

# Audits & Reviews

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## Significant Reports

The following audit reports issued in the past six months contribute additional information about the challenges NSF faces in improving its post-award monitoring program, and underscore the need for prompt action on the part of the agency. Though different in many respects, most of the problems cited below would be mitigated if more attention were given to post-award administration.

An effective post-award monitoring program should ensure that: awardees are complying with award terms and conditions and federal regulations; adequate progress is being made toward achieving the objectives and milestones of the funded research project and; awardee expenditures listed on NSF's financial statements represent costs that are accurate and allowable. While NSF has taken some steps over the past three years toward establishing a risk-based program for post-award monitoring of its grants, the audits discussed below suggest that more needs to be done.

### ***Fiscal Year 2004 Independent Auditors Issue Unqualified Opinion, Recognize Need for Improved Award Oversight***

In accordance with the Chief Financial Officer's Act of 1990, KPMG LLP conducted an audit of NSF's financial statements for Fiscal Year (FY) 2004 and issued another unqualified opinion to NSF. However, the auditors identified post-award monitoring as a reportable condition for the fourth consecutive year. The

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auditors also identified a second reportable condition on NSF's monitoring of its largest contractors.

NSF funds over 10,000 new awards annually. At any point in time, NSF is administering as many as 30,000 ongoing awards amounting to more than \$5 billion to support basic science and engineering research and education. Assessing scientific progress and ensuring effective financial and administrative oversight of these funds are critical elements in managing NSF's award programs. However, in FY 2004 the auditors found that NSF must broaden its approach to award monitoring. Specifically: (1) NSF's current risk model for focusing its monitoring efforts does not adequately capture all high-risk awardees; (2) NSF's award-monitoring program does not address procedures for both baseline and advanced monitoring depending on the financial risk of the award; (3) NSF needs to provide a detailed response to suggestions included in the report: *Post Award Monitoring Assessment* prepared by a consultant under contract to the agency; and (4) NSF needs to increase the resources dedicated to its post-award monitoring efforts.

The independent auditor identified similar problems with NSF's process of monitoring the financial performance of its largest contractors who receive advance payments. The auditors found that: (1) NSF does not adequately review the public vouchers submitted by the contractors who receive advance payments to ensure that the reported expenditures are proper and allowable under the contracts; and (2) the contractors did not certify the public vouchers as representing valid and authorized expenditures under the contract. Without adequately performing such procedures, misstatements and unauthorized expenditures of substantial amounts may go undetected. In FY 2004, NSF acquired approximately \$388 million in goods and services through outside vendors, including an estimated \$192 million or 57 percent paid through advance payments to NSF's three largest contractors for logistical and support services for polar and ocean research.

In February, NSF submitted its proposed action plans to address the six recommendations related to these reportable conditions. Unfortunately the auditors could not accept NSF's proposed corrective actions for five recommendations because in general they did not identify specific deliverables nor provide expected completion dates. One set of corrective actions aimed at improving NSF's risk-assessment process contained enough specifics to be accepted. The OIG and the independent auditor will continue working with NSF management to ensure these issues are resolved in a timely manner.

## **\$33 Million in Raytheon Polar Services Company Costs Questioned**

At NSF's request, the OIG contracted with the Defense Contract Audit Agency (DCAA), to complete an audit of Raytheon Polar Services Company (RPSC) that was discussed in an earlier Semiannual Report.<sup>1</sup> The auditors added \$4 million in unsupported costs over what was previously reported, bringing total questioned costs to \$33.4 million, or 9.2 percent of the \$363 million total costs claimed by the contractor for the three year period ending December 31, 2002.

Raytheon Polar Services is NSF's primary support contractor for the United States Antarctic Program, providing logistics and support services valued at approximately \$1.172 billion over ten years. DCAA had previously identified \$29.2 million in improperly billed indirect costs in its interim report issued in September 2004. In completing its audit, DCAA questioned an additional \$4 million of direct costs and \$52,000 of miscellaneous costs, mostly related to the handling of a petty cash fund located in New Zealand, because RPSC did not have documentation to show how the costs were allowable or benefited the NSF contract.



**A worker at Admundsen-Scott South Pole station waves goodbye to an LC-130 aircraft as it departs with approximately 35 employees who had “wintered over” at the bottom of the world. NSF/USAP Photo by Mark Buckley, RPSC (2001).**

We recommended that NSF disallow these questioned costs and ensure that Raytheon accurately classifies and records future overhead and general and administrative costs in its accounting system. NSF also needs to ensure that Raytheon establishes policies and procedures to: (1) preclude charges over indirect cost ceilings; (2) routinely adjust claimed fringe benefit costs to reflect actual costs rather than budgeted; (3) maintain adequate documentation for claimed costs. These actions will ensure that any costs paid for the U.S. Antarctic Program are proper and accurate. NSF states that they are reviewing the recommendations.

<sup>1</sup> September 2004 Semiannual Report to Congress, p. 15

## ***Increased Commitment to Large Facility Project Management Needed***

A survey of NSF's Large Facility Project (LFP) Office found that progress toward issuing project management guidance and providing oversight of current large facility projects has been slow, constrained by workload and staffing issues. NSF established the LFP Office in 2003 to address Congressional concerns and Office of Inspector General audit recommendations regarding NSF's management and oversight of its portfolio of large facility projects. These projects represent a substantial portion of NSF's research portfolio and range from tens to hundreds of millions each. While the LFP Office has made some progress, NSF has not provided it with the appropriate institutional authority and staff resources necessary to accomplish its intended oversight responsibility.

The LFP Office needs a high-level champion, such as the NSF Director, to ensure organizational authority, and dedicated resources specific to the Office's oversight responsibilities. Further, the Office needs a more structured management approach that includes a formal mission statement, specific goals and measures, and a realistic staffing plan. Continued delay in addressing large facility management puts NSF's sizeable investments in these important projects, and taxpayer dollars, at risk of potential mismanagement and waste.

## ***Many Required Project Reports Late or Missing***

In another audit report that suggests opportunities for NSF to improve its post-award administration activities, OIG auditors found that over a 5-year period, approximately 47 percent of the 151,000 final and annual reports required by the terms and conditions of NSF's grants and cooperative agreements were submitted late or not at all. Of the 43,000 *final* project reports, 8 percent were never submitted, and 53 percent were submitted, on average, 5 months late. Of the 108,000 *annual* progress reports, 42 percent were never submitted. NSF collects information on the progress and results of the awards it funds through these reports. They provide NSF with important information while helping to enhance accountability for these federal funds.

Furthermore, although NSF has a policy that prohibits principal investigators who have not submitted final project reports in the past from receiving new awards, in 74 of 571 (13%) occurrences over the past 5 years NSF provided delinquent PIs new award funding. In 29 of these occurrences, it was not clear whether the automated system had failed or whether the system's controls had been manually overridden to allow new funding.

We recommended that NSF continue its plans to develop report tracking and automated reminder systems to assist its awardees in submitting project reports on time. Additionally, NSF should emphasize the importance of these reports to awardees and monitor its automated award system to ensure manual overrides occur only with written authorization and documentation. NSF generally agreed with the recommendations and plans to have its corrective actions implemented by July 2006.

### ***Conditions for International Grant Omitted from Agreements***

An audit of awards made by NSF and NASA, EPA, and USDA to establish an endowment fund for the United States-Mexico Foundation for Science (USMFS) found that conditions for the funding stipulated by Congress were not included in the grant agreements. Consequently, the USMFS did not obtain \$5 million or 45 percent of matching endowment contributions from Mexico or implement adequate financial controls to account for and administer almost \$11 million of U.S. endowment funds.

Of the total \$11 million of U.S. contributions, Mexico essentially matched NSF's contribution of \$4 million along with some contributions made by other agencies; however, Mexico has not matched the remaining \$5 million of U.S. funding, primarily from the other three agencies. While NSF's initial funding arrangement for the USMFS pre-dated the congressionally stipulated conditions, NSF did not amend the agreement when Congress approved the funding conditions and provided NSF with additional funds for USMFS. This occurred because the legislative requirements were not communicated to grant and program officials for inclusion in the award agreements. Further, as a new, foreign-based awardee, the USMFS did not fully understand its responsibilities related to complying with US grant provisions.

We recommended that as the largest U.S. contributor, NSF bring these concerns to the attention of the President's Office of Science and Technology Policy (OSTP) in order to facilitate a coordinated U.S. effort to secure corrective actions on the part of the USMFS. While NSF responded favorably to the audit report, it does not agree that it should take a leading role in coordinating corrective actions for the entire U.S. Government since it has no legal responsibility for oversight of other U.S. agencies. Nevertheless, NSF does generally agree to implement the remaining audit recommendations to secure at the USMFS, improved financial controls over NSF's contributions. OSTP is currently considering the audit recommendations.

## ***University's Research Program Outgrows Grant Administration***

An audit of the University of South Dakota (USD) found that USD filed late and sometimes inaccurate annual reports, inadequately managed some subawards and subcontracts, and charged \$142,593 of questioned costs and cost sharing to NSF grants. Our review of an annual report filed by USD found that the University overstated the level of effort staff contributed to that project, the extent of technical progress and accomplishments that had been achieved, and understated the difficulties the project faced in meeting its intended objectives. Concerning USD's management of subawards, we found that work began before agreements were formalized, statements of work were unclear, and several subrecipients did not submit all required reports.

Many of USD's problems occurred because the resources allocated for grant administration did not keep pace with the growth of its research program, which doubled between FY 1998 and 2003. Also, USD did not have an adequate understanding of its indirect cost rate structure and did not have a formal policy or process to determine and appropriately classify direct and indirect costs. During the audit, USD took steps to correct some of these concerns. The University generally agreed with the findings related to late annual reporting and management of subawards, but disputed most of the questioned costs and cost sharing. Based on the information provided by this audit NSF declined to exercise option years four and five on one of the grants, allowing for \$620,020 of NSF funds to be redirected to other programs by the Directorate for Computer and Information Science and Engineering. The audit report was provided to NSF's Division of Institution and Award Support for audit resolution.

## ***Production Company Financial Systems are Found Inadequate***

Auditors questioned \$921,489 or 34 percent of total claimed costs for two awards given to the production company ScienCentral Inc. (SCI), and a closely related non-profit organization, The Center for Science in the Media (CSMI) because they did not have adequate financial systems to account for its NSF funded expenses and cost sharing claimed on NSF awards. In addition, CSMI did not have the required OMB Circular A-133 audits for its fiscal years 2000 and 2001. OIG recommended that NSF recognize SCI and CSMI as high-risk awardees and not grant them new funds until the organizations implemented adequate accounting systems and controls to effectively administer and monitor their NSF awards. In response to the audit

report, SCI and CSMI management identified a number of actions they have already taken to improve the financial management system and to support some of the questioned costs.

### ***\$6.8 Million in Cost Sharing Required of School District is Questioned***

OIG audited the financial report submitted by Fresno Unified School District (FUSD) in California for the five-year period ending August 31, 2000 as part of our ongoing review of awardees under NSF's Urban Systemic Program and Urban Systemic Initiative (USP/USI). While the school district was able to support the \$15 million of NSF funded costs claimed under the award, it lacked sufficient and adequate records to evidence meeting its \$17.5 million in cost sharing commitments. As a result of this material weakness, we questioned \$6.8 million of NSF's share of total project costs.

Over \$220,000 of indirect costs were also questioned because the awardee did not accurately calculate or consistently charge its indirect cost rate. \$5.1 million in claimed salary, wage and fringe benefit costs *would* have been questioned had the auditors not performed additional verification procedures at the government's expense, because the school district did not maintain the required supporting documentation. FUSD officials stated that as a first-time NSF award recipient, they were not aware of the accounting and documentation requirements for NSF awards. They indicated that they have taken actions to address the internal control and compliance findings and recommendations in the report.

NSF should direct FUSD to develop and implement a financial management system and adequate procedures to effectively administer and monitor NSF funds. These steps should include: (1) implementing proper systems to identify, track, and report cost sharing and participant support costs, (2) providing training to appropriate personnel to properly calculate indirect costs, and (3) ensuring that employees maintain the proper documentation to support salary and wage charges in compliance with federal and NSF requirements. The audit report was forwarded to NSF's Division of Institution and Award Support for audit resolution.

### ***Grant Management at Community Colleges Need Improvement***

In our on-going assessment of grants management at community colleges, two additional audits have been completed. Like the prior audits,

these community colleges also have grant accounting control weaknesses, especially in the areas related to labor activity reporting, cost sharing, subawards, and consultant costs.

Springfield Technical Community College (STCC) claimed questionable and inadequately supported cost sharing and could not provide documentation to support the claim that consultant costs benefited the NSF award. In total, we questioned \$230,133 of the \$2,945,325 costs claimed on this award that was intended to increase the number of trainees in the telecommunications industry.

Similarly, an audit of Texas State Technical College – West Texas (TSTC) identified material deficiencies in the College's financial controls over labor activity reporting and cost sharing. Among the costs questioned was \$24,745 of salaries and related fringe benefits, which the College claimed for work that had not yet been performed. The College was also unable to locate 81 percent of the employee activity reports, representing approximately \$650,000, or over 50 percent of the total \$1.25 million costs TSTC claimed on the NSF award. OIG also found that TSTC: 1) lacked a system to track, record, and monitor its required cost sharing; 2) did not obtain financial disclosure statements from investigators working on the NSF award; and 3) did not prepare contractual agreements with all of its consultants, which could have jeopardized TSTC's ability to meet its programmatic objectives and comply with federal and NSF requirements. TSTC officials stated that these problems occurred because the project director of the award had received little or no oversight from other responsible TSTC officials.

Officials at both STCC and TSTC West Texas agreed with the internal control and compliance findings and recommendations and reported that they have implemented corrective actions. Both audit reports were forwarded to NSF's Division of Institution and Award Support for audit resolution.

## Other Reports

### *FY 2004 FISMA Information Systems Reports*

During this semiannual period OIG issued the FY 2004 Federal Information Security Management Act (FISMA) Independent Evaluation Report and the FY 2004 FISMA Evaluation Summary Report. The report states that NSF has an established information security program and has been proactive in reviewing security controls and identifying areas to strengthen this program. However, the report identified one reportable



condition concerning the need to strengthen the information security program at NSF's contractor-operated facilities supporting Antarctic operations. Four other less significant weaknesses were also identified. Management agreed with the findings and recommendations in these reports and indicated that, in many instances, it has already initiated corrective action.

## **National Science Board's Compliance with Sunshine Act**

At the request of Congress, OIG conducts an annual review of the National Science Board's compliance with the Sunshine Act. In 2004, the Board again demonstrated a clear intent to provide for greater access to and increased openness in its meetings, and properly closed meetings consistent with the exemptions contained in the Sunshine Act. However, as the Board is continuing to develop the formal policies and procedures recommended in last year's audit, it again experienced challenges in meeting some of the many procedural requirements of the Sunshine Act. For example, while the Board for the most part provided timely public announcement of its regular schedule, it met this requirement only 33 percent of the time for its *ad hoc* meetings. The Board should implement formal guidance for handling such *ad hoc* meetings and ensure that its members and staff are familiar with it.

To provide needed structure and protocol and to ensure greater consistency and accountability in complying with Sunshine Act requirements, the NSB needs to complete its plans to develop, implement, and provide training on formal policies and procedures on Sunshine Act requirements. The Board expects to implement this guidance during the first half of 2005.

## **A-133 Audit Reports**

The Single Audit Act of 1984 (Public Law 98-502) and the Single Audit Act amendments of 1996 (Public Law 104-156) established uniform requirements for audits of non-federal entities receiving federal awards. Under the Act, non-federal entities that expend \$500,000 or more a year in federal awards are required to have an organization-wide audit that includes the non-federal entity's financial statements and compliance with federal award requirements. OIG work with respect to A-133 audit reports is summarized below:

## Quality Control Review

During this reporting period, OIG conducted a quality control review of an audit performed by an accounting firm under the Single Audit Act. The review found that the firm's auditors did not address a \$31.7 million liability for postretirement health benefits and the related disclosure omitted from the grantee's financial statements. The seriousness of this auditing deficiency compelled us to refer the matter to the American Institute of Certified Public Accountants *Professional Ethics Division* for resolution. The AICPA is reviewing the matter and will advise us of their decision.

Additionally as part of the review, we found that the auditor did not report the grantee's non-compliance with federal property disposal requirements. Further, the auditors' work papers did not sufficiently document the internal control structure and audit steps used to test the grantee's compliance with federal requirements. Although the auditor disagreed with the findings related to the omitted liability and federal property disposal requirements, they agreed to improve the documentation of the internal control structure and audit steps taken to test compliance.

## Desk Reviews

After A-133 audit reports are submitted by the non-federal entities to the Federal Audit Clearinghouse, we conduct desk reviews of audits where NSF is the cognizant or oversight agency or the audit report identified findings specific to NSF awards. In this reporting period, we conducted desk reviews of 43 A-133 audit reports with NSF expenditures totaling \$319 million between fiscal years 2002 and 2004. For 21 of these A 133 audit reports, auditors found a total of 86 compliance and internal control findings related to NSF awards. The most common findings related to deficiencies in financial management and lack of adequate support for salary and wages. Auditors questioned \$561,615 of NSF award costs claimed by award recipients. Examples include \$240,232 in over charges for indirect costs at Clark Atlanta University, and \$290,262 of unsupported sub-recipient costs claimed by University of Puerto Rico. The following table summarizes findings found in the A-133 audit reports:

### Findings Related to NSF Awards by Category

Category of Cost, Income or Activity	Category of Finding			
	Compliance	Internal Controls	Monetary	Total
Financial Management	9	6	3	<b>18</b>
Salary/Wages	10			<b>10</b>
Award Management Requirement	9			<b>9</b>
Other Direct Costs	9			<b>9</b>
Sub-awards	7		1	<b>8</b>
Indirect Costs	5		1	<b>6</b>
Equipment	4			<b>4</b>
Other	17	4	1	<b>22</b>
<b>Total</b>	<b>70</b>	<b>10</b>	<b>6</b>	<b>86</b>

We also examined Management Letters accompanying A-133 audit reports. While management letters report less significant internal control deficiencies, these deficiencies can become more serious over time if not addressed. Twenty-one entities were issued Management Letters in this reporting period identifying internal control problems such as segregation of duties, adherence to allowable cost rules, and lack of procedures to mitigate fraud.

### Single Audit Quality Project Update

A-133 audit reports are essential to helping NSF fulfill its responsibility for monitoring the approximately \$5 billion of awards it funds annually. As previously reported, concerns raised by Quality Control Reviews (QCRs) conducted by a number of federal agencies have prompted the OIG community to conduct a government-wide project to assess and provide a baseline measurement of the quality of Single Audits. In November 2004, auditors participating in the project began conducting QCRs on a statistically representative sample of 208 A-133 audits submitted to the government.

Serving on both the Project Advisory Board and as part of the project management staff, the NSF OIG helped develop guidance material and training for auditors conducting the reviews, monitored on-going reviews, and examined completed QCRs. The NSF OIG plans to conduct two QCRs during the next semiannual reporting period. Given the importance of A-133 audit

quality to NSF's post-award administration, our office will continue to be involved in overseeing and reporting on the results of this government-wide Single Audit quality project.

## **Corrective Actions Prompted by Previous Audits**

### ***NSF and Foreign Awardee Improve Management of Grant Funds***

A prior audit of NSF awards worth \$16.4 million to the Inter-American Institute for Global Change Research (IAI) in Brazil, disclosed that NSF, on behalf of the United States, was funding a disproportionate share of the organization's total costs, and that the organization had not properly monitored 14 research subawards, valued at \$10.3 million<sup>2</sup>. Pursuant to the audit recommendations, NSF has reaffirmed, with the President's Office of Science and Technology Policy (OSTP) and the Department of State, the continued U.S. commitment for sustained funding of IAI research projects. Although the other 18 IAI member countries have not committed to providing any additional research contributions, both OSTP and NSF believe that engaging these countries in scientific assessments of global change issues remains a US priority and that the IAI serves as an effective means of encouraging international collaboration. Also, NSF has continued to work with IAI's governing body to increase the organization's efforts in the area of fundraising. IAI has been directed to develop a fundraising strategy document with established milestone dates.

The IAI is also improving its management of NSF grant funds, both for the organization's research projects and core operational expenditures. IAI is developing a Project Management Manual to establish clear written subaward policies and procedures for administering and monitoring NSF research funds passed-through to other institutions. The Institute is also in the process of hiring a new Director. NSF is working closely with IAI to implement these improvements and has informed IAI that additional research funding will not be approved until the Project Management Manual has been completed.

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<sup>2</sup> September 2004 Semiannual Report, p.17

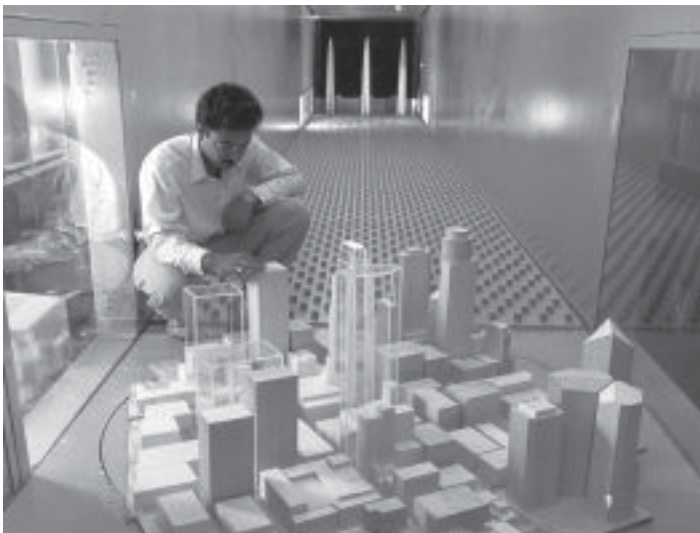
## Work in Process

### *Collection of Research Information*

Our office is currently conducting survey work on the effectiveness of NSF's methods of collecting, documenting, and analyzing the information resulting from the research it funds. This audit will also examine how other federal agencies that fund basic research collect research information, for the purpose of identifying good business practices.

### *Science and Technology Centers*

NSF's Office of Integrative Activities requested that OIG conduct audits of two Science and Technology Centers (STCs) that had recently undergone significant changes in leadership and management. Using information gained during our survey on the STC program and Center operations, we began audit work at two separate universities with STC awards. Because of their size and complexity, STCs contain more financial risk than most other NSF awards. Strong leadership is essential if an STC is to be successful in bringing talented researchers and students together to work on cutting-edge scientific issues.



**A model of downtown Minneapolis is prepared for testing in the boundary layer wind tunnel at the University of Minnesota's St. Anthony Falls Laboratory (SAFL). The test will study the effects of wind on structures. The SAFL was recently awarded a Science and Technology Center award. Courtesy Pat Swanson, St. Anthony Falls Laboratory, Univ. of Minnesota.**

## ***Retirement Benefits Paid by Awardees NSF's Large Facilities and Programs***

Our office initiated an audit to review the reasonableness of retirement benefits approved by NSF at five awardees managing some of NSF's largest facilities and programs. As part of the evaluation, we plan to compare the retirement benefits offered to workers at these facilities with those of other similar institutions. The liability for post retirement health benefits for NSF's facilities and programs is over \$85 million at these five awardees. The growing unfunded liability may have a major impact on future NSF budgets.

## ***Review of Thrift Savings Plan Catch-Up Contributions***

A review of all Thrift Savings Plan (TSP) catch-up contributions made by NSF employees in 2003 and 2004 was initiated because of concerns raised by employees over the accuracy of contribution data reported on employees' quarterly TSP statements. Catch-up contributions are supplemental tax-deferred contributions available to TSP (U.S. government employee retirement savings plan) participants age 50 or older who are already contributing the maximum amount for which they are eligible. To complete this review and ensure that TSP catch-up contributions withholdings from each employee's pay were properly transferred to their federal TSP account, we are working with staff from NSF's Division of Financial Management and the TSP to compare and analyze NSF payroll withholding data to the contribution data reflected in the TSP system. We expect to provide NSF with an analysis by employee of any errors found and issue the report in the next semiannual period.