

Audits & Reviews

In this semiannual period we completed the required audit of NSF's fiscal year 2007 financial statements, an audit of NSF's oversight of its eight research center programs, and an assessment of certain National Science Board (NSB) policies and procedures governing its ad hoc business activities. In addition to these internal audits of NSF, we completed seven audits on NSF's awardee institutions, including reviews of purchase cards, labor effort reporting and other grants management procedures at a federally funded research and development center, three universities and three non-profit organizations. We also reviewed 97 annual single audits of NSF awardees that reported a total of 150 findings. Finally, in the last six months we worked with NSF to resolve findings and recommendations in five audits completed in prior periods. Work continues on audits of the adequacy of the information NSF collects from its research centers, the sufficiency of its cooperative agreements for large facility projects, its handling of personally identifiable information, and its audit resolution policies and practices.

Significant Internal Reports

FY 2007 Independent Auditors Issue Unqualified Opinion, Cite Need for Improved Contract Oversight and Accounting for Property

During this reporting period we completed an audit of NSF's Fiscal Year (FY 2007) financial statements, as required by the Chief Financial Officers Act. Under a contract with OIG, Clifton Gunderson LLP issued an unqualified opinion but repeated the prior-year significant deficiency on contract monitoring and also identified a significant deficiency related to property, plant, and equipment.

In FY 2007, NSF expended approximately \$551 million on active contracts and interagency agreements. Of this amount, \$212 million was disbursed through advance payment programs with three contractors, including \$148 million for logistical support of the U.S. Antarctic Program. The auditors reported that NSF's procedures were not adequate to ensure that contractors used NSF funds consistent with the objectives of the contract. The auditors recommended that NSF: (1) expand the contract oversight program to include comprehensive post-award monitoring policies and training to ensure that the requirements of the contracts are met; (2) implement guidance to ensure that a thorough review of the contract folder is performed and that documentation is complete; (3) continue to review the contractors' Quarterly Expenditure Reports supplemented with additional testing on higher risk contracts to

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identify unreasonable and unrelated costs; (4) resolve the outstanding OIG audits of NSF's largest contractor for FY 2000-2004; (5) implement a system to track the status of invoices from receipt to payment processing; and (6) provide training to all employees responsible for the acceptance of services and/or goods.

NSF relied extensively on its contractor to manage and account for the approximately \$225 million of real property needed to carry out research activities in the Antarctic. The contractor and NSF used numerous, nonintegrated systems and manual processes to account for property. In addition, the auditors encountered difficulties in obtaining supporting documentation for property transactions from the contractor; identified errors in testing; and found NSF's accounting for freight costs to be complex and at risk for error because of its manual nature. The auditors recommended that NSF: (1) continue to validate a sample of asset acquisitions and disposals each year; (2) periodically confirm with the contractor the status and availability for use of property under construction; (3) develop a plan to implement an integrated entity-wide property management system that would fully automate the recording, tracking, and analysis of all property accounting processes; (4) consider incorporating a requirement in the upcoming United States Antarctic Program (USAP) contract solicitation for the contractor to provide an accounting system for property, plant, and equipment in the Antarctic to support the entity-wide system; and (5) implement procedures to streamline the freight cost calculation and improve the accuracy and timeliness of reporting transportation costs to the Antarctic.

In February, NSF submitted its proposed action plans to address the recommendations. The proposed corrective actions were reasonable and generally responsive. NSF proposed an alternative approach to resolve the recommendation on implementing a system to track the status of contractor invoices. However, NSF did not address developing a plan to implement an integrated property management system or incorporating a requirement in the upcoming USAP solicitation for the contractor to provide an accounting system for USAP property. Rather, NSF proposed to document and test system controls before determining future actions. The OIG and Clifton Gunderson will continue working with NSF management to ensure that these issues are resolved.

Management Letter Cites Need for Improved Post-Award, Contract Monitoring, and Property Accounting Practices

The FY 2007 Management Letter identified nine findings, some of which incorporated elements of prior years' findings related to NSF's operations and financial reporting controls.² The Management Letter reported continuing weaknesses in NSF's grants processing and documentation. For example, the auditors found late grantee annual project reports, late final project reports, incomplete documentation in NSF's monitoring files to support the results of its oversight reviews, and lack of follow-up on corrective actions for desk review findings. Once again, the auditors recommended that NSF revise its Site Visit Review Guide to provide specific guidance for documenting the review steps, the closure of site visit recommendations, and any delinquency letters to the

² Auditors issue a management letter to separately communicate findings arising from the financial statement audit that are not reported in the audit report but are still important to ensuring a sound overall internal control structure and require management's attention.

grantees. The auditors also recommended that NSF issue site visit reports and letters timely and revise the desk review protocol to establish a deadline for follow-up on corrective actions with grantees.

The auditors reported a new finding related to reporting property, plant, and equipment. A physical inventory of USAP real property and construction in process and a reconciliation of the physical inventory listing to the general ledger were not performed, which could allow errors in property accounts to remain undetected. The auditors recommended that NSF review real property assets once a year to identify assets that are permanently impaired, prepare a journal entry to write-off such assets, perform an annual physical inventory of real property, and reconcile the property inventory listing to the general ledger.

NSF management generally concurred with a number of the recommendations in the Management Letter. In some instances NSF is developing alternative approaches to resolve the findings. For those recommendations that NSF did not agree with, the OIG and Clifton Gunderson will continue to work with NSF management to either reach resolution or to assess whether any further recommendations are necessary. The FY 2008 financial statement audit will evaluate NSF's actions in response to the findings and recommendations to determine whether these issues have been adequately addressed.

Policy for Overseeing Research Center Programs Should Be Formalized

A recent audit of NSF's controls over its eight research center programs found that NSF could enhance its management and oversight by developing and issuing written policies and establishing a forum for its program officers to share best practices. The eight center programs fund individual research centers in fields such as nanoscale technology, engineering, and the science of learning. These eight research center programs funded 99 individual research centers for a total of approximately \$250 million in fiscal year 2005.

The audit found that the NSB and NSF senior management had issued a set of principles and general guidance for center programs that provided a broad framework to ensure effective management, oversight, and accountability. Nevertheless, the eight center programs did not consistently follow this guidance, leading to differences among the programs in important areas such as strategic planning, reporting requirements, funding levels, and duration of NSF support. In addition, NSF had not incorporated the guidance into its written agency policies and procedures for NSF center program managers. Without written policies, NSF is at risk of not having effective management and oversight practices to ensure the center programs meet their goals.

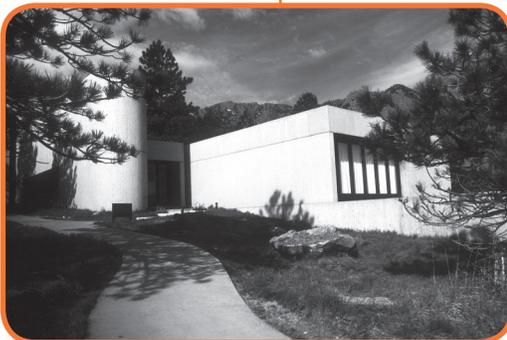
The audit recommended that NSF develop and issue a written policy for its center programs that includes the NSB's and senior management's framework of principles and guidance and explains NSF's expectations of how center programs are to use this framework. The audit also recommended that NSF reinstitute a forum through which center program managers can identify and exchange promising practices as well as discuss common issues. NSF agreed with our findings and recommendations

The NSB Clarifies its Processes and Procedures for Conducting Ad Hoc Business Activities

At the request of the National Science Board Chairman, we performed an assessment of the policies, procedures and guidance governing the circumstances surrounding the June 2007 signing of a ceremonial Joint Statement of Understanding between the NSB Chairman and the Governor of Hawaii expressing mutual support for Science, Technology, Education and Mathematics (STEM) education. We found that the NSB did not violate any existing policies, procedures, or guidance for conflict of interest, open meetings, or internal NSB practices. However, we did recommend actions the NSB could take to improve its policies and procedures, including developing a process for how it conducts impromptu business outside of its regularly scheduled meetings, and defining the roles and responsibilities of the NSB Chairman. The NSB has taken steps to implement all of our recommendations.

Significant Grant Audits

Federally Funded Research Center Needs to Improve Controls over Purchase Card and Timekeeping Systems



The Fleischmann Building, designed by I.M. Pei, is the headquarters of the University Corporation for Atmospheric Research (UCAR). Copyright: UCAR

Concerned that serious internal control deficiencies may exist in the University Corporation for Atmospheric Research's (UCAR's) purchase card program after fraudulent use was investigated, the OIG audited UCAR's purchasing and payroll systems. UCAR, a consortium of over 100 university members and affiliates, receives over 90 percent of its funding from NSF and other federal agencies.

Our audit found that while the internal control structure for UCAR's purchase card program contained some basic elements of an effective internal control system, it was not always implemented or effective in preventing or detecting fraud. Although UCAR has revised its purchase card policy and addressed many of the significant deficiencies that existed at the time of the fraud, further improvements are needed to ensure that the \$5 million of goods and services purchased annually with UCAR purchase cards are for authorized business purposes. We recommended that UCAR 1) develop policies and assign responsibilities for implementing a refresher training plan for using purchase cards, 2) conduct random checks to assess whether purchases were proper and approved by cardholders' supervisors, 3) periodically perform risk assessments to identify potential risks in the purchase card program, and 4) perform inventories on purchased items costing less than \$5,000, which are susceptible to theft.

Furthermore, at the time the fraud occurred, UCAR did not have an internal auditor on staff, a position that was left vacant for a five-year period. An internal auditor may have identified the need for improved controls over purchase cards in time to prevent or reduce UCAR's vulnerability to fraud. UCAR has recently hired an internal auditor.

We also evaluated whether UCAR salaries and wages were properly and accurately charged to federal awards. The audit found that UCAR employees 1) were not recording all of their worked hours, 2) charged budgeted rather than actual hours, 3) earned and used unrecorded compensatory time (although UCAR does not officially allow compensatory time), and 4) inaccurately recorded their time as worked when they were on leave. Furthermore, UCAR did not have detailed written justification to support over 80 percent of the sampled labor costs UCAR transferred between awards. Without a reliable basis of support, UCAR's \$58 million of labor costs charged to NSF and other federal agency awards are at risk of not being accurately allocated. UCAR needs to develop a timekeeping system to accommodate all hours worked by salaried employees, provide its employees specific guidance on timecard completion, and provide more oversight of accounting for leave and transferring of labor costs between awards.

UCAR agreed with most of the audit findings and recommendations but did not believe it would be cost effective to conduct periodic inventories of items purchased under \$5,000, which are vulnerable to theft. We affirmed our position that conducting inventories, even if at a minimal level, is necessary to prevent and deter instances of theft.

Processes for Certifying Labor Charges on NSF Awards Should be Strengthened

As noted in previous semiannual reports,³ the OIG is performing a series of reviews at NSF's top-funded universities to assess the adequacy of accounting and reporting processes for labor costs charged to federal awards. During this reporting period, reviews at three universities found the labor effort reporting systems at each lacked effective and timely controls for certifying labor effort, resulting in decreased assurance that \$62 million of salary and wages charged to NSF in FY 2006 reasonably reflected actual time worked on NSF sponsored projects. A similar concern exists for the salary portion of the \$580 million of costs charged to the universities' other federal grants.

University of California, Berkeley Needs to Ensure Reasonableness of NSF Labor Charges

The University of California, Berkeley's (UCB's) labor effort certifications did not always ensure that salary and wages charged to NSF awards reasonably reflected actual work performed on sponsored projects. Specifically, we found that for 8 of 30 employees tested, representing 14 percent of the NSF salary charges reviewed, UCB did not have appointment letters documenting employee institutional base salary rates, improperly charged employee work activities to NSF grants, and/or did not have "suitable means of verification" that the work effort charged was actually performed. Furthermore, 44 of 56 labor effort reports

³ March 2007 Semiannual Report, p. 18.

reviewed (representing 61 percent of the NSF salary charges reviewed) were either certified after the university-established due date or had inadequate documentation to determine the certified date.

As a result, we identified \$103,637 of salary costs charged to NSF (12 percent) that lacked adequate documentation to validate the reliability of actual employee labor effort. Furthermore, UCB inappropriately charged NSF \$15,543 (2 percent) in salaries for employee activities not directly benefiting NSF-sponsored projects. The systemic nature of the control weaknesses raises concerns about the reasonableness of the remaining \$25 million in annual labor costs charged to NSF projects.

Given the University's decentralized organizational structure for grants management, UCB needs to establish detailed written guidance for all labor effort processes to ensure full compliance with federal requirements, provide training to all staff involved in the labor effort certification process, and monitor department-level compliance with established labor effort policies and procedures. To comply with federal standards, UCB also needs to perform an independent internal evaluation of its labor effort reporting system to ensure its effectiveness. In general, the University agreed to implement the audit recommendations and believed its new web-based Effort Reporting System will address many of the cited control weaknesses.

University of Illinois at Urbana-Champaign Should Utilize Employee Workload Information During Labor Effort Certification Process

An OIG review of the University of Illinois, Urbana-Champaign (UI) found that UI needs to improve the reliability of after-the-fact confirmation of actual salary charges to federal awards. While the University's labor distribution system accounts for 100 percent of each employee's work activities, UI does not provide such information to certifying officials during the certification process to ensure that labor costs charged to NSF grants are reasonable and equitable relative to the employee's other sponsored and non-sponsored activities. In addition, certifying officials approved 49 of 77 labor confirmation reports, representing 61 percent of the NSF salary charges reviewed, after the University-established due date. As such, there is an increased risk that a portion of the \$29 million of annual salary costs could be misallocated to NSF projects, as certifying officials do not have complete or timely supporting documentation.

Although employee workload information was available, the university did not believe that certifying officials needed such information to correctly certify the reasonableness of direct labor charges to NSF-sponsored projects and therefore did not have procedures requiring its distribution or use. In addition, UI did not have written policies or procedures regarding timely completion of labor confirmation reports and had not assigned clear accountability to ensure reports were timely reviewed and certified. Further, the University had not performed the federally-required independent internal evaluation of its labor effort reporting system. We made recommendations to improve the effectiveness and timeliness of UI's labor confirmation process, which the University generally agreed to implement. UI also noted in its response that it is currently developing a new web-based electronic labor confirmation system.

Significant Changes in Employee Salary Distributions to NSF Awards Require Timely Recording at University of Utah

The University of Utah (Utah) needs to enhance its written policies and procedures to provide clear and comprehensive guidance for a labor effort reporting system that is fully compliant with federal regulations. Our review of 30 employees disclosed that, lacking clear guidance, the University had certified 51 percent of its salary charges to NSF late; had not appropriately recorded significant changes in estimated labor causing a redistribution of 25 percent of actual salary charges allocated to NSF projects; and certified two percent of the salaries without “suitable means of verification” to validate the actual labor effort expended. Without timely or appropriate controls for certifying labor effort reports, NSF has less assurance that the \$8 million of annual salary and wages reasonably reflect actual hours worked on NSF sponsored agreements.

These weaknesses occurred because Utah had not updated its labor effort procedures in recent years to establish clear, concise, and well-documented guidance to ensure full compliance with federal requirements. Also, the University had not performed the required independent internal evaluation to ensure that the labor effort reporting system was effective, forfeiting an opportunity to identify and address needed improvements. Utah generally agreed with all the audit recommendations, agreeing to make changes to its policy and procedures to improve its internal control structure for administering and managing its labor effort reporting system.

Audits of Three Non-Profits Find \$808,383 Questioned Costs and Non-Compliance with Licensing, Appropriations, and Accounting Requirements

During this semiannual period, auditors reported internal control weaknesses at three non-profit organizations. Among their findings, they identified \$808,383 of questioned costs and specific instances of non-compliance with federal appropriations law, a Canadian licensing requirement, and federal accounting regulations. In each case, we recommended that the grantee institute policies and procedures to strengthen its internal controls and ensure future compliance with applicable requirements.

Grantee Claims \$775,939 in Advance of Incurring Expenses to Avoid Losing Funds Set to Expire

An audit of WGBH Foundation, a non-profit television production organization questioned \$808,383 of the approximately \$9.4 million in total costs claimed on five NSF awards. WGBH did not comply with either NSF or its own policies when it claimed costs on one award that it had not yet incurred. WGBH claimed \$775,939 for future employment and rental contract costs that, while allocable to and in support of the NSF project, were not valid for the period in which they were charged. Further, the NSF appropriation supporting the grants expired prior to WGBH receiving and paying for the contracted services. Therefore, WGBH claimed costs that, under federal law, were no longer available to NSF for use in supporting the WGBH grants. WGBH claimed these costs in advance

to prevent losing access to these expiring funds. Auditors also questioned a total of \$25,707 in salaries, wages, fringe benefits, other direct costs and indirect costs that did not relate to or benefit the NSF awards and \$6,737 in travel, other direct costs and indirect costs that did not have adequate supporting documentation.

In addition, the auditors found that WGBH did not have controls in place to ensure that 1) proper documentation was maintained to support all award charges; 2) charges were recorded accurately on all NSF awards; 3) service center charges were reviewed to ensure actual costs were charged; or 4) sub-award expenditures claimed in foreign currency and paid for in U.S. dollars were monitored and reconciled.

WGBH believes that it had NSF's consent in claiming the \$775,939 of future costs and therefore disagreed with these questioned costs. However, it reported instituting procedures for annual reviews of service center charges and hiring a new accounting manager to better ensure future compliance with grant requirements.

SRI Jeopardizes Radar Project by Failing to Timely Renew Licenses and File Complete Reports with Canadian Authorities



The EPCO building at Resolute Bay Observatory is located at Cornwallis Island in the Canadian Arctic. Credit: SRI Intl.

A financial audit of \$30 million of costs claimed on an NSF cooperative agreement with SRI International, a non-profit research institute, to design, construct, and deploy the Advanced Modular Incoherent Scatter Radar (AMISR), found that the costs claimed were allowable and conformed with federal and award requirements. However, SRI had not requested and/or maintained all annual licensing renewals

required by Canadian authorities to conduct scientific research activities at the Resolute Bay Observatory, on a timely basis. In addition, SRI did not keep Canadian authorities fully apprised of the scientific research activities performed on the AMISR project through its annual license renewal reporting process, or obtain NSF review and approval of all agreements with the Canadian authorities as required by its agreement.

SRI's lack of a written policy and procedure for obtaining license renewals and its misunderstanding of the license renewal process and requirements contributed to SRI's noncompliance with the requirement to maintain timely license renewals. Lacking a proper license due to untimely renewals, there were periods of time when SRI did not have permission from the Canadian authorities to conduct any scientific research at its observatory, including activities for the AMISR project, because they were not reported to the Canadian authorities in the annual report. As a result, SRI and NSF run the risk of poor government relations with Canadian authorities and the local community of Resolute Bay, loss of property rights to the AMISR project, project delays, and increased project costs.

We recommended that SRI establish and implement written license renewal

policies and procedures, obtain and maintain the required international Scientific Research License renewals needed for all NSF projects, and coordinate the license application process with NSF as required in the award agreement. SRI agreed with all our recommendations.

Non-Profit's Accounting System Fails to Record Actual Indirect Costs but Most Award Records Are Accurate

OIG conducted two reviews of the Bermuda Institute of Ocean Sciences's (BIOS): an accounting system review, and an audit of 4 awards. BIOS is a non-profit organization providing ship operations and equipment for two research vessels and Atlantic Ocean current studies.

In the accounting system review, auditors found that BIOS did not comply with a federal requirement to use actual indirect cost rates to close out all of its awards in its account records, rather than budgeted indirect rates. While NSF grant policy limits BIOS to recovering indirect costs at the award budget's lower proposed rates, it is important that BIOS capture the full costs of its research programs in its accounting records in order to recognize the need to secure other sources of funding for costs not reimbursed by NSF. The under-recovery of indirect expenses, coupled with costs incurred for an expanded research program, could impact BIOS's ability to operate without additional funding, cost reductions, or increased revenues. In light of the expansion of research efforts, we recommended that NSF ensure that: 1) BIOS records actual indirect costs in its accounting records, 2) BIOS's financial condition is monitored, and 3) BIOS makes any necessary adjustments to its program expectations and funding. BIOS explained that it correctly billed NSF using its lower proposed indirect cost rates.

A second audit was performed to examine the \$9.2 million of costs BIOS claimed on four NSF awards to provide equipment and ship operations for the Weatherbird II, a research ship which was subsequently sold; and the Atlantic Explorer, a newly-acquired research vessel. Only \$253 of unallowable costs were found. Auditors were able to verify that costs charged for fuel and a reserve account for ship rehabilitation costs were accurate; that NSF was not charged for costs for the Weatherbird II while it was for sale; and that allocations of costs charged for "at sea" versus "at dock" ship time were accurate.

A-133 Audits

Auditors Report Qualified or Adverse Opinions on 26 of 97 Single Audits

OMB Circular A-133 provides audit requirements for state and local governments, colleges and universities, and non-profit organizations receiving federal awards. Under this Circular, covered entities that expend \$500,000 or more a year in federal awards are required to obtain an annual organization-wide audit that includes the entity's financial statements and compliance with federal award requirements. Non-federal auditors, such as public accounting firms and state auditors, conduct these single audits. The OIG reviews the resulting audit reports for findings and questioned costs related to NSF awards, and to ensure that the reports comply with the requirements of OMB Circular A-133.

The 97 audit reports reviewed this period, covering NSF expenditures of more than \$3.1 billion, identified 85 instances where awardees failed to comply with federal requirements and 42 instances where weaknesses in internal controls could lead to future violations. In particular, the auditors issued qualified or adverse opinions on 26 of the 97 awardees' compliance with federal grant requirements, on their financial statements, or on both. Further, 23 instances of non-compliance with federal requirements resulted in \$6.4 million in questioned award costs and \$64,730 cost-sharing shortfalls on NSF awards. As detailed in the table below, the most common violations were related to financial and award management and salary/wages.

Findings Related to NSF Awards

Category of Finding	Type of Finding			
	Compliance	Internal Controls	Monetary	Total
Financial and Award Management	37	32	4	73
Salary/Wages	12	4	9	25
Fringe Benefits	1	1		2
Subawards	9		1	10
Procurement System	7		2	9
Equipment	7		1	8
Cost-Sharing	1		1	2
Indirect Costs	5	3	1	9
Property Management System		1		1
Other Direct Costs	2		3	5
Travel	2	1		3
Participant Support Costs	1		1	2
Interest Earned	1			1
TOTAL	85	42	23	150

We also examined 53 management letters accompanying the A-133 audit reports. Auditors use these letters to identify internal control deficiencies that are not significant enough to include in the audit report, but which could become more serious over time if not addressed. The letters disclosed a total of 93 deficiencies that could affect NSF awards in areas such as tracking, managing, and accounting for NSF costs and segregation of duties.

Timeliness and Quality Deficiencies Found in 76 Percent of A-133 Audit Reports

The audit findings contained in A-133 reports help to identify potential risks to NSF awards and are useful to both NSF and the OIG in planning site visits, post-award monitoring, and future audits. Because of the importance of A-133 reports to the process of overseeing awardees, the OIG returns reports that are deemed inadequate to the awardees to work with the audit firms to take corrective action.

Of the 46 audit reports we reviewed in which NSF was the cognizant or oversight agency for audit,⁴ 35 (76 percent) did not fully meet federal reporting requirements. For example, we found that 22 reports (48 percent) were submitted late or the audit reporting package was incomplete. Also, for 20 reports (44 percent), the Schedule of Expenditures of Federal Awards did not provide sufficient information to allow for identification of awards received from non-federal “pass-through” entities, and another 8 reports (17 percent) either did not include a corrective action plan or the plan was incomplete to address the audit findings. Seven reports (15 percent) did not adequately identify the federal award to which the findings applied, the criteria or regulatory requirement upon which the findings were based, and/or the cause and effect of the findings.

The OIG identified each of the potential errors and contacted the auditors and awardees, as appropriate, for explanations. In most cases, the auditors and awardees either provided adequate explanations or additional information to demonstrate compliance with the Circular, or the error did not affect the results of the audit. However, we rejected three reports due to material misstatements and/or significant non-compliance with federal reporting requirements. We issued a letter to each auditor and awardee informing them of the results of our review and the specific issues on which to work during future audits to improve the quality and reliability of the report.

Public Accounting Firm Responds to Deficiencies Identified in Quality Control Review

Last year, we reported on our Quality Control Review of an A-133 audit performed at the Barrow Arctic Science Consortium⁵ (the Consortium). Our review found that the auditor did not adequately assess the risks at the Consortium related to federal grant compliance requirements and did not conduct adequate

⁴ The “cognizant or oversight agency for audit” is defined as the federal agency which provided the largest amount of direct funding to an auditee. On a 5-year cycle, OMB assigns a cognizant agency for audit to auditees who expend \$50 million or more in federal funds in a year. On an annual basis, OMB assigns an oversight agency for audit to auditees who expend less than \$50 million in federal funds in a year.

⁵ September 2007 Semiannual Report, p. 18.

testing of controls over federal grant compliance requirements. As a result, we were unable to determine whether the auditor identified all instances of material non-compliance with federal grant compliance requirements. Pursuant to the review recommendations, the auditor obtained additional training on the planning and performance of A-133 audits, revised its procedures for planning and performing A-133 audits, and conducted additional audit testing on the Consortium's procurement of certain capital assets and its safeguarding of equipment purchased with federal funds.

Audit Resolution

NSF Makes Citations of Journal Articles Resulting from NSF-Funded Research Available to the Public

In 2006, we issued two audit reports⁶ on NSF's policies and practices for disseminating the results of the research it funds. These reports noted that, through required annual and final project reports, NSF collects a wealth of information about the research activities it funds. This information includes citations of published journal articles that resulted from the NSF-funded research. However, at the time of the audits, NSF only made abstracts of proposed research it funded available on its public website. We issued a series of recommendations to encourage NSF to also disseminate the research results of the projects it funds, thereby increasing the accountability and transparency of its research enterprise.

During this semiannual reporting period, NSF implemented the last of the recommendations from these reports. In contrast to its previous approach, NSF's public website now contains citations of the journal articles resulting from NSF-funded research, along with the abstracts of the proposed research. By December 2007, over 16,000 publication citations had been added, and this number will continue to grow as NSF receives more annual and final project reports from its principal investigators. In its 2007 E-Government Report,⁷ NSF noted that providing journal citations helps "...NSF to better demonstrate the linkage between funded research and impact to the American public."

NSF Allows \$21.3 Million of Questioned Costs Associated with Polar Support Contractor

NSF decided to allow \$21.3 million or 38 percent of costs questioned and reported in a series of audits of Raytheon Polar Services Company's (RPSC) financial records and its compliance with its Cost Accounting Standards (CAS) disclosure statement. Auditors questioned about \$56 million of claimed costs for the five-year period 2000-2004 and identified \$26.6 million of potential additional contract costs for years 2005-2010. These audits cited RPSC's parent company, Raytheon Technical Services Company (RTSC), for failing to comply with its federally disclosed cost accounting practices in its CAS

6 *Audit of NSF's Policies on Public Access to the Results of NSF-Funded Research*, NSF OIG, Report No. OIG 06-2-004, February 16, 2006; and *Audit of Interest in NSF Providing More Research Results*, NSF OIG, Report No. 06-2-013, September 26, 2006.

7 National Science Foundation, "2007 E-Government Report," September 21, 2007.

disclosure statement. As a result, the Department of Defense (DoD), which is responsible for overseeing RTSC's compliance with its accounting disclosure statement, cited RTSC with a final determination of noncompliance for 2000-2002 and an initial determination of noncompliance for 2003-2004. However, as reported in our last Semiannual Report,⁸ the DoD contracting officer responsible for Raytheon withdrew his determinations of noncompliance as it affects \$21.3 million of questioned costs and the \$26.6 million of projected increased costs for the Centennial, Colorado RPSC office operations. The NSF contracting officer concurred with DoD's change in position and in turn, proposed to allow the associated \$21.3 million of costs questioned by the auditors. As a corollary, the \$26.6 million of projected additional costs would also be considered allowable.

We reviewed documentation provided by DoD and NSF supporting their action, including a legal opinion provided by DoD supporting the reversal of its noncompliance determinations and found that NSF's management and administration of its contract with RPSC limited the government's ability to recover the questioned local overhead costs. To prevent the recurrence of these problems in NSF's next polar services contract, we made a number of recommendations to NSF to clarify in its upcoming solicitation its expectations with respect to local overhead costs and to require the next contractor to maintain accurate disclosure statements and comply with its disclosed accounting practices.

Of the remaining \$34.7 million of questioned costs, NSF has proposed the recovery of \$1.3 million or 17 percent of the \$7.6 million in questioned direct costs. NSF did not sustain \$5.3 million because RPSC was subsequently able to support these costs. Efforts to resolve the remaining \$1 million of questioned direct and fringe benefit costs, \$12.2 million in questioned over-ceiling indirect costs, and \$14.9 million in questioned corporate and RTSC management costs are continuing.

In addition, many significant internal control weaknesses remain unresolved, including: billings to NSF that could not be reconciled with RPSC's accounting records; RPSC's inability to maintain adequate receipts and records for costs incurred by its New Zealand subsidiary; and RPSC's lax oversight of AGUNSA, a large foreign subcontractor, where a fraud involving NSF funds was discovered.⁹ We will continue to monitor NSF's and RPSC's progress towards resolution of these control deficiencies in the next semiannual period. In addition, we plan to monitor NSF's efforts to develop a solicitation and recompile its next polar services contract and provide audit assistance and technical expertise as appropriate to support NSF's procurement process.

\$10,317 in Questioned Costs Sustained, and Recommended Policies Established at the University of Puerto Rico

In our March 2007 Semiannual Report¹⁰ we reported that an audit of two NSF awards to the University of Puerto Rico – Central Administration (UPR) with \$8.8 million of claimed NSF funds found significant deficiencies in the

⁸ September 2007 Semiannual Report, pp 21-22.

⁹ March 2007 Semiannual Report, p. 14.

¹⁰ March 2007 Semiannual Report, p. 20.

University's subaward monitoring system. UPR did not adequately monitor subaward costs or subawardee cost sharing for one award that included seven subawards amounting to \$3.1 million, or 58 percent of the total costs charged to the NSF award. The auditors questioned \$16,030 of which \$8,530 were unsupported or erroneous subcontractor costs and the remaining \$7,500 were incorrectly billed indirect costs.

UPR submitted additional documentation to support \$5,713 of the questioned subcontract costs and NSF sustained the remaining \$10,317 (64 percent). NSF verified that UPR established written policies and procedures for implementing a subaward monitoring program and ensuring that indirect costs are properly claimed.

Community College Failure to Follow Own Procedures Results in Repayment of \$154,946 to NSF

Nashville State Technical Community College (NSTCC) has refunded \$154,946 of questioned costs and has taken steps to improve and implement procedures to prevent future unallowable charges to federal awards, in response to an audit report that first appeared in our March 2007 Semiannual Report.¹¹

An audit of \$2.7 million awarded to NSTCC found that the college did not always adhere to its established policies and procedures for: 1) maintaining many routine accounting documents; 2) calculating indirect costs charged to its NSF grants; and, 3) maintaining certifications and personnel activity reports for employees working on NSF programs. The auditors questioned \$185,213 of NSTCC's claimed costs.

As indicated above, NSTCC generally agreed with the audit recommendations and stated that it had initiated corrective action. However, NSTCC disagreed that it lacked appropriate documentation for certain costs charged to its NSF awards and that it did not have adequate documentation to support its cost share.

During audit resolution, NSF reviewed documentation submitted by NSTCC in support of its corrective actions including: newly updated NSTCC policies and procedures for document retention and for ensuring indirect costs charged for federal programs are pursuant to federal grant agreements; and the development of additional internal control procedures to ensure that NSTCC employees follow existing policies and procedures related to accountability of federal funds. NSF sustained \$154,946 of the questioned costs.

Nonprofit Improves Its Internal Control Procedures

In response to a 2007 audit at the American Institute of Mathematics (AIM),¹² NSF completed an on-site review to verify whether recommended corrective actions had been implemented satisfactorily to address over \$2 million of unsupported costs and the control deficiencies in AIM's accounting for NSF award funds. NSF management reported that AIM had improved its administrative

¹¹ March 2007 Semiannual Report, pp. 19-20.

¹² March 2007 Semiannual Report, p. 19.

policies and procedures to support future employee salaries, developed acceptable subaward agreements, and negotiated an indirect cost rate with NSF. Also, because time and effort records were not available, AIM provided payroll tax summaries and Internal Revenue Service 1099 forms to NSF to substantiate the questioned employee and contractor salaries. In addition, NSF program directors overseeing AIM awards provided assurance that AIM met the award objectives, thereby suggesting the questioned labor costs had actually benefited NSF's awards. NSF will continue to monitor AIM's revision of its chart of accounts to facilitate accurate recording of costs on NSF awards.

The 2007 audit report stated that AIM could not adequately support \$1.57 million of employee salaries, \$882,054 of NSF funds provided to subawardees and independent contractors, and \$23,531 of travel, participant support, and indirect costs. In addition, AIM's accounting system was unable to ensure accurate, current, and complete disclosures of the financial results of its NSF awards. This occurred because AIM used an automated accounting system along with manually prepared records to track and report NSF award costs, and discrepancies were found between the two.

Work in Progress

NSF's Use of Its Research Center Programs' Programmatic and Financial Information

Following on our review of NSF's management and oversight of its research center programs, we recently began an audit of the programmatic and financial information NSF collects on these programs. The objective is to determine what and how NSF is using information it collects from its research centers to monitor and assess center performance. We anticipate completion of this audit by the end of 2008.

Sufficiency of NSF's Cooperative Agreements for Large Facility Projects

As reported in our September 2007 Semiannual Report,¹³ the OIG is conducting a series of audits to determine whether the terms and conditions included in NSF's cooperative agreements for the management and operation of its large facilities projects are sufficient for NSF to provide stewardship over its programs and assets. Using a representative sample of six currently operating facilities, we are assessing the sufficiency of NSF's cooperative agreements to ensure: 1) accomplishment of programmatic goals; 2) financial and administrative accountability; 3) protection of NSF assets; and 4) compliance with laws and regulations. Our first report on terms and conditions ensuring the accomplishment of programmatic goals will be issued early in the next semiannual period.

¹³ September 2007 Semiannual Report, p. 24.

Audit of NSF Controls over the Collection, Storage, Access and Use of Personally Identifiable Information

Work continues on an OIG audit of the adequacy of NSF controls for safeguarding electronic and paper forms of personally identifiable information of its employees, visitors, principal investigators and peer reviewers. Our report will be issued during the next semiannual period.

NSF's Audit Resolution Policies and Practices

The OIG is assessing NSF's procedures to resolve and ensure corrective action is taken on audits of its grantee institutions. In this initial survey phase, we will gain an understanding of NSF's audit resolution policies, procedures, and practices.