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**SEMIANNUAL
REPORT
TO THE
CONGRESS**



**NATIONAL SCIENCE FOUNDATION
SEPTEMBER 1998**

Letter to the Congress of the United States

In the Inspector General Act, Congress describes our mission: to work together with the Foundation and its programs so that their goals are achieved efficiently and to detect and deter improper activities. This report describes our vision for the future: to carry out our mission by choosing to be inclusive; promoting flexibility and innovation for our office, NSF, and the community NSF serves; and recommending change in proportion to need and foreseeable benefit. To develop an environment that will enable us to realize this vision, we created new structures and processes that facilitate the pursuit of common goals shared by our staff and by Foundation managers. For example, we formed a committee with Foundation executives to coordinate and analyze audits and audit resolution, and we designed and began to implement an outreach program with NSF's directorates. These new partnering activities have already created a culture that promotes constructive dialogue and continuous improvement for our office and for the Foundation (page ii).



The 20th anniversary of the Inspector General Act has occasioned proposals for legislative change to improve the operations of all Inspectors General. Our office benefits greatly from the advice and guidance we receive from eminent executives, scientists, and engineers who serve on the National Science Board. We believe that a similar approach for obtaining advice and guidance would serve the entire Inspector General community well. For this reason, we recommend that Congress consider creating an oversight board, consisting of experts from within and outside the government in the areas of management, investigation, and audit, that would provide advice and guidance on the many complex issues facing Inspectors General. Contrary to a specific legislative proposal introduced in the 105th Congress, we do not believe it is in the Foundation's best interest to consolidate our office with another Office of Inspector General because NSF is best served by having an Office of Inspector General tailored to its mission and culture (page 26).

In streamlining our operations, we now group our audits and inspections under a new category called "Efficiency" (page 1) and describe our financial investigations and reviews of alleged misconduct in science under a new category labeled "Integrity" (page 15). We view all our efforts as contributing to the Foundation's ongoing effort to improve continuously its portfolio of programs in support of excellent research and education in science and engineering.

We look forward to continuing dialogue with Foundation management and with all the communities with which we interact for the purpose of promoting ongoing, positive change for Offices of Inspector General and for the Foundation.

Respectfully submitted,

A handwritten signature in black ink that reads "Philip L. Sunshine". The signature is written in a cursive, flowing style.

Philip L. Sunshine
Acting Inspector General
September 30, 1998

OIG's Mission, Vision, and Strategic Goals

In April 1998, we began to review our role in assisting the Foundation's mission of enabling discovery and education in science and engineering. We defined our mission, vision, and goals; established new structures and processes to begin to realize our vision; and developed a draft strategic plan. Through this ongoing process we continue to define and refine our aspirations for the National Science Foundation's Office of Inspector General.

In the Inspector General Act, Congress describes our mission: To work together with the Foundation and its programs so that their goals are achieved efficiently and to detect and deter wrongdoing. Our overarching mission is to foster positive change for the Foundation and the community it serves.

Our vision of the office stresses the shared goals between ourselves and the Foundation. Three precepts capsulize our vision:

- Although organizationally and operationally independent, we are part of the Foundation and choose to be inclusive.
- We participate fully in the Foundation's efforts to be flexible and innovative while operating efficiently and with integrity.
- We support the Foundation's mission of enabling discovery and education, and we recommend change in proportion to need and foreseeable benefit.

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To effect this vision, we articulated three broad goals:

- Focus on substantive matters and focus our audits and inspections prospectively.
- Develop fair, accurate, and timely products.
- Create partnerships that enable our customers to achieve their goals.

Furthering Strategic Goals Through Partnerships

We believe that success in creating partnerships is a necessary precondition to success in achieving our product-related goals. To strengthen our partnerships with Foundation management, we created an Audit Coordination Committee, implemented a liaison program, conducted outreach briefings, and participated in Foundation-wide working groups. Through these efforts, Foundation management and our office are taking steps to establish an environment that is conducive to achieving our common goals.

Audit Coordination. Working with the NSF Chief Financial Officer (CFO), we established an Audit Coordination Committee, composed of senior representatives from management and our office, that meets regularly to share information and address issues of mutual concern. This Committee facilitates open dialogue between our office and the CFO on all audit and audit resolution issues, offers advice and guidance to both our office and the CFO, and involves other Foundation managers, such as the Chief Information Officer, as appropriate.

This partnership with the CFO led to development of an innovative framework for cooperation between our office and Foundation management in the audit of the Foundation's financial statements that is required by the Chief Financial Officers Act. In consultation with the NSF Audit Coordination Committee, the Inspector General will select and the CFO will procure an independent, public accounting firm to perform the CFO audit, which will fulfill our statutory responsibility to ensure the quality of the audit. We will also serve as liaison to Congress, the General Accounting Office (GAO), and the Office of Management and Budget (OMB) for queries concerning the audit. To facilitate open communication between Foundation management and the audit contractor, the CFO will designate the technical representative for the contract. The technical representative and our office's liaison will together develop the audit work plan, which the Audit Coordination Committee will review. These efforts ensure that Foundation management will immediately learn about problems that the external contractor identifies and that both Foundation management and our office will have access to audit results as they are developed. The Association of Government Accountants has invited representatives of our office and Foundation management to discuss this innovative partnership framework at a best practices forum to be held at its next meeting.

Outreach Briefings. We initiated a briefing program to explain to agency managers how our mission, vision, and goals shape the way we perform our functions. The briefings also provide an overview of the different kinds of efficiency reviews we perform and integrity cases we handle, and they explain how Foundation and OIG staff assist each other. We plan to expand the program to provide informational briefings for universities and other awardees to strengthen our ties with our "external" partners and to develop linkages that facilitate communication and the resolution of problems.

Liaisons to Management. Liaisons from our office work with each major organizational unit in the Foundation, and they are responsible for having a detailed knowledge of the programs of that unit and are encouraged to attend public events sponsored by them. They will meet frequently with division directors and directorate staff to inform them about efficiency reviews involving their awardees and other matters relevant to their units. The liaison program helps Foundation managers and our staff become better informed about each others' activities, and how our efforts can benefit each other.

Conflicts-of-Interests Briefings and Other Partnering Activities. We are working with the Foundation's Office of General Counsel to develop a new component for the Foundation's mandatory conflicts-of-interests briefing program to encourage Foundation staff to (1) learn about and carefully follow the conflicts rules and, whenever appropriate, obtain written guidance from the Office of General Counsel in order to avoid potentially serious, statutory penalties; and (2) advise our office about information they receive concerning misconduct in science or other wrongdoing. We are also participating in Foundation working groups, including those addressing cost-sharing and security issues. Our involvement facilitates constructive dialogue about efficiency and integrity issues during the development of Foundation programs and policies.

We believe that our initial focus on developing partnerships has already been successful, and we intend to nurture those relationships. Effecting solid relationships with our partners will facilitate success in meeting the following product-related goals.

Focusing Prospectively and on Substance

Because most Foundation funds are expended by awardees external to the Foundation, we focus on awardee activities. Foundation managers are aware of the strengths and weaknesses in their portfolios. We can better focus our resources on substantive matters that are critical to the success of Foundation programs when we, and Foundation managers, share ideas and concerns.

We also emphasize preaward audits and reviews during major program transitions. By working closely with Foundation managers before final decisions are made, we can detect and prevent problems before they become serious and recommend improvements in fiscal management before funds are expended.

Developing Fair, Accurate, and Timely Products

Where our partnerships are most developed, our audits and inspections are improving because our staff increasingly incorporates management’s perspectives and considerations, elicits in-depth information on managerially relevant issues, and provides information and analysis in time for our work to make a difference. We place priority on investigative matters so that they are analyzed expeditiously, without sacrificing fairness or accuracy. We view timely resolution of investigative matters as an essential component of fundamental fairness, and we explain this perspective in ongoing discussions with our partners from the Department of Justice, other federal agencies, awardee institutions, and NSF.

Streamlining the Management of the Office of Inspector General

We have also taken steps to increase collaborative efforts within our office. Our activities are now grouped under two broad headings—efficiency (including audits and inspections) and integrity (including investigations of violations of criminal and civil statutes as well as misconduct in science). In staff training programs, we now emphasize the need for improved coordination of our “efficiency” and “integrity” activities, and we encourage our staff to work on projects in all areas of our office. In our draft strategic plan, we translate our overall mission, vision, and goals into specific efficiency and integrity strategies, each tailored to its distinctive challenges. We expect to integrate our varied activities more fully in the future.

Being Objective, Efficient, and Effective

The Inspector General Act provides offices such as ours the independence to choose how best to perform our mission. We value this independence because it protects our objectivity. By getting to know the Foundation, its managers, and its funded community better, and by working to streamline our operations and lower barriers that offices like ours face, we can retain our objectivity while becoming better informed and more efficient so that our products will be more useful.

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ACRONYMS

CFO	Chief Financial Officer
DOJ	Department of Justice
EHR	Directorate of Education and Human Resources
GAO	General Accounting Office
IAB	Industrial Advisory Board
NGI	Next Generation Internet
OMB	Office of Management and Budget
OPP	Office of Polar Programs
PP&E	Property, Plant, and Equipment
SBIR	Small Business Innovation Research
SIUCRC	State/Industry/University Cooperative Research Center
USAP	U.S. Antarctic Program

REPORTING REQUIREMENTS

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

- Reports issued, significant problems identified, the value of questioned costs and recommendations that funds be put to better use, and NSF's decision in response (or, if none, an explanation of why and a desired timetable for such a decision) 1, 27
- Matters referred to prosecutors, and the resulting prosecutions and convictions 15, 38
- With regard to previously reported recommendations: significant management decisions that were revised, and significant recommendations for which NSF has not completed its response 35, 39
- Legislation and regulations that may affect the efficiency or integrity of NSF's programs 26
- Whether we disagree with any significant decision by NSF management None to Report This Period
- Any matter in which the agency unreasonably refused to provide us with information or assistance None to Report This Period

We are responsible for auditing grants, contracts, and cooperative agreements funded by the Foundation's programs. We review agency operations and ensure that financial, administrative, and programmatic aspects of agency operations are conducted economically and efficiently. We conduct financial audits to determine whether costs claimed by awardees are allowable, reasonable, and properly allocated. Our audits also seek to identify practices that can reasonably be modified in the future, thereby allowing funds to be used for other purposes that our customers consider more important. We also conduct inspections. These on-site, integrated, multi-disciplinary reviews highlight what works well, and they identify problems so that Foundation and funded organizations' managers can improve operations and better achieve research and education goals. We are also responsible for the annual audit of the Foundation's financial statements, which includes evaluations of internal controls and data processing systems.



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Reviews Involving Research Centers

State/Industry/University Cooperative Research Centers

We reviewed three State/Industry/University Cooperative Research Centers (SIUCRC), which are located at State universities. NSF established the SIUCRC program in 1991 to meet national, regional, and local needs in research, education, and development. This program leverages NSF funding with support from State governments, private industry, universities, and other federal agencies. NSF currently supports 12 university-based SIUCRCs. In FY 1999, NSF plans to reduce support for this program by about one-half to \$1.8 million and redirect the funding to other research projects that will strengthen state-industry-university partnerships.

Our reviews identified similar issues at each of the Centers involving shortfalls in matching contributions and the accumulation of cash surpluses from industrial contributions. NSF program managers told us that they found the results of our reviews helpful in managing their programs. They delayed funding two Centers until the issues raised in our reviews are resolved. In addition, program managers advised us they would use the information in our reports concerning surplus cash to improve the management of this and other research center programs.

NSF and State partners jointly monitor the Centers' research activities and operations. Each Center is required to establish an Industrial Advisory Board (IAB) that makes recommendations on all aspects of the Center's research activities and operations. The Centers must support a fundamental research program under the direction of the IAB and research projects that address the technology development interests of the Centers' industry members. The program requires that each Center obtain matching funds from the State and its industrial members in amounts at least equal to NSF's annual contribution. For the purposes of this program, NSF views the State and the State university as separate participants in this partnership. State-matching funds must be "new funds" (an increase in State money over existing State support) that are specifically targeted for use at the Center. If Centers do not receive the required amount of annual State or industrial support, NSF can "phase down" or terminate funding.

Over the life of the awards (ranging from 2 to 6 years) we reviewed, the Centers received \$4,210,000 from NSF. The reviews identified a total of \$2,312,000 in surplus cash that was not being used to fund current Center-related operations and \$1,802,000 in matching funds that might not be obtained or spent before the NSF award's expiration date. Specific findings are described below.

- During the first 6 years of one award, one Center received only \$171,000 of the promised \$1.6 million matching funds from the State. Although progress reports submitted to NSF indicated a State agency provided the matching funds, we found that the university had actually provided the required funding and there was no evidence that the university had received any “new” State funds to support the Center. This practice is inconsistent with the cooperative agreement and with the intent of the program. Its continuation through the next 2 years of the award would result in an additional \$600,000 shortfall in State-matching funds for the Center. This Center also accumulated a \$1.49 million cash surplus from industrial contributions that was not reported to its IAB or to NSF. As a result, the IAB and NSF did not have complete information about the Center’s financial condition when research, operating, and funding decisions were made. We recommended that the Center fully report its financial status to NSF and all IAB members.
- Another Center claimed \$1.13 million of industrial support for a 2-year period. We found that only \$372,000 was consistent with the terms of the award. The Center misreported matching funds and incorrectly categorized research activities. We recommended that NSF reduce the third year’s funding to the Center by \$217,000 to match the Center’s second year, industrial-funding shortfall. We also advised NSF management that industrial support in the Center award’s remaining 2 years is likely to be \$380,000 less than the \$600,000 required under the agreement’s terms and recommended that NSF closely monitor future industrial-matching contributions.
- By spending federal and State funds before industrial funds, a third Center accumulated an \$822,000 cash surplus. Under the terms of the program, all of these funds must be spent by the expiration date of the NSF award. We recommended that NSF ensure the cash surplus is used in furthering the project’s objectives before providing new NSF funding.

We are working with NSF management to resolve these issues through the audit resolution process.

Research Center Agrees to Reduce Administrative Costs

In our September 1997 Semiannual Report (page 8) <<http://www.nsf.gov/cgi-bin/getpub?oig17>>, we reported on our review of a new proposal for a Center devoted to earthquake research at a large northern State university. Our review of the research center’s proposal identified excessive administrative costs in four areas. We recommended that NSF limit the amount of funds it makes available for administrative-related costs and that the research center prepare a documented cost-reduction plan for NSF’s review.

In response to our report, the research foundation provided a proposed strategic plan that addressed the administrative cost concerns. The proposed strategic plan focuses on three strategies: reducing costs, eliminating duplication, and obtaining other sources of funding from State and industrial sources. NSF management agreed to accept the plan. Overall, the research foundation's strategic plan should reduce administrative costs by \$2.36 million over 5 years.

Audits Involving Education and Training Awards

Accounting Guidance for School Districts

We summarized for the Directorate of Education and Human Resources (EHR) the results of our previously completed reviews of 41 awards from NSF's Urban Systemic Initiatives and Teacher Enhancement Program. These awards were issued to 24 elementary and secondary level school districts. They totaled \$46 million and varied in amount from \$100,000 to \$8 million. In addition to NSF's funding, the school districts promised to provide an additional \$59 million in cost sharing.

- Almost half of the school districts claimed salaries and fringe benefit costs (totaling \$5.9 million) without having the necessary time and effort certifications to support the expenses. School districts need to maintain activity reports to decrease the possibility of salaries being incorrectly charged to the awards.
- About 75 percent of the school districts claimed cost sharing without having the financial reports necessary to support the school districts' claims. As a result, about 42 percent of the value of cost sharing claimed were unsupported. We found that half of the school districts reviewed did not have an accounting system that tracked and documented cost sharing. Because cost sharing is approximately 50 percent of total program funding, these deficiencies raise concerns about the ability of these school districts to complete the program objectives as outlined in the award documents.

Many of the school districts had not previously received NSF awards and were not familiar with federal requirements. Accordingly, we recommended that NSF assist the school districts in the development of accounting systems for monitoring, tracking, and documenting salary and cost sharing. NSF management agreed to pursue this recommendation, and we offered to provide advice and assistance to NSF officials in developing a program designed to help school districts meet federal guidelines.

Audits of Education Awards Conducted in This Reporting Period

We conducted financial and compliance audits of NSF education-related awards issued to two state departments of education, two local school districts, a tribal college, and a nonprofit organization. We found that improvements were needed primarily in the grantees' monitoring of cost-sharing efforts and subcontract costs, and we identified some unauthorized expenditures.

- A northeastern state department of education received an NSF Statewide Systemic Initiative award of \$9.7 million. The project's main goals were to increase significantly the science and mathematical literacy skills of students and the numbers and quality of people in the state who pursue careers in science and technology. We found that \$392,725 in claimed costs was questionable because of inadequate support for subgrantee, consultant, travel, and material and supplies costs (\$341,005) and unreasonable meetings and travel costs (\$51,720).
- We conducted an audit of participant support costs, indirect costs, and cost sharing claimed for education and training grants awarded to a local school district in the northwest. These awards supported various projects including training for teachers. We questioned \$62,762 of the \$2,792,591 costs claimed by the school district. The majority of the questioned costs related to expenditures claimed for costs that were not included in the award budgets, and funds budgeted exclusively for participant support that were used by the grantee for other purposes without the required prior approval. We found that the awardees' documentation for approximately \$1 million in cost sharing did not support the full amount claimed and that some of these costs claimed were unallowable.
- We reviewed \$6.4 million claimed by a large southeastern school district on a 5-year, \$12.3 million cooperative agreement awarded to strengthen community partnerships that link mathematics and science learning in the classroom to the real world. The school district lacked adequate systems to monitor participant support costs and cost-sharing contributions. Although the awardee provided documentation that we used to verify these expenses, we recommended that the awardee improve these systems.

- Our audit of a tribal college included a review of awards related to providing students with opportunities in obtaining degrees in computer science and engineering as well as giving them access to the Internet. We questioned \$54,406 of the \$584,876 claimed costs by the grantee. The majority of the questioned costs (\$40,338) related to the college claiming costs to NSF in excess of its recorded costs. We also found that the college did not adequately document and maintain its cost-sharing efforts. We found, for example, that the college claimed \$141,171 in cost sharing for student financial aid that it could not support in its accounting system.

We are working with NSF management to resolve the issues identified in these audits.

Award to an Educational Nonprofit Organization Proceeds After Corrective Action Taken

An NSF program official requested that we conduct a financial review at a southwest educational nonprofit organization. NSF had funded a \$1.7 million Elementary, Secondary, and Informal Education award to the nonprofit organization for a Spanish-language, science education project, and the program official was evaluating a new proposal for a \$1.5 million award to the organization for a similar project.

- We questioned \$54,598 of the \$1.7 million claimed costs related to expenditures unallowable under the current award's conditions. The questioned costs related primarily to certain direct costs that would have been more appropriately charged as indirect costs and amounts budgeted for participant support that were used to fund other expenses.
- We also reviewed the organization's methods and supporting documentation used to develop the \$1.5 million budget for the new award and evaluated the allowability, allocability, and reasonableness of these proposed costs. We concluded that the budget could be reduced by \$79,142, associated with subcontract and fringe benefit costs.

The organization's management agreed with our findings and recommendation related to the costs claimed and the reduction to the proposed budget. The program manager used our report in making his funding decision on the new proposal.

Reviews Involving Ship Operations and Polar Programs

Review of Organization That Conducts Ship Operations Results in Savings

Based upon the recommendation of NSF managers, we reviewed a private, nonprofit organization that conducts oceanographic research and education projects. The organization has an annual operating budget of over \$8 million and receives approximately \$3 million annually from NSF, primarily to fund ship operations and scientific research. Overall, the organization has a high commitment to science and education, and it provided excellent stewardship over NSF and other funds. We made two recommendations that should result in a cost avoidance of \$275,000 annually to NSF, and we identified several procedural issues which, when resolved, may result in additional savings as well as increased accountability for federal funds.

We found that the organization did not submit timely indirect-cost-rate proposals during a period when its indirect cost rates were falling, and during which it needed to make minor adjustments that would have further reduced its rates. We also found that the organization proposed a fringe benefit rate that was significantly higher than its actual rate, which resulted in excess cost recoveries.

We recommended that the organization submit indirect-cost-rate proposals within 6 months of the end of each fiscal year, eliminate a small amount of unallowable charges, and redistribute some charges to non-federal projects. We also recommended that in the future the organization use a lower rate that more accurately reflects the costs of fringe benefits to the institution. Implementing these recommendations should result in annual savings to NSF of more than \$275,000, or \$1.3 million over a 5-year period.

We shared our findings with the cognizant NSF program officials, who agreed with our recommendations. The organization also agreed with the majority of our recommendations. NSF management, in coordination with our office, is resolving the remaining procedural issues.

Savings Associated With Antarctic Flight Operations

In 1993, the Navy advised NSF's Office of Polar Programs (OPP), the office responsible for funding and managing the U.S. Antarctic Program (USAP), that it would discontinue providing logistical support to the USAP. OPP then began to search for organizations that could perform the support the Navy provided, and it planned to transfer the responsibility for various aspects of that support to both government and commercial providers. The Navy's decision afforded an opportunity for OPP to take steps to improve the efficiency of its operations. In partnership with OPP, we began to conduct reviews and analyses of the transfer of functions to other providers.

In our March 1998 Semiannual Report (pages 2-5) <<http://www.nsf.gov/cgi-bin/getpub?oigmarch1998>>, we discussed our analysis of the transition of fixed-wing flight operations. We completed our flight operations review in this reporting period and made additional cost avoidance recommendations, which, if implemented, will increase annual savings by approximately \$641,000 (\$3.2 million over 5 years).

Under the transition plan, a unit of the New York Air National Guard (the Guard) will operate and maintain NSF's fleet of LC-130 ski-equipped aircraft in Antarctica. This aircraft transports personnel, cargo, scientific and construction supplies and equipment, and fuel to McMurdo, the South Pole Station, and remote field sites.

Our recent review focused on the Guard's budget. We questioned several of the proposed line items in the Guard's budget - totaling approximately \$422,400 per year in travel, workday costs, and contingencies built into the budget. We recommended that OPP review these cost proposals with the Guard to determine whether they are necessary and reasonable. We also recommended that OPP propose additional reductions of \$57,100 per year that can be realized by combining travel, limiting the number of personnel scheduled to attend the same conference, and deducting items budgeted by other USAP organizations. These two recommendations represent potential savings of \$479,500 per year, or nearly \$2.4 million over 5 years.

We also recommended that:

- OPP determine whether it is appropriate to pay certain personnel costs the Guard will incur related to training and attendance at conferences. OPP could reduce its costs by \$93,400 annually, and \$467,000 over a 5-year period.
- OPP and the Guard develop a methodology for sharing the annual supply management costs of an aircraft maintenance contract, currently \$84,000 (if

costs were split evenly, OPP would save \$42,000 per year, or \$210,000 over a 5-year period).

- OPP ensure that the costs of supply for ground equipment imbedded within flight hour costs charged by the Guard do not duplicate those already being paid to OPP contractors. For a 3,300-hour flying program (projected annual Antarctic flying hours), OPP would avoid \$26,400 in duplicate costs; over 5 years, the amount avoided would be \$132,000.

Monitoring of the South Pole Construction Project

In an effort to monitor progress on major NSF construction projects, we participated in quarterly progress reviews of the South Pole Station Safety and Environmental and Modernization projects overseen by NSF management. These ongoing reviews focus on procurement, logistics, and construction activities. The reviews are valuable because they identify potential problems or conflicts before they affect the projects, and they identify ways to minimize costs.

We concluded that these reviews appear well suited for monitoring the projects and make it more likely that these projects will be successfully completed as budgeted.

Inspection of the U.S. Arctic Research Commission

The Arctic Research and Policy Act of 1984, as amended (the Act), was enacted because federal Arctic research was considered to be fragmented and uncoordinated. It was perceived that some areas of research were neglected while there was duplication of effort in other areas. The Act established the Arctic Research Commission (the Commission) and an interagency Arctic policy committee, which are responsible for formulating a national Arctic research policy and coordinating federal Arctic research programs with each other and with the national policy.

Although the Commission is an independent federal agency, it is funded through NSF. Since 1985, the Commission received \$5.8 million in funding; however, before this year, the Commission had never been reviewed. This inspection focused on developing an understanding of the Commission and its financial and programmatic activities.

We found that the Commission formulates priorities and recommendations that are comprehensive and well informed and are generally perceived to benefit the Arctic research community. The General Services Administration conducted a financial review of the Commission. We concentrated our efforts in areas not addressed by the General Services Administration audit and made two financial recommendations. We recommended that the Commission pay Commissioners only for actual time spent in performance of Commission duties. We also recommended that, due to the

accumulation of a sizable budget surplus, the Commission include in its annual budget request to NSF a statement of funds obligated and requested by category so NSF and the Congress will have a basis upon which to assess the reasonableness of the Commission's budget requests.

The Commission responded that it intends to modify its procedures in accordance with our recommendations by accounting for Commissioner's compensation in half-day increments and by including a detailed statement of funds obligated and requested in future budget requests. Subsequently, NSF did receive from the Commission an explanation of FY 1998 expenditures, a FY 1999 plan, and the FY 2000 budget request.

In addition, we recommended that NSF implement a streamlined process for expeditiously transferring funding to the Commission at the beginning of each fiscal year. NSF's OPP has begun work to improve the process to ensure timely funding for the Commission.

Issues Involving Research Support

Inspection Involving Physics Research and Education

We reviewed programmatic, financial, and administrative aspects of eight grants awarded to PIs in a university's Physics department. NSF's Directorate made six grants supporting basic research in physics for Mathematical and Physical Sciences and two grants supporting research in physics education were made by NSF's Directorate for Education and Human Resources.

Our report describes our findings on issues of interest to the university and NSF. In our report, we explain that the PIs had generally positive comments about NSF's merit review system, and that most PIs who had used NSF's electronic FastLane system liked the advantages it offered and would continue to use it. We describe some of the advantages students attribute to NSF-sponsored projects, and we mention that the department is recognized as a leader in physics education research and publishes tutorials that are used nationwide.

In our report, we also compliment the University for its exemplary system for monitoring and tracking cost sharing. We made several suggestions to strengthen the University's control over federal funds and ensure compliance with NSF requirements. We suggested that the University revise its travel policy to require prior authorization of federally funded travel and to ensure that travel reimbursements are supported by adequate documentation. We also suggested that the University monitor unexpended award balances more closely and disseminates NSF's policy for the limit on the daily rate of pay to consultants. The University agreed to implement all of our suggestions.

We found the University's procedures to comply with NSF's investigator financial disclosure policy did not ensure that all investigators made disclosures of their possible financial conflicts of interests. The University agreed to revise its procedures to provide training in the PI's responsibilities to meet this requirement. We concluded that the University's misconduct policy was excellent, and the University agreed with our suggestion to make its misconduct policy and procedures more readily available using its Web pages.

Funds for Improving the Intellectual Infrastructure of the Internet

In our March 1997 Semiannual Report (page 10) <<http://www.nsf.gov/cgi-bin/getpub?oig16>>, we described NSF's cooperative agreement with a commercial company that authorizes the company to allocate Internet domain names. Under the terms of the cooperative agreement, the company charged a \$100-registration fee for each domain name issued for the initial 2-year period, and \$50 per year thereafter. The company retained 70 percent of the revenue collected for operating expenses, while the remaining 30 percent were set aside in a separate interest-bearing account "for the preservation and enhancement of the 'Intellectual Infrastructure' of the Internet." The cooperative agreement was revised so that the company stopped collecting the 30 percent for domain names registered on or after April 1, 1998. Contributions to the Fund and accrued interest totaled approximately \$60 million.

In October 1997, Congress authorized NSF to use \$23 million from the funds for NSF to use on Next Generation Internet (NGI) projects. A lawsuit was filed against NSF in federal district court, seeking a refund of the 30-percent portion of the fee and alleging that the fee collected was an unauthorized tax. The court agreed and enjoined NSF from using the money in the Fund pending the outcome of the litigation. In May 1998, Congress passed legislation ratifying the collection of the Intellectual Infrastructure Fund, and directing that it be credited to the NSF Research and Related Activities Account for support of NGI and related Internet activities. In August 1998, the court lifted the injunction and dismissed the lawsuit. NSF thereafter obligated \$23 million for NGI activities. The plaintiffs continue to challenge the congressional ratification, and NSF has agreed not to spend the remainder of the funds now credited to the Foundation's appropriation for a 6-month period pending judicial resolution of the matter.

Issues Involving Administration and Management

Year 2000 Readiness

NSF is required to provide quarterly reports to OMB on the readiness of its computer systems to process date-sensitive information in the year 2000. NSF is also required to have an independent verification and validation of the progress made in its Year 2000 readiness program. We review the quarterly progress reports that NSF submits to OMB and periodically meet with the GAO, which also monitors NSF's Year 2000 readiness program. In addition, we have partnered with the responsible NSF Division by participating on the panel that selected a contractor to conduct the independent verification of NSF's Year 2000 progress, and we are monitoring the actions taken by that contractor.

Audit of NSF's Financial Statements

We are now conducting the third annual audit of NSF's agency-wide financial statements for FY 1998 to comply with the Chief Financial Officers and Government Management Reform Acts, which are intended to bring more effective general and financial management practices to the government by improving systems of accounting, financial management, and internal controls. Our FY 1997 financial statement audit resulted in a "qualified" opinion on both the Statement of Financial Position and the Statement of Operations and Changes in Net Position because we were not able to plan and perform audit procedures to determine whether the Property, Plant, and Equipment (PP&E) balance as of September 30, 1997, was fairly presented.

Consistent with our goal of creating partnerships, the CFO and we created an Audit Coordination Committee. This Committee provides a structure that fosters information exchange, dialogue, and resolution of issues involving the audit of NSF's financial statements. The Committee also serves as a mechanism through which we transferred greater responsibility for management of the contract financial statement audit services to the CFO, while ensuring our independence and the quality of the audit work performed. Building on discussions conducted under the auspices of the Audit Coordinating Committee, the CFO and OIG staffs have already taken steps to resolve complicated, technical issues associated with the financial statement audit including the development of detailed plans for timely completion of audit tests and fieldwork as well as appropriate mechanisms for valuation of, and documentation for, the PP&E related to the Antarctic Program.

Most of the NSF-owned PP&E is related to the U.S. Antarctic Program, and therefore accessible only during the short Austral summer. We developed detailed plans for conducting in December 1998 the physical audit of the equipment, aircraft, buildings, and structures in Antarctica and Christchurch, New Zealand. At our

request, management executives reporting to the CFO and the Chief Information Officer will be present during the fieldwork in order to ensure that any problems we identify can be addressed and resolved promptly.

In May 1998, the President signed a directive mandating that NSF (along with other federal agencies) take necessary steps to obtain unqualified opinions on their financial statements. We are committed to continue to work with NSF management through the Audit Coordination Committee to accomplish that goal.

We are responsible for investigating possible wrongdoing involving organizations or individuals that receive awards from, conduct business with, or work with the Foundation. In investigating these allegations we assess their seriousness and recommend proportionate action. When appropriate, the results of these investigations are referred to the Department of Justice or other prosecutorial authorities for criminal prosecution or civil litigation, or to the Foundation for administrative resolution.

Among our responsibilities are investigating allegations of misconduct in science and engineering, such as falsification, fabrication, and plagiarism. Misconduct in science strikes at the core of the Foundation’s mission, and it is a special concern for our office. In investigating these allegations, we

- evaluate scientists’ conduct according to the ethical standards of their professional communities’ “accepted practices,”
- rely on the professional community at the Foundation and awardee institutions to articulate and evaluate these standards, and
- recommend findings of misconduct in science only for “serious deviations” from those standards.



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Summary of Referrals to Agency Management for Administrative Resolution

Fabrication of Data

We received allegations of research fabrication against a scientist who recently received her doctoral degree. The research misconduct committee in the institution's chemistry department reviewed the evidence and concluded that "the heart of [the scientist's] dissertation [was] based on fraudulent data" and found "a very clear pattern that undermines the entire basis for the research reported in the dissertation." The scientist did not contest the majority of the allegations of fabrication against her and withdrew her dissertation. The institution then rescinded her doctoral degree.

We reviewed the institution's evidence and agreed that the independent research reported in the dissertation had been fabricated by cutting and taping spectra to remove some spectral peaks and add new ones. We agreed with the committee that the willful research fabrications, which undermined the basis for the research in the dissertation, were a serious deviation from accepted practices and, therefore, misconduct in science under NSF's regulation.

We recommended that NSF's adjudicator affirm the seriousness of the subject's actions by finding that the subject committed misconduct in science and by issuing a letter of reprimand. We believe no further action by the government is necessary at this time because the institution's actions were adequate to protect the government's interests, and the subject told us that she has not worked in chemistry since she forfeited her degree. We also recommended that NSF develop a notification requirement so that, if the subject works on federally supported scientific or engineering research or education within the next 3 years, appropriate safeguards could be in place.

Plagiarism in Science Education Proposal

We reviewed evidence of plagiarism in an NSF-supported education project. Almost the entire text of the proposal was identical or substantially similar to that of an earlier proposal (the source) submitted by educators at another university. The experienced PI and co-PI (the subjects) who submitted the allegedly plagiarized proposal stated in their proposal that their project would be modeled after the source project and would draw extensively on educational materials originally developed for that project. However, the subjects did not indicate that the language of their proposal was taken directly from another source and was not original to their proposal.

We referred the case to the subjects' university for investigation. The university concluded that the proposal was plagiarized, that its submission constituted misconduct in science, and that both subjects were responsible for the misconduct.

The university decided that the PI should write letters of apology to NSF and the authors of the source proposal; attest that future applications for support consist of original or properly attributed prose and ideas; and resign his position as Distinguished University Professor (while retaining his tenure, rank, and other university positions). The PI complied with the university's sanctions. The university also placed a letter of reprimand in the PI's personnel file, which will be removed after 3 years if there is no further evidence of misconduct. The university's recommendations regarding the co-PI were similar. When the co-PI did not comply with the university's request that he resign his title of Emeritus, the university stripped him of it.

Research scientists generally consider plagiarism a serious violation of professional standards. The university's investigation committee considered and rejected the idea that, with regard to plagiarism, professional standards in science education were materially different from those in scientific research, and we urged NSF to endorse this view.

We believe the large amount of verbatim plagiarism and the subjects' many years of professional experience contribute to the seriousness of the misconduct in this case. However, there are mitigating factors, including that the subjects stated that their project was modeled after the source project and that the subjects' misconduct appeared to be an isolated incident.

We recommended that NSF join the university in concluding that the subjects' actions constitute misconduct in science and send each subject an appropriate letter of reprimand. We concluded that the university's actions were otherwise sufficient to protect NSF's interests and render additional NSF action unnecessary.

NSF Proposes to Debar Student

In our September 1997 Semiannual Report (pages 40-41) <<http://www.nsf.gov/cgi-bin/getpub?oig17>>, we described the case of a student who, over an 11-month period, falsified 31 timesheets and fabricated data in connection with her work in two different research laboratories to justify her claims on the timesheets. She was convicted of a misdemeanor in a state court. The agency agreed with our recommendations and concluded that the student committed misconduct in science. Because of the seriousness of the fabrications and falsifications and the conviction, NSF proposed to debar her for 1 year.

Review of Research Center’s Policy for Payment of Administrative Costs

We received allegations that a research center at a state university had a policy designed to capture, for general administrative purposes, approximately \$40,000 per year nominally requested by center faculty—and awarded by NSF—for research.

We determined that the center required faculty to transfer to the center from grant funds about 10 percent of their academic year salary before the center would authorize requests by the faculty for summer salary to be paid out of grant funds. At the center, this transfer was commonly referred to as a “tithe.” These NSF grants generally did not fund salaries during the academic year. The center adjusted its accounting records for the period in which a faculty member’s salary had been funded by the center to reflect a level of effort on the NSF award equal to the amount of the tithe, thus unencumbering the center’s funds. The effect of the tithe was that funds in a sponsored research account—which are available for use by the faculty member for research purposes—were transferred to an account available for use by center administration for any purpose. The tithe thereby directly reduced the funds available to the faculty member for research, while increasing funds available for administration by the center. The tithing policy was not expressly disclosed by the center in its proposals to NSF.

Even though the awards did not expressly contain funding for academic year salaries, some NSF program officers advised us that, had they known, they might not have objected to funds being used for that purpose. Nonetheless, in our view, the tithe amounted to a questionable conversion of direct-cost funds into indirect-cost funds in a manner inconsistent with NSF’s policy on the payment of salaries from NSF awards. In addition, the nondisclosure of the tithing policy caused NSF program staff and reviewers to evaluate requests for funds that proposals identified as research costs when the center intended to use the funds for administrative purposes.

We recommended that the center discontinue the tithing policy or explicitly disclose it in proposals to NSF so that reviewers and NSF management can formally evaluate it. In response to our report, the center discontinued the tithing policy. As a result, over the next 5 years approximately \$200,000 of NSF funds will be used by the center in direct support of research, and the center’s proposal budgets will contain accurate representations.

Summary of Cases Referred to Prosecutorial Authorities

Scientist Convicted of Submission of False Statements and Obstruction of Justice

A scientist submitted false and forged documents to NSF in an attempt to receive NSF's Alan T. Waterman Award, worth \$500,000, as well as a \$200,000 CAREER award. This scientist (1) forged the Waterman nomination form, along with two Waterman reference forms; (2) altered a letter from a colleague and submitted it as a reference for the Waterman Award; and (3) submitted another false document as part of his CAREER proposal. The scientist also attempted to obstruct our investigation by repeatedly contacting witnesses and soliciting false statements that the witnesses had authorized him to write and submit forged documents. We referred this matter to the U.S. Attorney's Office, and a federal grand jury indicted the scientist on five counts of false statements (18 U.S.C. § 1001) and two counts of obstruction of justice (18 U.S.C. § 1505).

In May 1998, a federal jury found the scientist guilty of all felony counts. The scientist failed to appear in court for a scheduled September sentencing date and was indicted under 18 U.S.C. § 3146, *Penalty for Failure to Appear*. On September 30, 1998, the scientist surrendered to the U.S. Marshals and is currently in custody and being held without bond.

Civil Settlement Involving Duplicate SBIR Proposals

We were a lead agency on an investigation of a company that may have submitted similar or identical Small Business Innovation Research (SBIR) proposals to NSF, the Department of Defense, and the National Aeronautical Space Administration without disclosing prior submissions. The company's proposals contained certifications and affirmative statements that substantially similar or identical proposals and awards had not previously been submitted or received from other agencies' SBIR programs, as required in the SBIR solicitations.

The multi-agency investigation disclosed that the duplicative proposals had been submitted from one of the company's four research divisions and that these proposals represented a small percentage of the company's overall research efforts. The researchers responsible for the duplicative proposals have left the company, thereby reducing the likelihood that duplicative proposals will be submitted by the company in the future. As a precaution, the company agreed to establish internal procedures to ensure that the company follows all SBIR requirements, including notifying agencies if

similar proposals are submitted. The company also agreed to pay \$547,000 in a civil settlement with the government.

Small Business Owner Did Not Submit Explicitly False Statements

In our March 1997 Semiannual Report (page 34) <<http://www.nsf.gov/cgi-bin/getpub?oig16>>, we reported that a federal jury found that a small business owner submitted forms with false information that fraudulently caused NSF to remit nearly \$50,000 to him after he had stopped doing any research. In this reporting period, an appellate court ruled that the forms in question did not create a sufficient basis for the jury to conclude that the small business owner made explicitly false statements. The appellate court concluded that the NSF forms did not require the scientist to make explicit representations about how previously received funds had been spent or future funds would be spent. However, the appellate court said it was indisputable that the government could sue the scientist civilly for unjust enrichment, and Department of Justice (DOJ) is evaluating this option.

NSF's current and proposed procedures for handling payment requests should reduce the likelihood of a similar situation recurring and better enable the government to take legal action if a similar case arises in the future. New awardees are now subjected to greater scrutiny of their financial systems to determine whether they qualify to receive advance payments, and special conditions and certifications are imposed when appropriate. The Federal Cash Transaction Reports contain explicit statements that federal funds received under the NSF award were expended properly, and NSF now retains them 10 years. SBIR awardees must provide progress reports with their payment requests and certify that "the work for which payment is hereby requested was performed in accordance with the award terms and conditions" In addition, NSF's FastLane system, which will replace the current paper system with an almost entirely electronic proposal and award process, will require a similar personal certification with every payment request. These procedures should adequately protect the government in the future.

Civil Settlement Involving Honoraria

In June 1998, DOJ filed a civil complaint in a U.S. District Court alleging that an NSF official received four honoraria payments, totaling \$4,900, for giving speeches that directly related to his official position, a violation of 18 U.S.C. § 209, *Salary of Government Officials and Employees Payable Only by United States*. To resolve this issue, the official agreed to pay the government \$24,900 as a civil settlement. In addition, NSF reprimanded the official for his non-willful violation of § 209 and required the official to obtain written clearance from the Office of General Counsel for all travel and speaking activities. In August 1998, the official paid the civil settlement

and, at DOJ's request, the court dismissed the case. (We discussed this matter in our September 1997 <<http://www.nsf.gov/cgi-bin/getpub?oig17>> and March 1998 <<http://www.nsf.gov/cgi-bin/getpub?oigmarch1998>> Semiannual Reports, pages 29 and 23, respectively.)

Contractor's Employee Accepts Improper Gifts

An NSF contractor received an allegation that an employee had solicited and accepted gifts from one of its transportation vendors. The contractor conducted a review and determined that the allegations were credible. The contractor immediately placed the employee on administrative leave and informed NSF's Office of Contracts, Policy and Oversight, which then notified our office. After reviewing the contractor's documentation, we determined that the alleged actions may have violated the *Anti-Kickback Act of 1986*, 41 U.S.C. §§ 51-58. We worked with the NSF contractor to investigate this matter and conducted a systemic review of the contractor's shipping process.

The vendor admitted presenting gifts to the employee over 3 consecutive years, and the employee admitted receiving gifts, including a television set, a computer, and a satellite dish. The vendor claimed that it did not believe that it had violated any federal laws by presenting gifts to an employee of a government contractor. The employee admitted that he was aware that he should not accept gifts from the vendor, but claimed that he exchanged gifts based on their personal relationship.

We did not find evidence that the employee improperly influenced events in favor of the vendor or that the vendor presented the gifts with the intent to influence the government contractor. We also found no evidence that the NSF contractor overpaid for services, paid for services not received, or inappropriately diverted work to the vendor. During the investigation the employee resigned, and we referred our findings to the cognizant U.S. Attorney's Office, which declined prosecution based on the lack of criminal intent.

We identified certain administrative weaknesses in the contractor's operation: services were procured without competitive bidding, invoices were approved for payment without verifying back-up documentation, and employees may not have been fully aware of the contractor's policy on accepting gifts. We discussed these weaknesses with the contractor's manager and the contractor has proposed a plan of action to address these weaknesses. We are coordinating resolution of these issues with NSF management.

Matters Pending With Prosecutorial Authorities

Intentional diversion of NSF funds for personal use is a criminal act that can be prosecuted under several statutes, and investigation of diversion allegations is a priority. We encourage universities and other grantees to notify NSF of any significant problems relating to the misuse of NSF funds. Early notification of significant problems increases our ability to investigate allegations and take corrective action to protect NSF and its grantees. We worked with prosecutorial authorities on four cases involving the diversion of grant funds by grantee officials. One of these diversion cases is scheduled for trial later this year.

Another focus of our investigative resources involves individuals or grantees that allegedly received grant funds by submitting false statements to NSF. The NSF peer review process is premised on the truthfulness of information submitted to NSF in proposals and progress reports. A material false statement in a proposal or progress report could result in NSF funds being improperly awarded. Along with the cases previously discussed in this report, we worked with prosecutorial authorities on five additional cases involving allegedly false statements that were submitted to NSF in proposals or progress reports. We also provided assistance to other law enforcement agencies in three ongoing investigations involving government contractors that allegedly charged expenses improperly on their government contracts or made false representations in their contract proposals to NSF and other federal agencies. The three cases have been referred to DOJ for appropriate resolution.

Statistical Analysis of Misconduct Cases

We frequently receive questions about the characteristics of our misconduct in science cases. We recently analyzed our closed misconduct cases to develop a profile that includes statistics about allegations, subjects, and complainants. For the purposes of this study, we divided allegations we received into five categories: fabrication, falsification, plagiarism, retaliation, and “other.” The “other” category includes allegations that may under some circumstances constitute serious deviations from accepted practices, such as violation of the confidentiality of peer review; false statements in a proposal or report to NSF; and abuse or exploitation of subordinates, coworkers, or colleagues. We also received allegations that were ultimately not considered misconduct in science.

Many of our cases contain multiple allegations; we found a total of 674 allegations in the 359 cases closed from the inception of our office on March 1, 1989, through July 31, 1998. Although 62 percent of the cases contained a single allegation, some had far more. The most common allegations were plagiarism (31 percent), false statements in a proposal or report to NSF (11 percent), and abuse or exploitation of

subordinates, coworkers, or colleagues (8 percent). The least common allegations were violation of regulations (3 percent), sabotage (1 percent), and discrimination (1 percent). Our cases are spread across the disciplines in which NSF supports science and engineering research or education, including biology, engineering, education, mathematics, geological sciences, social sciences, chemistry, and physics. The cases are not evenly distributed among the disciplines, with the greatest numbers in biology and engineering and the smallest in physics. It is unclear what factors contribute to this uneven distribution.

The typical case has one subject who is a faculty member at a university or college. Many of our complainants are NSF reviewers (27 percent) or faculty members (36 percent). In 57 percent of our closed cases, NSF staff initially referred the allegations to our office as required by NSF policy.

Most cases, 85 percent, were closed following an inquiry, and more than half of these cases were closed without contacting the subject. The remaining 15 percent of the cases proceeded to the investigation stage. Of these 45 percent resulted in reports to the Deputy Director recommending findings of misconduct. Three cases were resolved through the DOJ: one through a stipulation including an admission of intellectual theft, and two in which the subjects stipulated that their practices seriously deviated from accepted practices under NSF's misconduct regulation. In response to our recommendations, the Deputy Director agreed to take action in all but one case. Of the cases in which the Deputy Director found misconduct, 67 percent were plagiarism, 21 percent were falsification, and 13 percent were other, which included the subject's violation of human subjects regulations and serious abuses in the mentoring of students and colleagues in relation to the conduct of the research. The Deputy Director's actions were generally consistent with our recommendations, although the duration of imposed certifications and assurances was sometimes shorter than we recommended.

Our analysis provides answers to many of the questions we receive from the scientific community (both inside and outside of NSF) about the statistical characteristics of our cases.

Summary of Significant Misconduct Cases Closed This Period

This period we closed 19 cases after a misconduct inquiry and resolved 15 other matters that were brought to our attention. Some of these latter matters were management concerns that we forwarded to the appropriate NSF office, and some appeared to raise misconduct-in-science issues, but we could not obtain sufficient information to proceed. Several of the misconduct cases contained multiple allegations of misconduct in science. Each, however, can be described by a single primary allegation. The primary allegations include theft of ideas (12 cases), verbatim plagiarism (4 cases), misrepresentations in an NSF proposal (2 cases), and improper review of an NSF proposal (1 case). We contacted the subject in two cases and obtained technical advice from a program officer as an expert scientist or engineer in three instances.

One closed case involving alleged misrepresentation in an NSF proposal highlights the need to carefully cite the status of manuscripts. The scientist allegedly listed three manuscripts falsely in his proposal as “submitted” to journals. During the inquiry conducted by the scientist’s department, the scientist told the committee that he had hoped that by listing the three manuscripts as “submitted” it would encourage him to finish writing the manuscripts. He also said that he had discussed the listing of these specific manuscripts with his department chair and another faculty member before submitting his proposal. The inquiry committee determined that the scientist apparently misunderstood the chair’s comments. It concluded that, although the scientist’s behavior was careless and showed poor judgment, it did not rise to the level of misconduct in science. The institution’s director reprimanded the scientist. We determined that the scientist did not claim the manuscripts had been “accepted” or “in press,” that the work was substantially completed for the manuscripts when he submitted his proposal, and that there was no evidence of a pattern to the subject’s behavior. We concurred with the committee’s conclusion and wrote the scientist informing him of our decision to close the case and of NSF’s expectations about scholarship.

Three of the cases we closed highlight problems arising in collaborative relationships. In the first case, the PI submitted a proposal to NSF that referenced the results of another scientist as “personal communications.” The PI, who had previously collaborated with the scientist on this topic, told the scientist that she would be a co-PI on his proposal. The scientist did not see the proposal before its submission, but when she received a copy from the PI she observed that she was not listed as co-PI. She thought that the PI’s references to her work were inadequate, that he took credit for her accomplishments, and that his proposal contained research that she had intended to do. We concluded the PI’s actions breached professional standards, but he referenced the

scientist's contributions sufficiently, so his actions were unfair but did not rise to the level of misconduct. We closed the case, informing him of our conclusions and expressing our concern about the way in which he used the other scientist's information in his proposal.

Another case involved a young scientist who was alleged to have copied text as well as the ideas for several research projects from his former graduate advisor's proposal into his proposal. The scientist explained and documented that he had written the text appearing in his advisor's proposal while working with the advisor. The advisor confirmed the scientist's role in preparing the text used in both proposals. Further, the scientist explained that, although some of the projects in the two proposals were similar, the technique he proposed to use was significantly different from that described in the advisor's proposal. We concluded that the collaborative relationship between the scientist and the advisor had worked well and that their use of text jointly prepared as part of the collaborative effort is acceptable practice.

A third case involved a scientist who had allegedly paraphrased three sentences of text from another researcher's publication in two separate sections of his proposal without acknowledging the source of the text. We found that these sentences had come from a paper describing a panel's effort, and the scientist had served on that panel. We determined that, if the scientist copied these three sentences without appropriate acknowledgment, it would have been a deviation from the accepted practices of the scientific community, but not sufficiently serious to proceed to an investigation. We informed the scientist of both the allegation and our decision not to proceed further, and suggested that, in the future, he fully acknowledge sources of information to avoid possible allegations of misconduct in science.

Possible Amendments to the Inspector General Act

This year marks the 20th anniversary of the Inspector General Act. There are several legislative proposals being considered that are designed to improve the operations of all Inspectors General. Among the issues being considered are whether to have annual instead of semiannual reports to the Congress, the best content for those reports, and whether and how to enhance the ability of OIGs to carry out their mission.

Our Office of Inspector General benefits greatly from the advice and guidance we receive from eminent executives, scientists, and engineers who serve on the National Science Board. We believe that a similar method for obtaining advice and guidance would serve the entire Inspector General community well. For this reason, we recommend Congress consider creating an oversight board, consisting of experts from within and outside the government in the areas of management, investigation, and audit, that would provide advice and guidance on the many complex issues facing Inspectors General, including, for example, the best role for an Inspector General, policy issues involving audits and investigations, best practices for interactions between management and Inspectors General, and appropriate mechanisms for reviewing Inspectors General.

One of the bills in the 105th Congress proposed to consolidate the Foundation's Office of Inspector General with another IG office. We do not believe this proposal is in the best interest of the Foundation. NSF is the only agency in the federal government devoted solely to the support of scientific and engineering research and education. To conduct audits and investigations involving the Foundation that are effective it is important that the IG office be tailored to, and understand NSF's mission and culture of support for science and engineering education and research. NSF's OIG is also the only OIG in government with responsibility for investigating allegations of misconduct in science. Assessing these allegations requires knowledge of and sensitivity to the ethical practices and mores of the scientific community funded by the Foundation. In addition, in order to promote efficiency and deter improper activities, it is very productive for the IG to participate in the regular meetings that the NSF Director and Deputy Director hold with their senior staff. In our opinion, this will only occur if the senior executive team at NSF considers the IG's office to be part of the overall Foundation.

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AUDIT REPORTS ISSUED WITH RECOMMENDATIONS FOR BETTER USE OF FUNDS

	<u>Dollar Value</u>
A. For which no management decision has been made by the commencement of the reporting period	86,998,356
B. Recommendations that were issued during the reporting period (these were issued in 5 reports)	5,699,642
C. Adjustment resulting from resolution process	(444,775)
Subtotal of A+B+C	92,253,223
D. For which a management decision was made during the reporting period based on legislative action*	60,000,000
E. For which a management decision was made during the reporting period based on the OIG recommended action	25,712,812
(i) dollar value of management decisions that were consistent with OIG recommendations	24,659,197
(ii) dollar value of recommendations that were not agreed to by management	1,053,615
F. For which no management decision had been made by the end of the reporting period	6,540,411
For which no management decision was made within 6 months of issuance	919,911

* These funds are the subject of litigation. The U.S. District Court ruled in favor of the government and the matter is now under review by the U.S. Court of Appeals.

AUDIT REPORTS ISSUED WITH QUESTIONED COST

	Number	Questioned Costs	Unsupported Costs
A. For which no management decision has been made by the commencement of the reporting period	43	11,168,509	4,947,024
B. That were issued during the reporting period	17	1,279,446	939,276
C. Adjustments to questioned costs resulting from resolution activities	0	0	0
Subtotal of A+B+C	60	12,447,955	5,886,300
D. For which a management decision was made during the reporting period	21	1,809,333	776,154
(i) dollar value of disallowed costs	N/A	342,188	N/A
(ii) dollar value of costs not disallowed	N/A	1,467,145	N/A
E. For which no management decision had been made by the end of the reporting period	39	10,638,622	5,110,146
For which no management decision was made within 6 months of issuance	31	9,658,745	4,369,225

ADDITIONAL PERFORMANCE MEASURES

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

Tables that provide statistics concerning these required performance measures are on pages 38 and 39. GAO and OMB suggested that Offices of Inspector General develop additional performance measures that provide information about their activities. As a result, we developed two additional performance measures to provide additional insights about the work of our office. The two additional measures are “Cost Sharing Shortfalls” and “Systemic Recommendations.”

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

We divide cost-sharing shortfalls into two categories. Shortfalls occurring during the life of a project indicate that the grantee may not be able to provide all promised resources from non-federal sources before completing the project. Shortfalls that remain when a project is complete demonstrate that a grantee has in fact not met cost-sharing obligations; these findings result in formal questioned costs. The table on page 31 provides statistical information about shortfalls occurring during the course of a project and at the completion of the project.

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

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

We routinely track these systemic recommendations and report to NSF’s Director and Deputy Director quarterly about the status of our recommendations. The table on page 32 provides statistical information about the status of all systemic recommendations that involve NSF’s internal operations.

AUDIT REPORTS INVOLVING COST-SHARING SHORTFALLS

	Number of Reports	Cost-Sharing Promised	At Risk of Cost-Sharing Shortfall/ (Ongoing Project)	Cost-Sharing Shortfalls at Completion of the Project
A. For which no management decision has been made by the beginning of the reporting period				
1. Reports with monetary findings	17	45,739,569	24,808,907	268,097
2. Reports with compliance findings	0	N/A	N/A	N/A
B. That were issued during the reporting period				
1. Reports with monetary findings	4	4,019,724	2,050,073	1,371,190
2. Reports with compliance findings	4	N/A	N/A	N/A
Total of Reports With Cost-Sharing Findings (A1 + A2 + B1 + B2)	25	49,759,293	26,858,980	1,639,287
C. For which a management decision was made during the reporting period				
1. Dollar value of cost-sharing shortfall that grantee agrees to provide	2	13,134	2,773	0
2. Dollar value of cost-sharing shortfall that management waives	0	0	0	0
3. Compliance recommendations with which management agreed	2	N/A	N/A	N/A
4. Compliance recommendation with which management disagreed	0	N/A	N/A	N/A
D. For which no management decision has been made by the end of the reporting period				
1. Reports with monetary findings	19	49,746,159	26,856,207	1,639,287
2. Reports with compliance findings	2	N/A	N/A	N/A

STATUS OF SYSTEMIC RECOMMENDATIONS THAT INVOLVE INTERNAL NSF MANAGEMENT

Open Recommendations

Recommendations Open at the Beginning of the Reporting Period	34
New Recommendations Made During Reporting Period	9
Total Recommendations to be Addressed	43

Management Resolution of Recommendations¹

Awaiting Resolution	5
Resolved Consistent With OIG Recommendations	38

Management Decision That No Action is Required 0

Final Action on OIG Recommendations

Final Action Completed	32
Recommendations Open at End of Period	11

Aging of Open Recommendations

Awaiting Management Resolution:	
0 through 6 Months	5
7 through 12 Months	0
more than 12 Months	0

Awaiting Final Action After Resolution²

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

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

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

LIST OF REPORTS

NSF and CPA Performed Reviews

Report Number	Subject	Questioned Costs	Unsupported Costs	Better Use of Funds	Cost Sharing At-Risk
98-1022	Superintendent of Schools	11,828	11,828	0	0
98-1024	School District	62,762	24,135	0	1,067,673
98-1025	Science Center	3,910	0	0	0
98-1026	Research Institute	5,917	0	0	0
98-1027	Educational Organization	160,961	149,205	0	0
98-1028	Tribal College	54,406	47,358	0	0
98-1029	Research Foundation	0	0	217,000	380,000
98-1030	University Foundation	27,068	0	0	0
98-1031	Engineering Center	0	0	0	600,000
98-1032	Department of Education	392,725	341,005	0	0
98-1033	Academy of Science	381,461	328,423	0	2,400
98-1035	Research Station	1,616	0	1,375,000	0
98-2005	International Ocean Drilling	0	0	0	0
98-2006	Ocean Drilling Project	0	0	0	0
98-2007	Flight Operations	0	0	3,206,500	0
98-2008	School District Awards	0	0	0	0
98-6006	Public School System	0	0	0	0
98-6007	Foundation	54,598	20,819	79,142	0
98-6008	Corporation	0	0	0	0
98-6009	Company	0	0	0	0
98-6010	Research Center	0	0	822,000	0
98-6011	Science Museum	0	0	0	0
98-6012	Research Center	0	0	0	0
98-6013	Research Center	0	0	0	0
	Total	1,157,252	922,773	5,699,642	2,050,073

LIST OF REPORTS

NSF-Cognizant Reports

Report Number	Subject	Questioned Costs	Unsupported Costs	Cost Sharing At-Risk
98-4034	Research Station	16,503	16,503	0
98-4036	Study Center	41,172	0	0
	Total	57,675	16,503	0

Other Federal Audits

Report Number	Subject	Questioned Costs	Unsupported Costs
98-5138	State University	212	0
98-5139	Organization	18,572	0
98-5182	Corporation	45,535	0
98-5198	University	200	0
	Total	64,519	0

AUDIT REPORTS WITH OUTSTANDING MANAGEMENT DECISIONS

This section identifies audit reports involving questioned costs, funds put to better use, and cost sharing at risk where management had not made a final decision on the corrective action necessary for report resolution within 6 months of the report's issue date. At the end of the reporting period, there were 31 audit reports with questioned costs, 3 reports with recommendations for funds to be put to better use, and 12 items involving cost sharing at risk. The status of systemic recommendations that involve internal NSF management are described on page 32.

Report Number	Title	Date Report Issued	Dollar Value	Status
Items Involving Questioned Costs				
95-5722	State Government	09/22/95	113,204	1
96-1003	State Educational Agency	11/14/95	514,268	1
96-1014	Research Association	03/20/96	211,879	1
96-1027	Company	03/28/96	828,915	1
96-1031	Learning Center	09/30/96	337,377	1
97-1004	Public School System	02/07/97	130,996	1
97-1010	Private University	03/13/97	451,147	1
97-1018	Independent School District	06/20/97	173,877	1
97-1021	Public School System	08/07/97	49,455	1
97-1023	State University	09/30/97	134,358	1
97-1024	Unified School District	09/03/97	52,151	1
97-1025	Independent School District	09/04/97	345,937	1
97-1027	Unified School District	09/17/97	133,478	1
97-1028	Science & Math School	09/19/97	251,639	1
97-1032	City Communications Co.	09/30/97	49,194	1
97-2105	FFRDC Contracts	03/31/97	641,129	1
98-1003	County School District	12/02/97	285,309	1
98-1004	Public School System	12/17/97	225,938	1
98-1006	Board of Education	12/18/97	2,071,176	1
98-1007	School District	12/29/97	96,944	1
98-1008	Institute Science Museum	01/28/98	5,534	1
98-1011	College	02/24/98	35,167	1
98-1013	School District	03/30/98	41,222	1

Status Codes

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

AUDIT REPORTS WITH OUTSTANDING MANAGEMENT DECISIONS

Report Number	Title	Date Report Issued	Dollar Value	Status
Items Involving Questioned Costs				
98-1015	Institute	03/16/98	103,123	1
98-1016	Technical Institute	03/31/98	109,887	1
98-1017	Public School System	03/31/98	104,658	1
98-1018	Company	03/31/98	705,125	1
98-1019	Department of Education	03/31/98	1,099,207	1
98-1021	Traineeships	03/31/98	259,556	1
98-4011	Telecommunication Institute	03/31/98	65,695	1
98-5104	College	02/10/98	31,200	1
	Total		9,658,745	
Items Involving Funds Put to Better Use				
98-1008	Science Museum	01/28/98	87,000	3
98-1014	Public TV Station	03/31/98	294,095	3
98-1017	Public School System	03/31/98	538,816	3
	Total		919,911	
Items Involving Cost Sharing at Risk				
97-1004	Public School System	02/07/97	0	2
97-1021	Public School System	08/07/97	292,352	2
97-1023	University	09/30/97	0	2
97-1024	Unified School District	09/03/97	822,279	2
97-1025	Independent School District	09/04/97	11,511,738	2
97-1027	Unified School District	09/17/98	624,626	2
97-1028	Science & Math School	09/19/97	0	2
98-1003	School District	12/02/97	510,310	2

Status Codes

1 = Resolution is progressing with final action expected in next reporting period.

2 = Information requested from grantee not yet received in full.

3 = Further negotiations required before resolution.

AUDIT REPORTS WITH OUTSTANDING MANAGEMENT DECISIONS

Report Number	Title	Date Report Issued	Dollar Value	Status
Items Involving Cost Sharing at Risk				
98-1006	Board of Education	12/18/97	366,611	2
98-1007	School District	12/29/97	1,682,785	2
98-1015	Institute	03/16/98	7,700	2
98-1018	Company	03/31/98	8,987,733	2
	Total		24,806,134	

Status Codes

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

INVESTIGATIVE ACTIVITY AND STATISTICS

Investigative Activity

Active Cases From Previous Reporting Period	41
New Allegations	26
Total Cases	67
Cases Closed After Preliminary Assessments	0
Cases Closed After Inquiry/Investigation	20
Total Cases Closed	20
Active Cases	47

Investigative Statistics

New Referrals	2
Referrals From Previous Reporting Period	12
Prosecutorial Declinations	2
Indictments (including criminal complaints)	1
Criminal Convictions/Pleas	1
Civil Settlements	2
Administrative Actions	1
Investigative Recoveries*	\$791,505

*Investigative recoveries comprise civil penalties and criminal fines and restitutions as well as specific cost savings for the government. Investigative recoveries include government-wide recoveries on one case where NSF was a lead investigative agency.

MISCONDUCT CASE ACTIVITY AND ASSURANCE/CERTIFICATIONS RECEIVED

Misconduct Case Activity

	FY 1998 First Half	FY 1998 Last Half
Active Cases From Prior Period	48	58
Received During Period	33	15
Closed Out During Period	23	20
In-Process at End of Period	58	53
Cases Forwarded to the Office of the Director During Period for Adjudication	1	2
Cases Reported in Prior Periods With No Adjudication by the Office of the Director	3	3*

*Two of these cases are described in our September 1997 Semiannual Report, pages 36 through 39 <<http://www.nsf.gov/cgi-bin/getpub?oig17>>, and in our March 1998 Semiannual Report, pages 27 and 28 <<http://www.nsf.gov/cgi-bin/getpub?oigmarch1998>>.

Assurances and Certifications Received*

Number of Cases Requiring Assurances at End of Period	2
Number of Cases Requiring Certifications at End of Period	2
Assurances Received During This Period	0
Certifications Received During This Period	0
Number of Debarments in Effect at the End of Period	4

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

GLOSSARY

Funds to be Put to Better Use

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

Questioned Cost

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

NSF’s Definition of Misconduct in Science and Engineering

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

For more information write:

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visit our web site:

www.nsf.gov/cgi-bin/getpub?oigseptember1998

or use our
Electronic Mail Hotline:

oig@nsf.gov

**SEMIANNUAL REPORT
TO THE
CONGRESS**



**OFFICE OF INSPECTOR GENERAL
NATIONAL SCIENCE FOUNDATION**