| University            | 572,332               | X   | X                | X                                   |   |   |
| University Foundation | 112,141               |   |                  | X                                   | X                                       | X   |
| Total                 | \$12,910,898          | 3   | 5                | 6                                   | 2                                       | 3   |

Since cost-sharing often represents significant contributions to awards, the failure to keep proper accounts can have serious consequences. In these cases, the lack of identification of cost-sharing contributions in the accounting system, which is required by federal and NSF guidelines, impeded the institution's ability to ensure that it was meeting its cost-sharing obligation, and decreased NSF's ability to monitor claimed

cost-sharing. The failure to certify actual cost-sharing expenses in annual progress reports, as required by NSF, meant that NSF did not know the actual amount of cost-sharing that had been provided and could not administer those awards effectively. Finally, the exclusion of NSF's awards from the federal R&D cluster in federal audits (the A-133 audits) meant that NSF's affected awards were less likely to be audited. It also indicated that NSF could not rely on the A-133 audits, which are intended to obviate the need for individual agencies to audit award recipients separately, for relevant and reliable information about cost-sharing problems on NSF awards.

These problems not only undermine NSF's ability to oversee an award, but to the extent that NSF overpays its share of funding because of inaccurate accounting, opportunities for the agency to fund other awards are curtailed. For example, valuation of in-kind cost-sharing that is not consistent with federal cost principles and results in disallowed cost-sharing, overstates the actual amount of cost-sharing provided by the awardee and understates NSF's percentage contribution to the award. In such cases, the agency pays more than its fair share for research. Ultimately, this represents an opportunity cost to NSF since the money could have been used to fund more awards.

Based on the findings contained in the seven audits, we recommended that awardees improve their internal controls for valuing, recording, documenting, and monitoring cost-sharing to ensure that any future contributions comply with award terms and conditions. In addition, we recommended that award recipients establish written policies and procedures for submitting annual and final cost-sharing certifications to NSF. We also recommended that award recipients correctly identify any NSF R&D award so that its chances of being audited as part of a federal R&D cluster are improved.

In our next semiannual reporting period, we plan to complete audits of cost sharing at six more institutions. We anticipate also preparing a summary of the overall results of those cost sharing reviews as a basis to assess the implications for NSF's cost-sharing policies. In addition, we plan to include an evaluation of cost sharing, as applicable, in all of our future audits of grantee institutions.

## Cost-Sharing at Three Campuses in a Western University System Reveal Internal Control and Compliance Findings

As we noted in our *March 2001 Semiannual Report* (p. 8), we initiated an overall survey at the university level, and individual audits of cost sharing at several campuses of a western state university. We discuss below the results of three of the five cost-sharing audits we completed during this reporting period at campuses in this university system.

The university's foundation at one campus met its \$112,141 cost-sharing obligation, but needed to update its cost-sharing policies and procedures to comply with federal requirements. Given its limited federal awards, the Foundation believed that its cost-sharing policies and procedures were adequate. However, anticipating an increase in federal awards, it recognized a need to improve its policies and procedures. We also found that, contrary to NSF requirements, the foundation delegated responsibility for monitoring awards to Principal Investigators, who did not always have the time or knowledge of the complicated management and accounting requirements for federal grants. As a result NSF had less assurance that its awards were being administered in accordance with grant conditions. We recommended that the university foundation update its cost-sharing policies and procedures, and assume primary responsibility for monitoring all federal awards. The foundation agreed with our recommendations.

At the second campus, NSF provided \$1.3 million for the second phase of a high-performance network and required the campus to provide \$2.5 million of cost sharing. We questioned \$1,264,361 of that cost-sharing because the campus incurred \$1,132,446 after the expiration date of the award and could not provide time and effort reports in compliance with federal requirements to support \$131,915 in claimed faculty release time. As a result of these unallowable and unsupported cost-sharing expenses, we recommended the campus reimburse NSF \$90,602, for the amount of funds NSF contributed to the project above its pro-rata share. We also found weaknesses in the campus's systems for monitoring, tracking, and accounting for its cost-sharing obligation. Specifically, because of a misunderstanding of federal cost-sharing requirements, the campus did not segregate NSF-funded costs from cost-sharing or non-federal costs and, therefore, could not easily or readily determine the actual amount of cost-sharing it had or needed to provide under the award agreement.

The second campus also did not monitor cost sharing promised by three other campuses, because it believed that cost sharing provided by other sources would be sufficient to meet its obligation. As a result, one campus did not provide any support for promised cost sharing, which potentially impacted the scope of work that NSF intended with this award. In addition, the campus was unaware of NSF's requirements to provide final cost-sharing reports, certified by the authorizing official. Consequently, NSF did not know that there was a cost-sharing shortfall. We recommended that prior to any new award, NSF should ensure that the campus establishes written policies and procedures for its financial accounting system, monitoring of subrecipients, and for submitting annual and final cost-sharing certifications to NSF. The campus agreed with some but not all of our findings, and we have forwarded these matters to NSF's Division of Contracts, Policy and Oversight for resolution.

At a third campus NSF funded 32 awards totaling \$11.3 million and required the campus provide \$5.5 million of cost sharing. We questioned \$6,759 of cost sharing on four awards because the institution incurred the cost sharing after the

award's expiration date without obtaining the required no-cost extension from NSF. Also, while the university foundation did submit annual reports to NSF, the information in the reports was either incomplete or not certified by the institution's authorizing official. Without this information, NSF could not determine whether the institution was making satisfactory progress in meeting its cost-sharing obligations. We recommended that the institution monitor required cost-sharing under its NSF awards, immediately notify NSF of any shortfalls, and certify actual cost-sharing expenditures annually to NSF. The foundation concurred with these recommendations. We have forwarded the audit report to NSF's Division of Contracts, Policy and Oversight for resolution.

## Cost-Sharing Audits at Four Geographically Diverse Colleges and Universities Indicate Procedural and Policy Weaknesses

We stated in the *March 2001 Semiannual Report* that in order to assess the risk of cost-sharing nationwide, we had selected for audit eight educational institutions that varied in size, were geographically diverse, and had received NSF awards requiring cost sharing of \$500,000 or more. We reported on two of those audits in that semiannual report (p. 9), and can now report on two more.

NSF funded two awards totaling \$1.2 million to a large southern university, which promised \$1.1 million of cost-sharing. The university is meeting its cost-sharing commitment, although it claimed \$17,029 of unallowable cost-sharing costs. We also found that the university did not comply with NSF requirements to certify annually cost-sharing amounts greater than \$500,000, because its staff was unaware of the requirement or did not receive information in time to submit the certifications. We recommended that the university strengthen its policies and procedures to ensure that all awards requiring cost-sharing certifications are identified, that required cost-sharing certifications are submitted to NSF, and that only allowable costs are claimed. The university agreed with these recommendations.

In the second cost-sharing audit of another large university, NSF awarded \$3.1 million for three awards and required \$1.9 million of promised cost-sharing. We found that the university is meeting its cost-sharing commitment on two of the three awards. However, while the university had an adequate system of controls for accounting for and reporting on cost-sharing obligations, we identified two areas needing improvement. First, the university did not adequately oversee or review cost-sharing information provided by the department level staff. As a result, one of the departments claimed cost-sharing expenditures of \$442,895 which included unallowable labor and other direct costs of \$331,329.

We also found that the university purged supporting cost-sharing documentation for one award before the end of the required retention period. As a result, it is difficult to ensure that the award funds were being consumed at a rate commensurate with the accomplishment of programmatic goals of the award. We recommended that NSF direct the university to improve its procedures for monitoring department-level grant administration to ensure that cost-sharing expenses are supported and in accordance with federal cost principles, and to revise its record retention policies to ensure that the university maintains original source documentation in compliance with federal and NSF requirements. The university did not respond to these recommendations, and we have forwarded the audit report to NSF's Division of Contracts, Policy and Oversight for resolution.

## Resolution of Two Cost-Sharing Audits

During this reporting period NSF management resolved two audits involving cost sharing reported in our *March 2001 Semiannual Report* (p. 9). In the first audit, at a western state college, we identified \$603,714 of unallowable cost-sharing claims because of inadequate controls to manage, account for and report cost-sharing obligations. We recommended that the college reimburse NSF \$20,423 for the costs that NSF incurred above its pro-rata share when the college failed to meet its cost-sharing requirement. During the resolution of the audit, NSF learned that although the original technology funded by the college and claimed as cost sharing failed to operate, the college substituted another technology that was equally satisfactory to NSF. Accordingly, NSF management determined that the college met its cost-sharing requirement.

In a second audit of a northeast state education department, we identified several instances of non-compliance with federal and NSF award requirements. In reaching resolution on this audit, the department stated that it has developed policies and procedures to address weaknesses in its systems for budgeting, tracking, and reporting of cost-sharing amounts as well as to verify that employee time claimed as cost sharing was actually for work done on NSF awards. Because the department has historically promised to make changes that subsequent audits determined were not implemented, NSF recommended a follow-up audit within six months and planned to monitor the department's compliance with federal and NSF award requirements.

## Northeast Engineering Research Center (ERC) Overstated Industry Support by \$6 Million

NSF established the ERC program in 1985 to address engineering systems issues and to educate students using a cross-disciplinary, team approach. NSF requires centers to obtain substantial financial support from industry, including cash and in-kind donations to support their research programs. The centers use industrial membership programs as the primary mechanism for obtaining this support. NSF also requires that centers submit an annual report describing the status of their research and financial activities, including industrial support. Beginning in 1998, to clarify industrial membership reporting, NSF required that ERC institutions verify in annual reports that the industrial member firms are current members, as defined by a membership agreement. We conducted an audit of industrial support claimed by one northeastern university ERC. The audit resulted in reports identifying concerns at both the university and at NSF.

Our review found that for the four-year period ending August 31, 1998, the center's annual reports to NSF significantly overstated the amount of direct cash and in-kind support it had received from industry sources. Of the \$9.9 million of direct cash and in-kind support reported, we accepted \$3.8 million, or 38 percent. Of the remaining \$6 million, the center was unable to provide supporting documentation, counted the same support twice, or claimed support, such as bench fees and fellowships paid directly to students rather than to the center, which could not otherwise be defined as direct cash or in-kind support. Additionally, of the 32 reported member firms, we were only able to verify membership agreements with nine (28 percent). Finally, the center did not report to NSF the existence of a \$1.9 million cash surplus it had accumulated from unspent industrial member contributions and the investment income earned on the surplus.

NSF utilizes data about the level of industrial support and the active participation of industrial scientists in the ERC's planning, education, and research activities in its annual performance review of center operations. Based on this data along with an annual site visit, NSF determines the level of future NSF support it will provide to the center. In particular, NSF scrutinizes direct cash support to the center, because the program's objective is for the center to become self-sufficient after NSF funding expires. Because the center overstated its industrial memberships and funding amounts in the annual reports, NSF did not have accurate information when it was making its annual funding decision. Despite the importance of this information to NSF's annual performance review process, the university did not independently verify the validity, accuracy, or completeness of the annual reports before providing them to NSF.



We recommended that the university (1) develop policies for adequately accounting for and documenting in-kind donations made directly to the center, (2) independently verify that the annual report is valid, accurate, and complete in accordance with NSF's award and annual reporting requirements, (3) independently verify that all reported industrial members are members as defined by written membership agreements, and (4) report annually to NSF the dollar amount of any cash surplus accumulated from unspent industrial funds.

The university stated in its response to our draft report that it has implemented the recommendation to independently verify that the annual report is valid, accurate, and complete, and agreed in principle to the other recommendations, if these requirements are applied by NSF to all ERC institutions. However, the university did not agree that most of the specific industrial amounts it reported to us during the audit were not in compliance with NSF's reporting guidelines. Further, the university believes that it is appropriate to continue to report the \$6 million in questioned industrial support to NSF. We disagreed with most of the university's responses to the claimed amounts for cash or in-kind support, and we have forwarded these matters to NSF's Division of Contracts, Policy, and Oversight for resolution.

In addition to findings and recommendations specific to the Center, we found that NSF needs to improve its annual site review process and its data reporting guidelines to help prevent such reporting problems by other ERCs in the future.

We recommended that NSF develop a written protocol to use in reviewing performance data during site visits, including reported industrial financial support, and that it include a member with business management experience on the site teams. Further, we recommended that NSF revise its data reporting guidelines to limit industrial financial reporting to only those funds that either are specifically identifiable with an ERC or that can be assigned to an ERC with a high degree of accuracy.

NSF agreed with our recommendations. The agency will assist ERCs in preparing the annual reports and associated performance data, and will conduct education sessions and review annual performance data before each annual site visit. NSF will also facilitate ERC directors' understanding of NSF reporting requirements for grants and contracts and require that ERCs report only research projects specifically cited in an annual report, in which the logical connection to a strategic plan is explained.

## Polar Program Reviews

The Office of Polar Programs oversees the U.S. Polar Research Programs, as well as the U.S. Antarctic Logistical Support Activities. Its activities support multidisciplinary research in the Arctic and Antarctic regions. During the past six

months, an audit report was issued on Antarctic logistical support and a prior audit was resolved.

## Systems for Monitoring Antarctic Flight Support Costs Are Effective

An audit of several specific operational issues related to the contracting of flight support for the U. S. Antarctic Program (USAP) indicates that the systems are functioning effectively. A primary focus was the adequacy of systems, policies and procedures used to track and report the usage of aircraft supply and the allocation of charges for contractor-performed aircraft maintenance, the cost of which is shared between NSF's Office of Polar Programs and other organizations. The report states that there is substantial compliance with the systems in place, but makes a number of recommendations aimed at better safeguarding the inventory and improving the accuracy with which aircraft supply expenses are allocated.

In addition, the report examines the USAP's agreement with Air Mobility Command to transport passengers and cargo between Christchurch, New Zealand, and McMurdo for a fixed hourly charge intended to cover all costs associated with operating the aircraft. We found that OPP is being charged separately for some services, such as landing and departure fees, that should be covered by the hourly charge it already pays. We estimate that the overcharges total approximately \$50,000 per year. OPP agreed with most recommendations.

## Western For-Profit Entity Must Adjust NSF Award by \$171,792

In our *March 2001 Semiannual Report* (p. 11), we reported that a western for-profit contractor had been succeeded by another contractor to provide logistics, operations, engineering, and construction support for the USAP. Our audit of the former contractor disclosed that it had charged NSF for fringe benefits that were in excess of actual costs. In addition, problems were found with the contractor's accounting for commitments and obligations at the close of the contract period. Finally, the contractor had not resolved issues with NSF concerning payments of interest and penalty on unreported state sales tax and underspent funds for information infrastructure.

During the audit resolution process, the contractor provided evidence that it had credited the NSF contract for \$79,467 in overcharges for fringe benefit costs.

Another \$92,325 was credited to the contract for legal costs that NSF disallowed. In total, \$171,792 in credit adjustments were made to the NSF contract as a result of this audit. The contractor satisfied NSF that the system it and its successor used to transfer commitments and obligations at the close of the contract was adequate. The contractor also provided evidence that it had settled a liability with the state resulting from interest and penalty on unreported sales tax liabilities. In addition, the contractor returned unspent funds intended for the development of information infrastructure to NSF.

## Other Audit Activities

The OIG was involved in several other audit-related activities during this semiannual period:

### Peer Review

In July and August, we conducted a peer review of the National Railroad Passenger Corporation (Amtrak), another Designated Federal Entity OIG. The Inspector General Act of 1978, as amended, requires that the audit function of each OIG must receive an independent review by another OIG every three years. Such peer reviews help ensure that OIGs are in compliance with auditing standards established by the Comptroller General of the United States. A primary objective of the peer review is to ensure that audit organizations establish an appropriate system of internal quality control over its audits.

We found that the system of quality control for the audit function of the Amtrak OIG, in effect for the year ended March 31, 2001, was designed in accordance with the quality standards established by the PCIE. The system of quality control was functioning effectively to provide the OIG with reasonable assurance of conforming with professional standards in the conduct of its audits. Our letter of comments recommended two minor improvements.

## Certificate of Excellence in Accountability Reporting

Our audit staff participated in a joint project between the Association of Government Accountants (AGA) and the Chief Financial Officers Council to recognize federal entities that produce exceptional accountability reports. These reports are prepared by federal agencies and include the agency financial statements,

auditors' reports, and other financial reports required by statute. The Certificate of Excellence in Accountability Reporting Program is open to all federal departments and agencies as well as any organizational unit that resides within a department or agency. As part of this effort, we evaluated an agency accountability report using criteria prepared by AGA.

## A-133 Related Reviews

OMB Circular A-133, issued pursuant to the Single Audit Act of 1984, as amended, sets forth standards for attaining consistency and uniformity among federal agencies for the audit of state and local governments, educational institutions, and nonprofit organizations that receive federal awards. Reports prepared by independent auditors in accordance with this circular are referred to as A-133 audits.

Our office receives and reviews A-133 audit reports through the Federal Audit Clearinghouse for institutions expending NSF funds. During this reporting period, we reviewed 130 A-133 reports accounting for NSF expenditures approximating \$1.2 billion for fiscal years 1997 through 2000. After our review, 80 reports involving questioned costs, internal control weaknesses, and/or non-compliance with federal laws and regulations were forwarded to NSF's Division of Contracts, Policy, and Oversight to either resolve audit findings involving agency funds or inform them of internal control weaknesses among NSF awardees.

In three reports, the auditors questioned \$236,471 of NSF-funded costs related to employee fringe benefits, as well as indirect and other types of costs. In addition, 67 institutions had internal control and compliance findings related to reporting, cash management, allowable costs, equipment, inventory, sub-recipient monitoring, procurement, suspension and debarment.

Our office also continued to examine Management Letters, which report internal control weaknesses that are generally less significant than those reported in the A-133 report, but require management's attention. Our review of 36 Management Letters this reporting period found that the auditors identified issues related to the awardee institutions' business continuity plans, information technology, and policies and procedures.

## Solicitation of CPA Contracts

As noted in previous semiannual reports, the OIG relies on independent public accounting firms to assist in carrying out our audit responsibilities. During this reporting period, we awarded eight task order contracts under the General Services

Administration's Federal Supply Schedule. These contracts will enable us to meet the requirement of the Chief Financial Officers Act for an annual audit of NSF's financial statements, as well as provide audits of grants, contracts, and cooperative agreements awarded by NSF to various research and educational institutions and organizations. Purchasing agreements were awarded to seven firms for audits of NSF's financial statements and awards for up to a five year period.

## Internal and External Requests for OIG Comments

During the last six months, the OIG responded to various inquiries and requests from external organizations, including the Congress, General Accounting Office, Financial Accounting Standards Advisory Board, and Office of Management and Budget. Examples include: questions from congressional committees and GAO concerning NSF's efforts to manage improper payments; a request from the Congress to identify NSF's top 10 performance measures; comments on an exposure draft to the GAO Government Auditing Standards or other guidance provided by OMB, Treasury, the Joint Financial Management Improvement Program, or the President's Council on Integrity and Efficiency.

# Investigations

In this semiannual, we present an overview of significant investigative activities, including cases, special projects, and interactions with this agency and others. Our efforts are focused on improving and enhancing the integrity of NSF's systems and processes, and helping ensure that NSF conducts business with responsible individuals and entities. We investigate allegations of wrongdoing involving individuals and organizations that receive funds from, submit proposals to, review proposals for, conduct business with, or work for, NSF. If we determine that wrongdoing occurred, we assess the seriousness of the matter and either recommend administrative action by NSF



Joseph Pinto, an OIG Investigator, assisted in the recovery efforts at the Pentagon.

management or refer the case to the Department of Justice or other prosecutorial authorities for criminal prosecution or civil litigation.

Information for OIG investigations comes from many sources. NSF officials, grant recipients, private citizens, and staff from government agencies often refer tips or other information. Another source is our Hotline, a toll free number that provides anonymity and direct access to OIG staff. We may also be contacted by e-mail at [oig@nsf.gov](mailto:oig@nsf.gov) to notify our office of any wrongdoing related to NSF processes, funds, or projects.

## HIGHLIGHTS

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## Administrative Investigations

### Findings by the Deputy Director

#### NSF Concludes Computer Scientist Committed Plagiarism

In our September 2000 Semiannual Report (page 25), we discussed the case of a computer scientist at an Illinois public institution who plagiarized material from a conference proceedings into an NSF proposal. Consistent with our recommendation, NSF's Deputy Director issued a finding of misconduct in science. NSF determined that the actions of the institution were adequate to protect the Federal Government's interests. The actions included a letter of reprimand, a one-year suspension from applying for external grants, withdrawal of all pending proposals, and ethics training, followed by a one-year requirement that the subject obtain approval of his department chair on new proposals. NSF also required the computer scientist to submit written certifications and assurances that any new documents submitted to NSF over a one-year period did not contain plagiarized material.

### Administrative Investigations Forwarded to the Deputy Director

#### Plagiarized Material in a Small Business Innovation Research Proposal

We received an allegation that a scientist employed by a small business in Ohio plagiarized material into a proposal he submitted to NSF under the Small Business Innovation Research (SBIR) program. We asked the scientist for an explanation of why text and figures in his proposal were substantially identical to those in six source documents. In response, he stated that five of the documents were published by members of his former research group. He said that when he prepared the proposal, shortly after leaving the group, he felt as though he was still part of the group. He characterized his failure to properly cite the sixth document as careless.

The president of the small company provided us with copies of two other proposals submitted by the scientist to other Federal agencies within 2 months of the submission of the scientist's NSF proposal. We observed that the scientist copied

some of the same plagiarized text contained in his NSF proposal into these two proposals without attribution. We also noted that several figures in the two later proposals, which had been properly attributed in his NSF proposal, were not cited appropriately.

In our view, the subject's argument that he could use published material from his former research group without attribution is inconsistent with the ethical standards of the research community. We recommended that NSF find the scientist committed misconduct in science, send him a letter of reprimand, and require for a period of 2 years that he submit certifications and assurances to OIG that any documents he submits to NSF contain no plagiarized material.

## Failure to Comply with Certification Requirements

In our September 1997 (pp. 36-37) and March 1999 (p. 19) Semiannual Reports, we described a case in which the Deputy Director found that the subject committed misconduct in science when he seriously misrepresented his research progress and capabilities in proposals submitted to NSF. The Deputy Director required the subject to provide detailed certifications and assurances to OIG for 2 years starting in April 1999, in connection with any proposal or report submitted to NSF.

In the course of reviewing compliance with these requirements, we learned that the subject failed to provide certifications or assurances for a proposal he submitted in August 1999, for a request for Research Experiences for Undergraduates funding submitted in March 2000, and for a research proposal submitted in July 2000. In response to our request for explanation, the subject stated his belief that the certifications and assurances were only required for full research proposals, and then only after they were approved for funding. He also complained that nobody at NSF reminded him to provide the certifications and assurances.

We believe that the Deputy Director's letter informing the subject of the certification / assurance requirements was unambiguous. The most important purpose of a certification / assurance requirement is to compel the subject to exercise greater deliberation and care in the preparation of his proposals, and then to engage either his department chair or dean to evaluate the veracity of the substance of those



proposals. These actions can only be meaningful if they occur before the proposals are submitted. Moreover, NSF staff were not in a position to provide reminders: certifications and assurances are sent directly to OIG, a process that helps ensure that past findings of misconduct are separate from NSF's merit review process.

We concluded that the subject's repeated disregard of the certification / assurance requirement was—like the misconduct that precipitated its imposition—knowing and deliberate. We believe that the imposition of administrative actions less than debarment in serious misconduct cases, such as this one, can only be effective if they are enforced by the imposition of significant adverse consequences when they are breached. Accordingly, we recommended that NSF debar the subject for a period of 2 years.

## Significant Administrative Cases

### Working with NSF to Resolve Animal Care and Use Issues

We received an allegation that a small college in Wisconsin violated animal care and use regulations in the course of carrying out research under NSF awards. The college lacked a Multiple Project Assurance (MPA) or an Institutional Animal Care and Use Committee (IACUC), and had arranged for a nearby university to review and approve its animal care and use protocols. However, we found that the college's administration did not have a clear understanding of the IACUC approval and oversight process or Federal regulations governing animal care and use in research, resulting in several minor violations of the vertebrate animal care and use regulations. (There was no evidence that the violations resulted in harm to the animals.)

This situation was brought to the attention of our office by the NSF program director of the managing program. After reviewing documents from both institutions, we determined that on-site inspections, required by NIH guidelines, had never been performed. We then met with NSF management, including NSF's animal care and use representative, to discuss the best course of action to assist the college in attaining compliance.

NSF's animal care and use representative briefed college officials on the rules and regulations governing animal care and use. Concurrently, NSF suspended the use of animals under the grant for 30 days while the college convened its own IACUC and conducted a facilities inspection. The results of these corrective actions were

sent to the NSF animal care and use representative and our office. Upon NSF's approval of the IACUC-approved animal care protocol, the IACUC membership and proceedings, and the inspection report, the animal activity under the grant was reinstated.

OIG conducted a follow-up visit to the institution, where we interviewed several faculty members and inspected the research facility. We found no deficiencies and concluded that the institution was in compliance with Federal animal care regulations.

## University Finds Complainant Guilty of Misconduct

Although the majority of misconduct allegations are made in good faith, complainants sometimes make bad faith allegations. One such case recently occurred at a Texas public university.

The university had conducted an inquiry and concluded that an apparent instance of plagiarism required investigation. Because the subjects' work had been supported by NSF, the university notified us. The inquiry found that two publications by different authors—the subjects and complainant, respectively—contained substantially similar text and data. The authors of both publications maintained that they had collected the data, carried out the analysis, and written the articles themselves.

The university investigated and found that the data collection, analysis, and prose in dispute were the original work of the subjects. It found that the complainant had misappropriated the subjects' work and then accused them of plagiarizing her. The university decided to terminate the complainant's employment.

We reviewed the university report and determined its conclusion, that the subjects had not committed misconduct, was well supported by the evidence. Because none of the complainant's actions occurred in conjunction with NSF proposed or funded activities, we lacked jurisdiction over them and did not evaluate the report's conclusions regarding them.

## PI Fails to Disclose and Distinguish Between Virtually Identical Proposals

We received an allegation that a proposal, submitted to the NSF Small Business Innovation Research (SBIR) program by the president of a small company in New Hampshire, was virtually identical to a funded proposal he submitted 2 months earlier to another Federal agency. The NSF proposal cover sheet asks "Is this proposal being

submitted to another Federal agency”? In this case the president answered “No” to that question.

The president asserted the two proposals were significantly different, and he provided us with a detailed explanation of the differences in the experiments presented in the NSF proposal and the proposal funded by the other Federal agency. However, the president also admitted that the NSF proposal, which was not funded, did not adequately address the technical details associated with these differences.

We asked an expert to compare the proposals and review the president’s explanation. She concluded the two proposals were virtually identical in organization, content, and task descriptions and contained identical tables, figures, and narrative with a few exceptions. She also explained that the few differences in the NSF proposal were consistent with the president’s explanation, although the president had not done an adequate job of emphasizing the technical specifications of the NSF proposal.

We concluded the president was careless in the preparation of the NSF proposal, both in failing to disclose the prior submission of the same proposal to another agency and in failing to adequately describe the proposed research. We wrote to the president strongly recommending he be more thorough and careful in future submissions of proposals to Federal agencies to avoid similar allegations. We determined his conduct did not warrant our recommending further action by NSF. We described similar cases in previous years (see Semiannual Reports: March 1998, p. 21; September 1999, p. 26; March 2000, p. 24; September 2000, p. 28), and always urge scientists participating in the SBIR program to accurately inform NSF when they are submitting the same proposal to different Federal agencies.

## Graduate Student Alleges Theft of Ideas by Advisor

We received an allegation from a graduate student at a university in Washington, D.C., that his faculty advisor stole the student’s research work. The student also alleged that the advisor did not provide him with appropriate compensation for work he performed for an NSF-supported project. Since the university had already initiated an inquiry into the student’s complaints, we deferred our inquiry and requested a copy of its inquiry report when completed.

The university inquiry committee determined that the faculty advisor had submitted two papers to conference proceedings which contained research work of the student, both listing the student and the advisor as co-authors. The student believed that publication of his dissertation research would prevent him from receiving the Ph.D. In fact, the Department expected each student to publish a paper prior to the completion of the dissertation as partial fulfillment of the degree. The student

also thought that if the acknowledgment section in a paper stated that NSF support was involved, he should receive money from that grant for work on the project. The committee noted that the student's education was supported from the institution's funds, not NSF. The committee explained to the student that acknowledgment of NSF support in a paper did not mean he received compensation.

The committee subsequently determined that the allegations were without substance. As a result of the inquiry, the institution increased its efforts to inform graduate students about issues related to common practices and misconduct in science. We concurred with the university's findings and closed our inquiry.

## Reviews Drawn From Administrative Case Experiences

We strive to aggregate information from isolated cases to develop a comprehensive, uniform approach to cases. These analyses also provide us with the opportunity to conduct a targeted review of particular NSF systems. In this period, we conducted a limited review of NSF's reconsideration process, as well as an analysis of our closed plagiarism cases. A synopsis of both efforts is described below.

## Recommended Improvements in NSF's Reconsideration Process

During this semiannual period, we initiated a review of NSF's reconsideration process. When Principal Investigators (PIs) contact us with concerns about declined proposals we inform them about the process. Because many of these PIs are unhappy with NSF's decision, we frequently advise them to determine whether they want to request reconsideration by NSF. Their decisions regarding reconsideration have no effect on our review of their complaints because our reviews are independent of NSF's reconsideration process and can proceed concurrently.

We were also interested in the reconsideration process because the FY99 NSF customer satisfaction survey indicates that PIs give the NSF review process a satisfaction rating of 58/100 (*American Customer Satisfaction Index Report on Grant Applicants FY99 for NSF*, November 2000). However, despite declining an average of 20,000 proposals, NSF receives only 40-50 reconsideration requests each year (*Report to the National Science Board on the National Science Foundation's Merit Review System Fiscal Year 2000*, NSB 01-36). We reviewed the proposals NSF reconsidered in FY2000, assessed the reconsideration process, and interviewed staff to identify areas for improvement.

We learned that only 40% of PIs who applied for reconsideration had been informed of the reconsideration process in declination letters and that some NSF staff feel that PIs are confused about the purpose of reconsideration. NSF staff stated that some PIs incorrectly assume it is an opportunity to rebut reviewer comments and provide new information. In fact, reconsideration is a substantive and procedural review of the process NSF used to make its decision and considers only the facts before NSF at the time of the declination.

NSF staff felt that some PIs consider the initiation of the process to be daunting because they are required to contact their NSF program officer first to discuss the rationale for the decline before requesting reconsideration. Some PIs contact the wrong individual to begin the process and are frustrated by their inability to gather information about the status of their request for reconsideration.

We also learned that reconsiderations are not tracked in NSF's electronic jacket system, and no relevant data is available in the Enterprise Information System.

We recommended that NSF better publicize the reconsideration process by incorporating information about it in all declination letters. We suggested that NSF improve its internal and external documentation of the reconsideration process and consider designating an NSF staff member to perform an Ombudsman function. The Ombudsman could serve as a neutral point of contact, a centralized source of information, and an effective process manager for timely and objective review of reconsideration requests. We also recommended that NSF augment its electronic data system with data on reconsidered proposals, and that it begin collecting reconsideration documentation within its electronic jacket system.

The scope of our review was limited to FY 2000 reconsideration requests. A broader review may obtain different results.

## Review of Plagiarism Cases

Individual scientists and professional societies regularly ask us for details on the scope and frequency of the plagiarism cases we investigate. Approximately 49% of all the allegations we have reviewed are allegations of plagiarism which includes verbatim plagiarism (17%), intellectual theft (23%), violation of peer review (7%) and duplicate proposal submission (2%).

The intellectual theft category, also known as plagiarism of ideas, contains the most eclectic group of allegations and are the most time consuming and difficult to prove. They encompass a broad range of potentially inappropriate behavior, including authorship disputes among colleagues, as well as disputes between mentors and

students. They also include allegations of failure to cite, or to sufficiently cite, ideas in proposals, poster sessions, the published literature, public seminars and private conversations. Many of these allegations are brought by former collaborators who feel that ideas they contributed to papers, research projects, or proposals cannot subsequently be used without permission or attribution by their former collaborators. We generally close these cases after inquiry because we find that only rarely do scientists develop a clear agreement about the subsequent use of ideas, data, and materials prior to initiating a research project. Without a specific prohibition, we generally conclude that it is accepted practice for former colleagues to make subsequent use of materials and ideas shared within a collaboration.

Among the allegations of verbatim plagiarism, we reviewed evidence that figures, text, equations, diagrams, and references have been copied without attribution. Regarding text, we reviewed allegations ranging from small amounts of scattered paraphrasing within a document, up to allegations that whole proposals have been copied verbatim. In some cases, we considered whether including a reference to a source document near or within the copied text is a mitigating factor.

Sixty-seven percent of our cases resulting in misconduct in science findings concern allegations of plagiarism. More than a third of these cases were also associated with other actions that violate community standards, including violations of confidential peer review, intellectual theft, or undeclared duplicate proposal submission. Almost half of the misconduct findings were sufficiently serious to warrant the most severe actions, which include suspension/termination of an award or debarment.

We have prepared a summary of our findings in a poster session to be presented at a national meeting and used in our Outreach and Ethics Seminars.

## Civil and Criminal Investigations

### Cases for Criminal Referral

#### Possible Fraud Under SBIR Grants

We were notified by a university in South Carolina that one of its faculty (the subject) used his university laboratory and graduate students to carry out work under an NSF SBIR grant to his wife's private company. Under the SBIR program, at least half of the work must be performed at the awardee small business. Our investigation revealed that in fact no work at all had been performed under the Phase I SBIR grant.

### Program Income Requirements Under NSF Awards

*“Program income” refers to income received by a Federal awardee that is either directly generated by the grant activity or earned as a result of the grant. It does not include (1) income resulting from patents, copyrights, trademarks, or inventions; or, except as discussed below, (2) program income received beyond the period of the award. Pursuant to NSF’s Grant General Conditions unless otherwise specified in the award, grantees are required to retain program income, add it to the funds committed to the project by NSF, and use it to further project objectives. After the awardee adds the program income to the total award amount, the expenditure of the program income is subject to the same requirements of allowability, reasonableness, and allocability as the direct Federal award funds.*

*Because of the Federal character of program income, allegations of theft or fraud involving program income can constitute violations of Federal civil and criminal laws, and abuse of Federal program income can give rise to Federal equitable remedies such as disgorgement.*

*In the case described above, the special NSF grant conditions applicable to conferences (NSF FL 26) require that fees charged to participants be applied to defray conference expenses, and that excess fees be applied to offset award funds. Because these special conditions are not limited to program income received during the period of the award, it was appropriate in this case for the awardee to offset the income against previously expended NSF award funds, and return the excess award funds to NSF.*

The final report submitted by the subject for the Phase I grant was essentially copied verbatim from a Masters thesis written by one of the subject’s graduate students before the grant was awarded. Most of the \$99,300 of grant funds were paid by the awardee to the subject and his wife as salaries, with the remaining \$20,000 paid to the subject as “reimbursement” for “supplies”.

Based on the final report for the Phase I grant, the subject submitted a Phase II SBIR proposal to NSF on behalf of his wife’s company. NSF awarded a Phase II grant to the company for \$399,892, and made the first payment of \$99,974. After reviewing the available documents and interviewing the subject, his wife, and his former graduate student, we recommended that NSF suspend the grant and it did so. The subject subsequently repaid \$198,975 to NSF, and also made an unrestricted donation to NSF of an additional \$27,500. Other aspects of this case are continuing to be reviewed by our office.

## University Returns Grant Funds Related to Program Income

A New Mexico university informed us that a professor of mechanical engineering failed to properly account for program income (conference registration fees), improperly spent NSF funds (food, beverages and holiday gifts), and violated conflict-of-interests rules (employment of a family member as a consultant) in the planning and implementation of an NSF-sponsored conference. The professor had awarded a contract to a private company owned by his wife and himself to coordinate the conference, receive the registration fees, and pay certain expenses not being paid directly by the university out of NSF grant funds. After conducting an internal audit, the subject and the university agreed on a settlement by which the subject reimbursed \$22,453.65 to the university.

After receiving the internal audit report, our office conducted an independent investigative financial review of the conference grant, focusing on the program income (see sidebar) received by the professor’s company. Of the

\$124,955 in registration fees received by the company, we questioned \$87,302.43 that should have been received by the university and applied to offset the equivalent amount of NSF grant funds. The university agreed with most of our findings and reimbursed \$63,652.42 to NSF.

## Misappropriation of NSF Grant Funds

We were informed by a Pennsylvania university that it had begun an investigation under its misconduct in science regulation. It was alleged that a professor of mechanical engineering had misappropriated a small amount of NSF grant funds for personal use, specifically for textbook purchases for a son attending the university. We informed the university that conversion of NSF grant funds to personal use was a potential civil or criminal issue, not misconduct in science. However, because of the small amount of funds involved, we deferred our investigation while the institution completed its process. In the course of the investigation, the subject acknowledged purchasing the textbooks with NSF grant funds, but claimed that he did so on the recommendation of his son to assist the subject in learning complex mathematics and new computer programming techniques. The subject voluntarily reimbursed the university for the questioned expenditures, which the university credited to the NSF grant.

## Computer Intrusions

### OIG-Computer Incident Response Team (CIRT)

At NSF's request we responded to two computer intrusions during this period. We attended training and joint agency meetings to improve our skills and ensure our abilities to coordinate our CIRT efforts with other agencies.

The intrusions both involved "graffiti hacks," in which the hacker replaces a website's default home page with another page, usually declaring that the site has been hacked. There was no evidence in either case of harm done to other files, and the server was again online after a short time. In both cases, NSF CIRT procedures were followed and an incident report was filed with the Federal Computer Incident Response Center (FedCIRC).

We also learned of an incident in which data had been deleted from an internal NSF server, temporarily preventing approximately a dozen users from using NSF's internal systems. A contractor that NSF utilizes for computer forensics, NetSec,



completed a scan and review of the database involved. Although the cause of the corruption remains unidentified, NetSec concluded that the data deletion was an error and not intentional or malicious.

## Improvements in the Investigative Process

### Inclusion of NSF Under the Program Fraud Civil Remedies Act

An NSF legislative priority that we have supported since the inception of our office is amending the Program Fraud Civil Remedies Act (“PFCRA”) to include NSF. (See Semiannual Reports: March 1990, p. 24; March 1991, p. 42; September 1992, p. 31; March 1993, p. 35; and March 1994, p. 42). Currently, PFCRA does not cover NSF because it authorizes only a government “authority” to bring an action, and “designated federal entities” such as NSF are not included in PFCRA’s definition of “authority”. However, we believe that PFCRA is well-suited for resolving disputes between NSF and its grantees and contractors involving fraudulent claims because the dollar amounts at issue often fall within PFCRA’s jurisdiction over claims of less than \$150,000.

In a number of cases, including some currently under way, NSF might have used PFCRA to seek double damages for fraudulent expenditures. We again urge Congress to consider legislation to effect this change.

### Training and Process Improvements

In order to more effectively pursue allegations of fraud, waste and abuse referred to the OIG, we combine the perspectives and expertise of the various disciplines represented in our office, including investigative scientists, investigative attorneys and criminal investigators. We continuously seek training opportunities that will help our staff develop the skills to work in these multi-disciplinary investigative teams. Similarly, we strive to improve the tools and processes with which our staff work. Some of our recent training and administrative initiatives include:

#### *Audit Training for Investigators*

In June, our investigative staff attended training at the Inspectors General Auditor Training Institute in Fort Belvoir, Virginia. The five-day course was titled, “The Audit Process: An Overview for Non-Auditors.” Our objective was to provide investigators with an understanding of how auditors plan their work, assess

evidence, and report their findings. The end result was a greater understanding of how to enhance our use of audit expertise in investigations.

#### *Grant and Contract Fraud Training*

In August, we hosted a three-day training program on procurement, contract and grant fraud provided by the Inspector General Criminal Investigator Academy. Attendees included investigators and auditors from our office as well as the FBI, NASA-OIG, Interior-OIG, EPA-OIG, NEA-OIG, and HUD-OIG.

#### *Development of Grant Fraud Indicators*

We created a checklist of possible grant fraud indicators for use by auditors and investigators to enhance our ability to detect grant fraud by identifying and knowing its risk factors. The checklist is drawn from a wide variety of sources, including accounting rules, statutory law and the experience of auditors, attorneys and criminal investigators. The grant fraud indicators checklist will enable us to better fulfill our mission of promoting economy, efficiency, effectiveness and integrity in NSF programs. We hope to share this work product with other Federal agencies that investigate grant fraud, in order to create a shared resource useful to various members of the IG community.

#### *Records Retirement*

In December 1998, the National Archives and Records Administration (NARA) withdrew General Records Schedule (GRS) 22, which regulated the retention and disposal of all audit and investigative files compiled by all Offices of Inspectors General, including NSF's OIG. We submitted a Request for Records Disposition Authority to NARA to classify our audit and investigative files, as well as records pertaining to policies and procedures, for retention and disposition. We are awaiting action by NARA. In the process of surveying other OIG offices, we learned that we were not alone in having been unaware that NARA had withdrawn GRS 22. Our office is ready to provide assistance in the drafting of a Request for Records Disposition Authority to any Federal OIG without a current records retention policy.

#### *New Hotline Procedures*

The OIG Hotline (800-428-2189) is monitored by our Administrative Officer (AO), who either takes the information or transfers the caller to another member of the IG staff. Our AO attended training at the Federal Law Enforcement Training Center on how to handle such calls. An OIG Hotline Intake System was recently established to ensure consistent handling of hotline calls. Now any IG staff member who receives information from a Hotline call records the information directly into a database, which is monitored so that the information can be forwarded to the appropriate staff for action.

## Overview of Case Activity

### Summary of Case Activity for this Period

We receive allegations of wrongdoing from a variety of sources, including NSF staff, merit reviewers, researchers, graduate students, and institution officials. We review each allegation we receive for substance, including those we receive anonymously, and classify them as either Preliminary, Administrative (which includes misconduct in science), Civil/Criminal, or a newly added category this period, Computer Incident cases. Preliminary cases are generally closed within two months, referred to management for resolution, or, if supported by sufficient evidence, converted into Administrative or Civil/Criminal cases. Computer Incident cases, such as intrusions, are handled separately.

We received 73 allegations in this semiannual period. Of these, 42 were initially classified as Preliminary, 15 as Administrative, 11 as Civil/Criminal, and 5 as Computer Incident cases. We closed 37 Preliminary cases after determining there was insufficient evidence to warrant opening an Administrative or Civil/Criminal case. We closed 8 Preliminary cases that were converted into Administrative (4) or Civil/Criminal (4). We also closed five Computer Incident cases this period.

### Administrative Cases

The majority of our Administrative cases involved allegations of misconduct in science. Under our misconduct in science regulation, cases can involve three steps: inquiry, investigation, and adjudication. An inquiry consists of initial information gathering and fact finding to determine whether the allegations are substantive. If we find that an allegation lacks substance, we close the case. If we determine that an allegation has substance, we initiate an investigation. If, after investigation, we believe misconduct in science has occurred, we send a recommendation to NSF's Deputy Director for adjudication.

We closed 17 Administrative cases at the inquiry stage this period. These cases involved subjects at public colleges and universities (14), private universities (2), and private industry (1). The primary allegations in these cases included intellectual theft (12), false statements or other misrepresentations (3), and animal care violations (2). We contacted the subject in 10 of these cases and we requested an expert's opinion in 1 case.

We closed one Administrative case after investigation. NSF's Deputy Director made a finding of misconduct in science in this case and took action consistent with

our recommendations (p. 34). In other Administrative case actions this period, we deferred five inquiries to grantees and forwarded results of two investigations to NSF's Deputy Director for adjudication (pp. 34-36).

## Civil/Criminal Cases

We closed nine Civil/Criminal cases that involved possible violations of Federal laws, specifically, false statements (4) and embezzlement or theft (5). We also referred three cases to the Department of Justice for prosecution.

## Computer Incidence Cases

We closed 5 Computer Incident cases this period that involved computer intrusions (3) and other issues (2).

## Freedom of Information Act and Privacy Act Requests

Our office has the responsibility to respond to requestors who ask for information contained in our files under the Freedom of Information Act ("FOIA", 5 U.S.C. § 552) and the Privacy Act (5 U.S.C. § 552a). Requestors not satisfied with our response can appeal to the General Counsel of NSF. Certain FOIA requests are subject to fees as described in NSF's FOIA regulation at 45 C.F.R. § 612.10.

This reporting period, we received seven requests and we responded to five (reply dates for the other two are due after September 30, 2001).

## Preliminary Case Activity

Over the past year and a half we have been working to streamline our investigative processes and develop a more uniform approach to assessing administrative, civil, and criminal allegations. On receipt of an allegation, we first assess the nature of the evidence supporting the allegation and whether the issues are predominantly Administrative or Civil/Criminal. For those allegations that are accompanied by insufficient evidence to classify in either category, we created a Preliminary case phase. The objective of Preliminary case assessment is to improve our rate of allegation assessment and reduce the administrative burden on investigators. Unlike

Administrative and Civil/Criminal cases, Preliminary cases may be closed with a diary note from the investigator and are not subject to extensive management review. Investigators assigned Preliminary cases are expected to gather sufficient evidence from the complainant within 2 months to close the matter, refer the matter to NSF management, or reclassify the case as Administrative or Civil/Criminal. Conversion of Preliminary cases to Administrative or Civil/Criminal cases is accomplished by reviewing the evidence and rationale for conversion with the case supervisor.

The table below displays our processing of Preliminary cases over the last three semiannual periods.

| Semiannual Period | Closed Preliminary Cases | Management Issues | Administrative Conversions | Civil/Criminal Conversions | Insubstantial Matters |
|-------------------|--------------------------|-------------------|----------------------------|----------------------------|-----------------------|
| Sept. 2000        | 19                       | 4                 | 4                          | 2                          | 9                     |
| Mar 2001          | 34                       | 7                 | 1                          | 3                          | 23                    |
| Sept. 2001        | 45                       | 9                 | 4                          | 4                          | 28                    |
| Totals            | 98                       | 20                | 9                          | 9                          | 60                    |

We view the preliminary process of assessing allegations that are weakly supported by the evidence, or for which we may have questionable jurisdiction, as a valuable addition to our investigative portfolio. In the past year and a half, we have closed 98 in Preliminary files. We determined that approximately 61% were not supported by sufficient information to proceed further or we had no jurisdiction over the issues, 20% were management issues that were forwarded to the appropriate office, and only 9% were Administrative or 9% Civil/Criminal issues. While it takes us approximately 6 months to assess and resolve a typical Administrative case, it takes us approximately 2 months to review and process the typical Preliminary case (the complications of assessing the allegations in a few cases caused longer processing time). The Preliminary case system has reduced the bureaucracy associated with case management, enabled investigators to appropriately focus on more serious matters, and allowed us to accurately track all of the allegations we review and to which we devote investigator time.

# Outreach

## Outreach Activities

### OIG Outreach Planning and Evaluation

We have conducted Education and Outreach activities of various types since the inception of the office. In 1999, we committed to developing a strong and significantly expanded Education and Outreach program. As part of our ongoing effort to focus that commitment, we developed an Education and Outreach Plan during this semiannual period. In it, we discuss the current status of our outreach efforts, describe our goals and strategies, identify our partners and the messages we wish to communicate, and outline the methods we will use to accomplish our goals. Our goals, which are based on the OIG Strategic Plan, are to:

1. Ensure the integrity of financial, administrative, and research systems;
2. Detect fraud, waste, abuse, and research misconduct;
3. Maintain current information about the communities we serve to help us focus on matters of substantive concern;
4. Make it easy for the communities we serve to contact and interact with us.



OIG Staff consider a proposal for the Education and Outreach plan.

The strategies we plan to use to accomplish our goals are to build strong relationships with key partners, create a baseline of partner needs and expectations, and inform our partners about OIG resources, programs, and materials that may be valuable to them.

In June 2001, we presented this plan to the Audit and Oversight (A&O) Committee of the National Science Board (NSB). The A&O Committee requested that the OIG also provide a description of how

it would assess the effectiveness of its Outreach work. We consulted with the NSF Division of Research, Evaluation and Communication (REC) in the Education and Human Resources (EHR) Directorate to consider evaluation methods appropriate for our needs.

As a result, we will divide our evaluation into three stages: planning evaluation, formative evaluation, and summative evaluation. We will evaluate how well our Outreach Plan is understood at an Outreach Retreat for OIG staff in October 2001. At that retreat we will discuss the effectiveness of our existing evaluation tools, including our evaluation forms and summary forms, and what additional evaluation tools we should use to evaluate the implementation and progress of our Outreach work. We plan to conduct a summative evaluation at the end of FY 2005, at which time, our Outreach Plan will have been in place for 5 years. We believe it will be appropriate at that point to consider the impact of the project and determine future steps.

*(Our Strategic Plan is available at [oig.nsf.gov/stratplan.pdf](http://oig.nsf.gov/stratplan.pdf).)*

## International Cross-Cultural Exchanges

During the summer we hosted visitors from the governments of South Africa and Japan with whom we discussed a variety of audit and investigative policies and procedures. The South African government is interested in setting up an internal audit function to review business practices in its research facilities and institutions, primarily to help prevent and detect fraud. Japan's representatives from the Ministry of Economy, Trade and Industry (METI) are interested in establishing audit procedures that will improve their ability to assess internal controls. As Japan revitalizes its research focus to address evolving program demands and priorities, METI is seeking ways to improve accountability of awardees. Both nations are interested in procedures for handling allegations of misconduct in science.

## Presentations Emphasize Accountability, Integrity

In early August the IG participated in the leadership retreat sponsored by the Society of Research Administrators International (SRA). Founded in 1967, SRA International is a non-profit association dedicated to advancing the profession and improving the efficiency and effectiveness of research administration. The IG presented the keynote address to the group and focused on issues of future accountability, including the importance of data-driven performance based reporting, fiscal integrity related to grant and contracts, and research integrity. The IG emphasized

the importance of balance in establishing accountability measures stressing that research and business interests should complement, not conflict. SRA is interested in developing a career path for research administrators with a focus on requisite educational courses and continuing training.

At the Northeast Conference on College Cost Accounting, we presented an overview of the type of audits that we conduct at universities, emphasizing areas of concern to us such as cost-sharing. The conference provided an opportunity to share and discuss common issues. In addition to learning about NSF's audit approach and policies, attendees were also interested in our interpretation of specific issues contained in Office of Management and Budget circulars.

The National Center for Atmospheric Research and the University Corporation for Atmospheric Research invited the Inspector General to address scientists in Boulder, Colorado on the importance of accountability in research. Scientists and administrators from the National Oceanic and Atmospheric Administration, the National Institute of Standards and Technology, the University of Colorado, and the Colorado School of Mines also participated in the session. The IG spoke about misconduct policies and procedures, research compliance, and financial auditing principles.

The presentation emphasized the Federal government's interest in these topics and how the government engages in oversight. Institutional responsibilities and the role of institutional management were also discussed. The NSF IG was joined by the Deputy IG from the Department of Commerce who spoke about the purpose and importance of the Chief Financial Officer Act and the Government Performance and Results Act.



Attending a meeting of research scientists at UCAR are: William Suhre, Department of Commerce; Richard Anthes, UCAR; Kathy Schmoll, UCAR; the Inspector General; and Ed Blansitt, Department of Commerce.



## Research Ethics and Allegations of Misconduct in Science

We continue to seek feedback from institutions to improve the assistance we provide in the deferral of misconduct cases by conducting post-deferral visits. Once OIG learns of an allegation of misconduct, it usually “inform[s] the awardee institution of the alleged misconduct and encourage[s] it to undertake an inquiry” or “defer[s] to the inquiries or investigations of the awardee institution or of another Federal agency” (45 CFR 689.4; see also 45 CFR 689.5). Once the institution completes its investigation, OIG performs an independent assessment of the accuracy and completeness of the report and submits a recommended disposition to NSF (45 CFR 689.8). Once the institution completes its investigation, OIG performs an independent assessment of the accuracy and completeness of the report and submits a recommended disposition to NSF (45 CFR 689.8). Recently at a post-deferral visit to a private university in Washington, D.C., we learned that the university found our assistance helpful in explaining exactly what NSF needed and in assisting them in planning their process. Representatives also said that the experience made them aware of the need to implement changes in the university’s policy.

In different sessions, one hosted by the University of Texas Medical Branch (UTMB) and another by University of South Alabama (USA), we presented an overview of NSF and OIG, described how we investigate allegations, and engaged the audience in case studies. In the UTMB session for administrators and faculty, we were afforded the opportunity to discuss the UTMB policies on allegations and provide some issues for consideration. We also learned that grantees are seeking additional guidance from NSF regarding the roles and responsibilities of co-principal investigators.

We also strive to reach new audiences that interact with NSF. Therefore, we were pleased to participate with NSF’s Office of General Counsel in a two-day workshop on “Legal Issues and Strategies for Responding to Research Misconduct Allegations” co-sponsored by the American Association for the Advancement of Science and the Office of Research Integrity at the Department of Health and Human Services. We moderated a workshop panel on “Preparing the Investigation Report and Disclosure Responsibilities.” Because many of the attendees were attorneys from university offices of legal counsel, this workshop enabled us to reach an audience we do not normally reach.

We continue to make presentations on research misconduct issues and about the OIG. They include:

- a meeting on Teaching Responsible Conduct of Research sponsored by the organization Public Responsibility in Research and Medicine and two meetings of the Society of Research Administrators.
- a professional development seminar for advanced doctoral students in psychology.

## Programs for NSF Employees

We continue to reach out to NSF employees by routinely participating in training programs for new employees as part of division-specific orientations and program managers seminars. In orientation programs for NSF's directorates of Education and Human Resources (EHR) and Mathematics and Physical Sciences (MPS) and the Program Managers Seminars, we briefed new program officers on the issues they are required to bring to our attention and provided several case studies dealing with issues such as plagiarism, data sharing, and conflict of interests, to illustrate how our office handles these matters. We also stressed attention to the award administration problems we encounter during financial audits. This work enables us to raise awareness of fraud, waste and abuse issues among new employees as well as interact on a one-to-one level, in an informal setting, with other NSF employees.

Regular contacts with staff also arise from our support of NSF's on-going conflicts of interest training. We encourage NSF employees to use agency procedures to address all potential conflicts and to understand the consequences of not doing so. In addition, as part of our ongoing liaison program, we have met with NSF divisions to discuss our office's role in ensuring the integrity of NSF's award system. We find that our ongoing discussions result in an increased awareness regarding potential problem areas and subsequent referrals of allegations to our office.

We have also invited representatives from several NSF offices to give presentations about their offices at our monthly staff meeting. During this period, we have hosted representatives from the Budget Operations and Systems Branch, the Office of Budget, Finance, and Award Management, the NSF Library, and the Office of Legislative and Public Affairs. We find that we learn new information and obtain a good perspective on various NSF offices.

## Cooperative Work with NSF and Other Agencies

We continue to assist NSF and work with other Federal agency and OIG staff in the implementation of the OSTP policy on research misconduct. We serve as the liaison between the OSTP agency Implementation Group and the Inspectors General community. The NSF IG is Chairperson of the PCIE/ECIE Misconduct in Research Group. This group completed a supplement to the Quality Standards for Investigations brochure which provides guidance on the conduct of research misconduct investigations.

In addition, in this semiannual period we have worked with NSF to present information to the NSF grant community regarding NSF policies and procedures and the importance of adhering to NSF guidance and rules. We presented a portion of the Grants and Administration section of NSF's Regional Grants Seminars. We attended a conference for awardees of the Rural Systemic Initiative program in EHR, whose awardees include school systems, tribal governments, and other organizations that often have limited experienced in administering Federal awards.

In conjunction with NSF's Office of Contracts, Policy, and Oversight, we presented an NSF Update session at the Society of Research Administrators (SRA) Joint Northeast and Midwest Sections Meeting.

# Statistical Data

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## Reporting Terms Defined

Some of the more common terms that we use in reporting audit statistics and findings are defined below:

**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, either a cost is not supported by adequate documentation, or the expenditure of funds for the intended purpose is deemed unnecessary or unreasonable.

**Unsupported Cost.** A cost that is questioned because it is not supported by adequate documentation at the time of audit.

**Unresolved Costs.** Costs that have been claimed, but can not be evaluated at the time of the audit because either: 1) the criteria for their measurement has not been established; 2) the period for establishing the criteria is not complete or 3) the criteria is unclear or ambiguous. This category most frequently applies to indirect costs. For example, if a final indirect cost rate has not been determined for a particular period, the claimed indirect costs for that period would be classified by the auditor as unresolved costs.

**Management Decision.** Management's evaluation of the findings and recommendations included in the audit report and the issuance of a final decision by management containing its response to such findings and recommendations. It is important to note that NSF is responsible for making a management decision regarding questioned costs that determines whether they will be sustained (i.e., disallowed) or allowed.

**Funds Put to Better Use.** Audit recommendations that identify ways to improve the efficiency of programs frequently lead to prospective benefits over the life of an award or funds put to better use. Examples include reducing outlays, deobligating funds, or avoiding unnecessary expenditures.

**Final Action.** The completion of all management actions that are described in a management decision with respect to audit findings and recommendations. If management concluded that no actions were necessary, final action occurs when a management decision is issued.

**Compliance or Internal Control Issues.** Audits often result in recommendations either 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.

## Audit Reports Issued with Recommendations for Better Use of Funds

|   | Dollar Value |
|---|--------------|
| A. For which no management decision has been made by the commencement of the reporting period | 0            |
| B. Recommendations that were issued during the reporting period                               | \$50,000     |
| C. Adjustments related to prior recommendations   | 0            |
| Subtotal of A+B+C   | \$50,000     |
| D. For which a management decision was made during the reporting period                       | 0            |
| i) Dollar value of management decisions that were consistent with OIG recommendations         | 0            |
| ii) Dollar value of recommendations that were not agreed to by management                     | 0            |
| E. For which no management decision had been made by the end of the reporting period          | \$50,000     |
| For which no management decision was made within 6 months of issuance                         | 0            |

## Audit Reports Issued with Questioned Costs

|   | Number of Reports | Questioned Costs | Unsupported Costs |
|---|-------------------|------------------|-------------------|
| A. For which no management decision has been made by the commencement of the reporting period | 17                | \$1,640,676      | \$478,031         |
| B. That were issued during the reporting period   | 13                | \$5,389,095      | \$3,294,455       |
| C. Adjustment related to prior recommendations  | 1                 | \$137,076        | \$0               |
| Subtotal of A+B+C   | 31                | \$7,166,847      | \$3,772,486       |
| D. For which a management decision was made during the reporting period                       | 18                | \$1,777,752      | \$478,031         |
| i) dollar value of disallowed costs   | N/A               | \$967,024        | N/A               |
| ii) dollar value of costs not disallowed  | N/A               | \$810,728        | N/A               |
| E. For which no management decision had been made by the end of the reporting period          | 13                | \$5,389,095      | \$3,294,455       |
| For which no management decision was made within 6 months of issuance                         | 0                 | 0                | 0                 |

## Audit Reports Involving Cost-Sharing Shortfalls

|  | Number of Reports | Cost-Sharing Promised | At Risk of Cost Sharing Shortfall (Ongoing Project) | Actual Cost Sharing Shortfalls (Completed Project) |
|--|-------------------|-----------------------|---|--|
| A. Reports with monetary findings for which no management decision has been made by the beginning of the reporting period: | 4                 | \$3,018,274           | \$491,459   | \$70,421   |
| B. Reports with monetary findings that were issued during the reporting period:  | 3                 | \$9,967,398           | 0   | \$194,125  |
| C. Adjustments related to prior recommendations  | 0                 | 0                     | 0   | 0  |
| Total of Reports with Cost Sharing Findings (A+B+C)  | 7                 | \$12,985,672          | \$491,459   | \$264,546  |
| D. For which a management decision was made during the reporting period:   | 4                 | \$3,018,274           | \$491,459   | \$70,421   |
| 1. Dollar value of cost-sharing shortfall that grantee agreed to provide.  | N/A               | N/A                   | \$491,459   | \$4,056  |
| 2. Dollar value of cost-sharing shortfall that management waived   | N/A               | N/A                   | 0   | \$66,365   |
| E. Reports with monetary findings for which no management decision has been made by the end of the reporting period.       | 3                 | \$9,967,398           | 0   | \$194,125  |



## Status of Recommendations Involving Internal NSF Management Operations

|   |           |
|---|-----------|
| <b>Open Recommendations (as of 9/30/01)</b>                   |           |
| Recommendations Open at the Beginning of the Reporting Period | 13        |
| New Recommendations Made During Reporting Period              | 81        |
| <b>Total Recommendations to be Addressed</b>                  | <b>94</b> |
| <b>Management Resolution of Recommendations<sup>1</sup></b>   |           |
| Awaiting Resolution   | 80        |
| Resolved Consistent With OIG Recommendations                  | 14        |
| <b>Management Decision That No Action is Required</b>         | <b>0</b>  |
| <b>Final Action on OIG Recommendations</b>                    |           |
| Final Action Completed  | 8         |
| Recommendations Open at End of Period                         | 86        |
| <b>Aging of Open Recommendations</b>                          |           |
| Awaiting Management Resolution:                               |           |
| 0 through 6 months  | 80        |
| 7 through 12 months   | 0         |
| More than 12 months   | 0         |
| <b>Awaiting Final Action After Resolution<sup>2</sup></b>     |           |
| 0 through 6 months  | 0         |
| 7 through 12 months   | 6         |
| 13 through 18 months  | 0         |

<sup>1</sup> “Management Resolution” occurs when the OIG and NSF management agree on the corrective action plan that will be implemented in response to the audit recommendations. The OIG is currently reviewing one action plan that addresses 59 recommendations.

<sup>2</sup> “Final Action” occurs when management has completed all actions it agreed to in the corrective action plan.

## List of Reports

### NSF and CPA Performed Reviews

| Report Number | Subject                   | Questioned Costs   | Unsupported Costs  | Better Use of Funds | Cost Sharing At-Risk |
|---------------|---------------------------|--------------------|--------------------|---------------------|----------------------|
| 01-1010       | Museum                    | \$0                | \$0                | \$0                 | \$0                  |
| 01-1011       | For-profit Organization   | \$337,589          | \$331,791          | \$0                 | \$0                  |
| 01-1012       | Engineering Center        | \$0                | \$0                | \$0                 | \$0                  |
| 01-1013       | Science Museum            | \$0                | \$0                | \$0                 | \$0                  |
| 01-1014       | University Foundation     | \$0                | \$0                | \$0                 | \$0                  |
| 01-1015       | University                | \$0                | \$0                | \$0                 | \$0                  |
| 01-1016       | For-profit Company        | \$4,774            | \$4,774            | \$0                 | \$0                  |
| 01-1017       | State University          | \$90,602           | \$0                | \$0                 | \$0                  |
| 01-1018       | University Foundation     | \$6,759            | \$0                | \$0                 | \$0                  |
| 01-1019       | University                | \$96,764           | \$0                | \$0                 | \$0                  |
| 01-1020       | Educational Non-profit    | \$215,788          | \$0                | \$0                 | \$0                  |
| 01-1021       | For-profit Organization   | \$22,240           | \$0                | \$0                 | \$0                  |
| 01-1022       | For-profit Organization   | \$677,556          | \$4,953            | \$0                 | \$0                  |
| 01-1023       | For-profit Organization   | \$187,278          | \$16,343           | \$0                 | \$0                  |
| 01-1024       | Southern University       | \$387,471          | \$0                | \$0                 | \$0                  |
| 01-1025       | Municipal School District | \$3,336,687        | \$2,936,594        | \$0                 | \$0                  |
| 01-2005       | Program Annual Report     | \$0                | \$0                | \$0                 | \$0                  |
| 01-2006       | Annual NSF Report         | \$0                | \$0                | \$0                 | \$0                  |
| 01-2007       | NSF Support Review        | \$0                | \$0                | \$50,000            | \$0                  |
| 01-2008       | NSF Internal Report       | \$0                | \$0                | \$0                 | \$0                  |
| 01-2009       | Engineering Center        | \$0                | \$0                | \$0                 | \$0                  |
| 01-2010       | NSF Internal Report       | \$0                | \$0                | \$0                 | \$0                  |
| 01-6002       | Major Project Review      | \$0                | \$0                | \$0                 | \$0                  |
|               | <b>Total:</b>             | <b>\$5,363,508</b> | <b>\$3,294,455</b> | <b>\$50,000</b>     | <b>\$0</b>           |

### NSF-Cognizant Reports

| Report Number | Subject                 | Questioned Costs | Unsupported Costs | Cost Sharing At-Risk |
|---------------|-------------------------|------------------|-------------------|----------------------|
| 01-4015       | Museum                  | \$0              | \$0               | \$0                  |
| 01-4016       | Museum                  | \$0              | \$0               | \$0                  |
| 01-4017       | Museum                  | \$0              | \$0               | \$0                  |
| 01-4018       | Science Academy         | \$0              | \$0               | \$0                  |
| 01-4019       | Research Organization   | \$0              | \$0               | \$0                  |
| 01-4020       | Research Organization   | \$0              | \$0               | \$0                  |
| 01-4021       | University Association. | \$0              | \$0               | \$0                  |
| 01-4022       | Research Organization   | \$0              | \$0               | \$0                  |
| 01-4023       | Science Group           | \$0              | \$0               | \$0                  |
| 01-4024       | Science Museum          | \$25,473         | \$0               | \$0                  |
| 01-4025       | Educational Foundation. | \$0              | \$0               | \$0                  |
| 01-4026       | Science Museum          | \$0              | \$0               | \$0                  |
| 01-4027       | University Association  | \$0              | \$0               | \$0                  |
|               | <b>Total:</b>           | <b>\$25,473</b>  | <b>\$0</b>        | <b>\$0</b>           |

### Other Federal Audits

| Report Number | Subject              | Questioned Costs | Unsupported Costs | Cost Sharing At-Risk |
|---------------|----------------------|------------------|-------------------|----------------------|
| 01-5081       | Southwest University | \$114            | \$0               | N/A                  |
|               | <b>Total</b>         | <b>\$114</b>     | <b>\$0</b>        | <b>N/A</b>           |

## 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 are no reports remaining that meet this condition. The one report remaining open at the end of the last period has been closed. The status of recommendations that involve internal NSF management is described on page 60.

### Investigations Case Activity

|   | Preliminary | Civil/Criminal | Administrative |
|---|-------------|----------------|----------------|
| Active Cases From Previous Reporting Period | 11          | 23             | 24             |
| New Cases                                   | 42          | 15             | 19             |
| Closed Cases                                | 45          | 9              | 17             |
| Active Cases                                | 8           | 29             | 26             |

### Investigations Case Statistics

|                                       |              |
|---------------------------------------|--------------|
| New Referrals                         | 4            |
| Criminal Convictions/Pleas            | 0            |
| Civil Settlements                     | 1            |
| Administrative Actions                | 0            |
| Investigative Recoveries <sup>3</sup> | \$290,874.42 |

<sup>3</sup> Investigative recoveries include civil penalties, criminal fines, and funds paid in restitution, as well as specific cost savings for the government.

## Administrative Statistics

|   |   |
|---|---|
| Cases Forwarded to the Office of the Director for Adjudication                                  | 2 |
| Cases Reported in Prior Periods With No Adjudication by the Office of the Director <sup>4</sup> | 2 |
| Number of Debarments in Effect During This Period   | 4 |
| Assurances and Certifications Received <sup>5</sup>   |   |
| Number of Cases Requiring Assurances During This Period   | 8 |
| Number of Cases Requiring Certifications During This Period                                     | 9 |
| Assurances Received During This Period  | 7 |
| Certifications Received During This Period  | 0 |

<sup>4</sup> These cases are described in our March 2001 Semiannual Report (pages 26-27).

<sup>5</sup> 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 OIG 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. These certifications and assurances remain in OIG and are not known to, or available to, NSF program officials. In one case not involving misconduct in science, described in our September 2000 Report (page 26), NSF required the subject and his institution to submit to the appropriate NSF program an assurance of compliance with appropriate requirements and procedures with any proposal involving biohazardous research.

## Reporting Requirements

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

Reports issued, significant problems identified, the value of questioned costs and recommendations that funds be put to better use, and NSF's decisions in response. (See IG's Letter and p. 55)

Matters referred to prosecutors, and the resulting prosecutions and convictions. (See p. 33, 64)

Revisions to significant management decisions on previously reported recommendations, and significant recommendations for which NSF has not completed its response. (See p. 60, 63)

Legislation and regulations that may affect the efficiency or integrity of NSF's programs. (See p. 44)

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

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

## Management Challenges

**F**or the fourth year, Congress has requested that each Inspector General submit an annual list of the top ten management challenges facing his or her agency. Responding to this request has become an integral part of our strategic planning process. After careful consideration, we submitted to Congress the following challenges that we deemed most crucial to the future success of the agency.

**Management of Large Infrastructure Projects:** NSF spends approximately \$1 billion a year in the aggregate for cutting-edge research facilities and equipment projects, some of which cost hundreds of millions of dollars. Successful management of these projects and programs requires a more disciplined project management approach.

**Cost Sharing:** Significant problems persist with award recipients not meeting their cost-sharing requirements. Because of the importance of these contributions to the research community, and the detrimental impact a shortfall can have on a project, we consider improvements in administering cost sharing to be among the most important priorities for NSF management.

**Management of U.S. Antarctic Program:** Charged with managing all U.S. activities in the Antarctic as a single program, NSF's Office of Polar Programs (OPP) funds research and provides the infrastructure and logistics necessary to conduct scientific experiments. OPP staff must not only have scientific knowledge, but must also be able to oversee and monitor the performance of contractors engaged in delivering a broad range of services to the American scientific community in the harsh polar environment.

**Award Administration:** NSF is challenged to monitor its awards adequately, in terms of scientific accomplishments and compliance with award agreements and federal regulations. The agency needs to establish more coordinated oversight between its program officers and its grant and contract officers to ensure better sharing of information and more effective award administration.

**Merit Review:** NSF must continue to ensure that reviewers correctly apply NSF's review criteria, that the merit review process gives due consideration to ideas, individuals, and institutions which have not received past support, and that the process is effectively administered.

**Data Security:** Next year NSF will depend on its automated computer systems to manage over \$4 billion in funds and to process over 35,000 grant proposals. Therefore, it is imperative that NSF's systems are developed and operated with appropriate security controls to reduce the ever increasing risk of unauthorized access that could compromise data integrity, confidentiality, and/or availability.

**FastLane:** FastLane facilitates administrative transactions with the research community via the Internet. The development and implementation of FastLane, which began in 1994, has moved the agency closer to



the goal of establishing a widely accessible paperless proposal and award process. However, since FastLane serves as the primary interface between NSF and its award recipients and is critical to many of NSF's administrative plans and goals, management must continue to monitor its progress to ensure that the system is user-friendly and reliable.

**Government Performance Results Act (GPRA) Data Quality:** A recent GAO study listed as a key weakness of NSF's FY 2000 Performance Plan that it, "provides limited confidence in the validation and verification of data". To address this criticism the agency has contracted with a public accounting firm to assist in validating the performance data it reports. We believe that NSF should follow-up on its search for ways to ensure data quality.

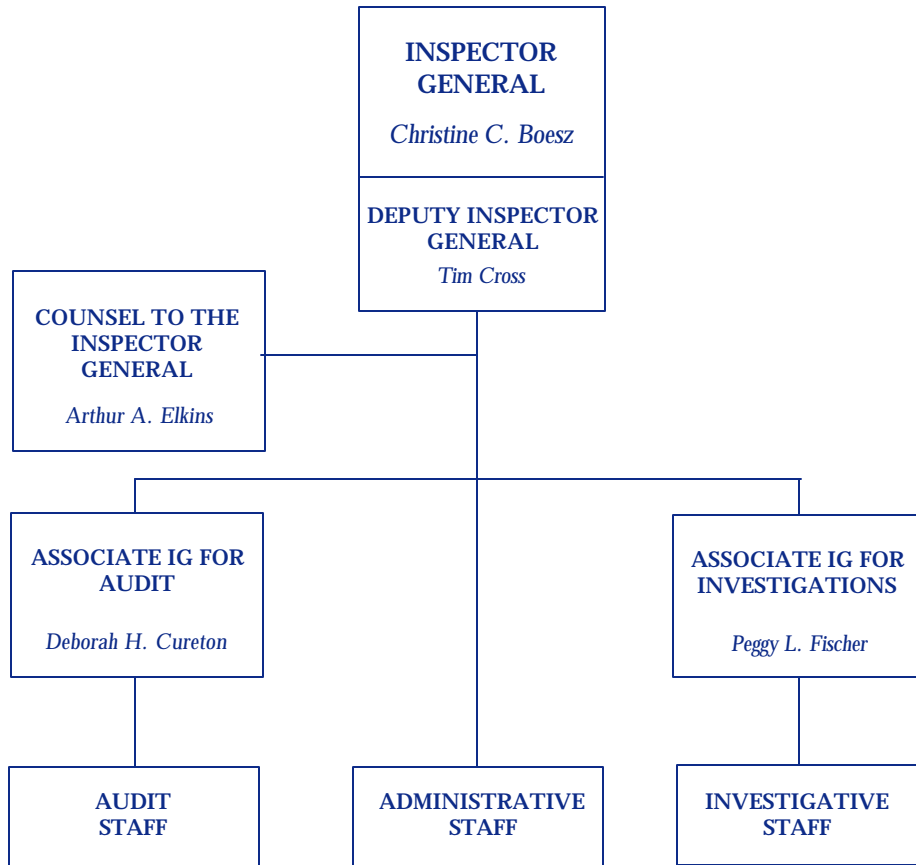
**Work Force Planning and Training:** Although NSF has had significant increases in its program responsibilities and budgets in recent years, salaries and expenses have remained relatively flat. Concerns about the adequacy of staffing come at a time when the government as a whole is facing succession planning and recruiting problems. In addition, NSF's reliance on personnel who serve under a term appointment poses a challenge to the agency to ensure that such staff is adequately trained to administer awards.

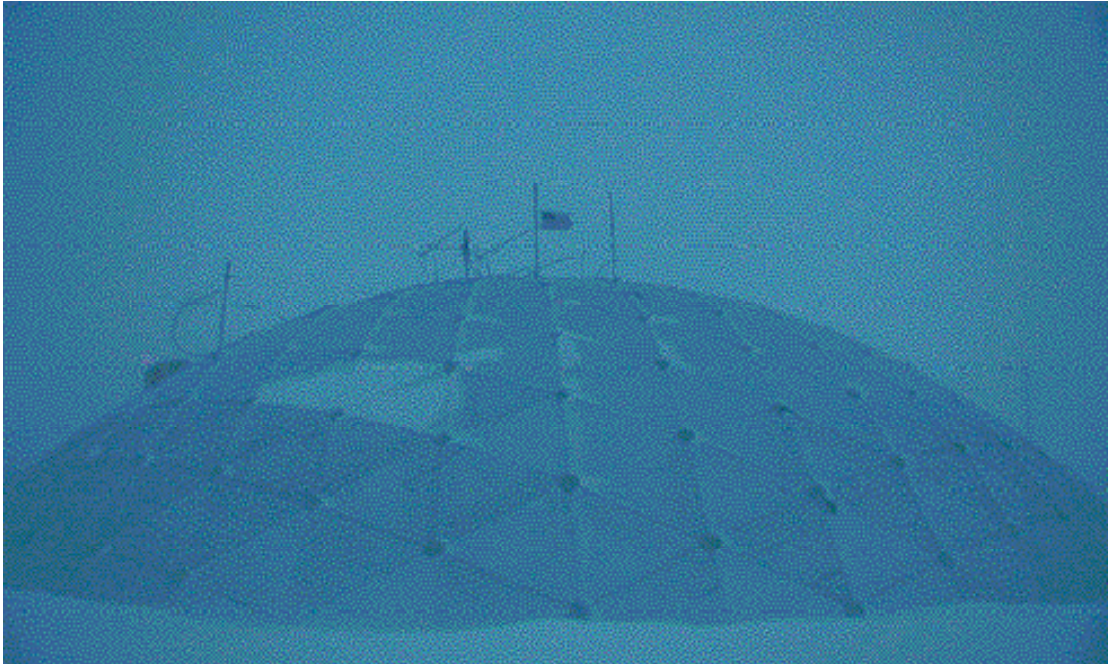
**Fostering a Diverse Scientific Workforce:** NSF's most recent performance plan promises that the agency will begin implementing new strategies to increase diversity. However, because such programs are difficult to implement, NSF needs to define its diversity strategies clearly and develop concrete steps to implement them.

## Acronyms

|         |   |
|---------|---|
| AGA     | Association of Government Accountants             |
| AO      | Administrative Officer                            |
| A&O     | Audit and Oversight Committee                     |
| CAARB   | Cost Analysis and Audit Resolution Branch         |
| CFR     | Code of Federal Regulations                       |
| CIRT    | Computer Incident Response Team                   |
| CPO     | Division of Contracts, Policy and Oversight       |
| DCAA    | Defense Contract Audit Agency                     |
| DGA     | Division of Grants and Agreements                 |
| DHHS    | Department of Health and Human Services           |
| ECIE    | Executive Council of Integrity and Efficiency     |
| EHR     | Directorate for Education and Human Resources     |
| EPA     | Environmental Protection Agency                   |
| ERC     | Energy Research Center                            |
| FedCIRC | Federal Computer Incident Response Center         |
| FOIA    | Freedom of Information Act                        |
| GAO     | General Accounting Office                         |
| GISRA   | Government Information Security Act               |
| GPRA    | Government Performance and Results Act            |
| GRS     | General Records Schedule                          |
| HUD     | Department of Housing and Urban Development       |
| IACUC   | Institutional Animal Care and Use Committee       |
| METI    | Ministry of Economy, Trade and Industry           |
| MPA     | Multiple Project Assurance                        |
| MPS     | Directorate for Mathematics and Physical Sciences |
| NARA    | National Archives and Records Administration      |
| NASA    | National Aeronautics and Space Administration     |
| NEA     | National Endowment for the Arts                   |
| NSB     | National Science Board                            |
| ODP     | Ocean Drilling Program                            |
| OIG     | Office of Inspector General                       |
| OMB     | Office of Management and Budget                   |
| OPP     | Office of Polar Programs                          |
| OSTP    | Office of Science and Technology Policy           |
| PCIE    | President's Council on Integrity and Efficiency   |
| PI      | Principal Investigator                            |
| PFCRA   | Program Fraud Civil Remedies Act                  |
| R&D     | Research and Development                          |
| SBIR    | Small Business Innovation Research                |
| SRA     | Society of Research Administrators                |
| USA     | University of South Alabama                       |
| USAP    | United States Antarctic Program                   |
| UTMB    | University of Texas Medical Branch                |
| VA      | Veterans Administration                           |

# Organization Chart





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