



# Chapter 3

## Appendices



## Summary of FY 2012 Financial Statement Audit and Management Assurances

**Table 1. Summary of Financial Statement Audit**

Audit Opinion	<i>Unqualified</i>				
Restatement	<i>No</i>				
Material Weakness	Beginning Balance	New	Resolved	Consolidated	Ending Balance
Total Material Weaknesses	0	-	-	-	0

**Table 2. Summary of Management Assurances**

Effectiveness of Internal Control over Financial Reporting (FMFIA § 2)					
Statement of Assurance	<i>Unqualified</i>				
	Beginning Balance	New	Resolved	Consolidated	Ending Balance
<i>Total Material Weaknesses</i>	0	-	-	-	0
Effectiveness of Internal Control over Operations (FMFIA § 2)					
Statement of Assurance	<i>Unqualified</i>				
	Beginning Balance	New	Resolved	Consolidated	Ending Balance
<i>Total Material Weaknesses</i>	0	-	-	-	0
Conformance with Financial Management System Requirements (FMFIA § 4)					
Statement of Assurance	<i>Systems conform to financial management system requirements</i>				
	Beginning Balance	New	Resolved	Consolidated	Ending Balance
<i>Total Non-Conformances</i>	0	-	-	-	0
Compliance with Federal Financial Management Improvement Act (FFMIA)					
Overall Substantial Compliance	Agency		Auditor		
	Yes		Yes		
1. System Requirements	Yes				
2. Accounting Standards	Yes				
3. U.S. Standard General Ledger at Transaction level	Yes				

## National Science Foundation

### FY 2012 Improper Payments Elimination and Recovery Act (IPERA) Reporting Details

- I. Risk Assessment:** Describe the risk assessment(s) performed (including the risk factors examined, if appropriate) subsequent to completing a full program inventory. List the risk susceptible programs (i.e., programs that have a significant risk of improper payments based on OMB guidance thresholds) identified by the agency risk assessments. Include any programs previously identified in the former Section 57 of OMB Circular No. A-II. Highlight any changes to the risk assessment methodology or results that occurred since the last report.

NSF's risk assessment program applies to all award programs the agency funds through its Research & Related Activities (R&RA) and Education and Human Resources (EHR) appropriations. Research and Education Grants and Cooperative Agreements, identified in the former Section 57 of OMB Circular A-11, are included in these appropriations.

OMB guidance and Improper Payment Elimination and Reduction Act (IPERA) require agencies to report on programs or activities with estimated improper payments exceeding \$10 million and 2.5 percent of total program outlays, or \$100 million, and then detail actions the agency is taking to reduce these payments. Furthermore, OMB defines improper payments as an erroneous or improper payment that includes any payment that was made to an ineligible recipient or for an ineligible service.

NSF conducted a review of expenditure data and grant payments related to the Federal Financial Report (FFR). This is in accordance with IPERA and OMB Memorandum M-11-16 dated April 14, 2011, *Issuance of Revisions to Appendix C of A-123*. NSF's risk assessment process has not changed since the last report. See NSF's *FY 2009 Agency Financial Report*, Appendix 2, *IPIA Reporting*, at <http://nsf.gov/pubs/2010/nsf10001/index.jsp?org=NSF> for more information.

- II. Statistical Sampling:** Describe the statistical sampling process conducted to estimate the improper payment rate for each program identified with a significant risk of improper payments. Please highlight any changes to the statistical sampling process that have occurred since the last report.

In accordance with OMB guidance and formula, the sampling team analyzed NSF FFR transaction data. The transaction data analyzed was selected randomly based on the NSF approved sampling plan. The team sampled all FFR transactions for the period October 1, 2010, to September 30, 2011, for review. The total statistical population encompassed each of the quarterly transactions for the respective grantee.

There were no changes to the statistical sampling process used in the last review. For more information, see NSF's *FY 2009 Agency Financial Report*, Appendix 2, *IPIA Reporting*, at <http://nsf.gov/pubs/2010/nsf10001/index.jsp?org=NSF>.

**III. Corrective Actions: Describe the corrective action plans for:**

- a. Reducing the estimated improper payment rate and amount for each type of root cause identified. Agencies shall report root cause information (including error rate and error amount) based on the following three categories: Administrative and Documentation errors; Authentication and Medical Necessity errors; and Verification errors.**
- b. What the agency has accomplished in the area of funds stewardship past the primary recipient. Discussion shall include the status of projects and results of any reviews.**

Although NSF did not meet the thresholds for significant improper payments, the agency will continue its robust risk-based post-award monitoring program, which reviews for improper payments.

**IV. Improper Payment Reduction Outlook, FY 2004–FY 2015**

**Improper Payment Reduction Outlook, FY 2012–FY 2015  
for R&RA and EHR Programs (\$ in millions)**

	<b>Outlays</b>	<b>Improper Payment</b>	<b>Improper Payment</b>
<b>2012</b>	<b>\$5,769</b>	<b>0.055%</b>	<b>\$3.17</b>
<b>2013</b>	<b>\$7,111</b>	<b>0.050%</b>	<b>\$3.56</b>
<b>2014</b>	<b>\$6,716</b>	<b>0.045%</b>	<b>\$3.02</b>
<b>2015</b>	<b>\$6,805</b>	<b>0.044%</b>	<b>\$2.99</b>

From FY 2010 through FY 2011, NSF received relief from the annual IPIA reporting due to the very low improper payment rates reported in its *FY 2009 Agency Financial Report*. In the table above, outlays represent the dollar value of awards sampled for improper payments. Outlay projections for FY 2013 through 2015 are total appropriation outlays as reported in the FY 2013 President’s Budget.

NSF reviewed each of the individual subtransactions representing the FFR. The results of the review were analyzed against the initial requirements. The initial review determined that the minimum number of samples was met to ensure that the results would be statistically sufficient. The first 250 random samples (priority ordered) were received and reviewed. Thirty-eight samples were determined invalid, leaving 222 available samples for the audit. A review of the dollar amount of samples revealed that only 188 samples were needed to meet the minimum requirement. Therefore, 188 samples were used in the statistical evaluation.

The FFR total sample dollar amount was checked to ensure that the minimum sample dollar amount had also been met. There was one sample with errors determined in the audit of the subtransactions sampled. The sample amounted to \$180 and was a clerical error. The calculated

error rate was determined to be 0.055 percent based on the subtransaction FFR expenditures. The error rate was used to extrapolate the values to the FFR sample total, and then to the universe.

The results indicate that the occurrence of improper payments by NSF is well below the significant standard, defined as total improper payments exceeding \$10 million and 2.5 percent of the total outlays as outlined by OMB guidance.

**V. Recapture of Improper Payments Reporting: Discuss payment recapture audit (or recovery auditing) efforts, if applicable. Describe the payment recapture audit program; the actions and methods used to recoup overpayments; a justification of any overpayments that have been determined not to be collectable; and any conditions giving rise to improper payments and how those conditions are being resolved (e.g., the business process changes and internal controls instituted and/or strengthened to prevent further occurrences).**

In compliance with IPERA and OMB Circular A-123, *Management's Responsibility for Internal Control*, NSF evaluated its grants and contracts oversight processes. NSF determined that it was not cost-effective to establish a formal Recapture Audit Program. On January 14, 2011, NSF submitted its plan for meeting the requirements of recapture audits to OMB and NSF OIG. The plan included the reasons for a cost-effective determination. On September 29, 2011, NSF sent a follow-up to OMB reiterating its determination. NSF is leveraging its existing oversight policies and procedures to meet the intent of OMB's requirements on improper payments.

**VI. Accountability: Describe the steps the agency has taken and plans to take (including time line) to ensure that agency managers (including the agency head) are held accountable for reducing and recovering improper payments.**

NSF has remained vigilant in its monitoring of improper payments, and has performed risk-based grant expenditure sampling in support of the NSF post-award grant monitoring program. NSF will continue both its grant expenditure sampling process for improper payments and its internal risk-based approach as part of an integrated and comprehensive grant monitoring program strategy. This strategy, coupled with strong financial management controls, will help NSF ensure that taxpayer dollars are spent wisely and efficiently.

**VII. Agency Information Systems and Other Infrastructure**

**a. Describe whether the agency has the information systems and other infrastructure it needs to reduce improper payments to the levels the agency has targeted.**

As previously noted in Section IV, results indicate that the occurrence of improper payments at NSF is well below the OMB significant standard. NSF will continue using its end-to-end award information systems and infrastructure while evaluating future grant and core financial needs.

- b. **If the agency does not have such internal controls, human capital, and information systems and other infrastructure, describe the resources the agency requested in its most recent budget submission to Congress to establish and maintain the necessary internal controls, human capital, and information systems and other infrastructure.**

Not applicable.

- VIII. Barriers: Describe any statutory or regulatory barriers, which may limit the agency's corrective actions in reducing improper payments and actions taken by the agency to mitigate the barriers' effects.**

No barriers are currently identified.

- IX. Additional Comments: Discuss any additional comments, if any, on overall agency efforts, specific programs, best practices, or common challenges identified, as a result of IPERA implementation.**

NSF is reducing improper payments through the Do Not Pay (DNP) List. Grants and cooperative agreements compose approximately 90 percent of NSF's obligations in a fiscal year. As a result, NSF is incorporating the DNP Solution into its pre-award review process for grants and cooperative agreements. In order to gain efficiencies, the agency is automating the reviews and centralizing the pre-award verification. NSF also performs quarterly reporting on improper payments to its OIG in accordance with OMB guidance.



National Science Foundation • Office of Inspector General  
4201 Wilson Boulevard, Arlington, Virginia 22230

October 15, 2012

MEMORANDUM

To: Dan E. Arvizu  
Chair, National Science Board

Dr. Subra Suresh  
Director, National Science Foundation

From: Allison Lerner *Allison Lerner*  
Inspector General, National Science Foundation

Subject: Management Challenges for NSF in FY 2013

In accordance with the Reports Consolidation Act of 2000, I am submitting our annual statement summarizing what the Office of Inspector General considers to be the most serious management and performance challenges facing the National Science Foundation (NSF). We have compiled this list based on our audit and investigative work, general knowledge of the agency's operations and evaluative reports of others, including the Government Accountability Office and NSF's various advisory committees, contractors, and staff.

We have focused on eight issue areas that reflect fundamental program risk and are likely to require management's attention for years to come. They are:

- Establishing Accountability over Large Cooperative Agreements
- Improving Grant Administration
- Strengthening Contract Administration
- Ensuring Proper Stewardship of ARRA funds
- Managing the U.S. Antarctic Program
- Implementing Recommendations to Improve Workforce Management and the Workplace Environment
- Encouraging Ethical Conduct of Research
- Managing Programs and Resources in Times of Budget Austerity

This year we have identified management of the U.S. Antarctic Program as a top management challenge in light of NSF's tremendous investment in the program, the risks to the program, the arrival of the new support contractor, and the findings of the July 2012 Blue Ribbon Panel report. If you have any questions, or need additional information, please call me at 703-292-7100.

**CHALLENGE: Establishing Accountability over Large Cooperative Agreements**

**Overview:** NSF currently has 685 Cooperative Agreements (CAs), totaling nearly \$11 billion; thirty-eight of these CAs are for over \$50 million each and comprise \$5.5 billion of the total number of CAs. A federal agency can use a cooperative agreement when entering into a relationship with a recipient when the primary purpose of the relationship is to transfer a thing of value to carry out a public purpose of support or stimulation, and substantial involvement between the federal agency and the recipient when carrying out the agreement is expected.<sup>1</sup>

A Cooperative Agreement is not subject to the same rigor and reporting mechanisms as a contract, and does not have the same level of transparency over transactions as a contract. Among other things, NSF uses CAs to construct and fund the operations and maintenance of large facility projects. Since NSF has chosen to use CAs for the construction, operation, and maintenance of high-risk, high-dollar large facility projects, it is imperative that it exercise strong cost surveillance controls over the lifecycle of such projects.

Over the last two years, audits of the proposed construction budgets for three of these non-competitive proposals valued at \$1.1 billion found approximately \$305 million (almost 28 percent), in unallowable or unsupported costs. All three of the awardees' proposals had significant unallowable contingency costs, and two proposals were initially found unacceptable for audit. After much work, one of these proposals was audited, and the auditors issued an adverse opinion, finding that the proposal did not form an acceptable basis for the negotiation of a fair and reasonable price. The third proposal, which was submitted by an awardee found to have an inadequate accounting system, remains unaudited.

Inadequate proposals which contain large amounts of unallowable and unsupported costs undermine NSF's ability to serve as a proper steward of federal funds. Consequently, there are serious questions about NSF's accountability over the \$11 billion in cooperative agreements in its portfolio.

We have also identified serious weaknesses in NSF's post-award monitoring processes for high-risk projects that compound our concern that unallowable costs could be charged to awards, thereby placing federal funds awarded under CAs at further risk. NSF does not routinely obtain incurred cost submissions or audits of costs claimed on its largest CAs to determine the allowability of direct and indirect costs claimed on federal awards. While not required by law or regulation, such submissions and audits are essential tools for ensuring accountability in high-risk, high-dollar projects. In their absence, unallowable costs charged to these awards may go undetected because NSF lacks sufficient visibility over incurred costs. The failure to regularly obtain incurred cost submissions also has a negative impact on our office's ability to conduct incurred cost audits.

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<sup>1</sup> 31 United States Code §3605

**Challenge for the Agency:** It is an ongoing challenge for NSF to establish accountability for the billions of federal funds in its large cooperative agreements. Proper accountability requires cost surveillance measures that include strong pre- and post- award monitoring, especially for high-risk, high dollar facility projects. NSF does not require pre-award audits of awardees' proposals for such projects to ensure that they have reasonable budgets and adequate accounting systems in place before the award is made. Further, NSF does not require the use of OMB's Form 424C (or an equivalent form), for submitting proposals to provide greater visibility and segregate allowable and unallowable proposed costs.

Similarly, NSF does not have a strong post-award monitoring process. NSF does not routinely obtain awardees' incurred cost submissions or initiate audits of costs claimed on its largest CAs, and therefore lacks detailed information necessary to properly oversee these expenses. As a result, there is an increased risk of unallowable costs being charged to these awards and going undetected.

Another ongoing challenge for NSF is the management and oversight of contingency costs in proposed budgets for its large construction projects. In total, audits have identified more than \$224.6 million in unallowable contingency costs out of total proposed costs of over \$1.1 billion. NSF's cooperative agreement award and monitoring process was also cited as a significant deficiency in the FY 2011 financial statement audit.

Without improving end-to-end processes over CA monitoring from the proposal stage to award close-out, NSF cannot affirm that it has received reasonable value for taxpayer dollar and that those dollars are not misused. We recommended that NSF strengthen cost surveillance policies and procedures to ensure adequate stewardship over federal funds.

**OIG's Assessment of the Agency's Progress:** During the past year, the agency has participated in ongoing discussions with OIG regarding the resolution of audit findings and recommendations related to NSF's management of its large cooperative agreements. NSF has agreed to require the use of Form 424C or an equivalent and has stated that it plans to re-examine its procedures related to requiring support for contingency estimates in budget proposals.

### **CHALLENGE: Improving Grant Administration**

**Overview:** NSF receives approximately 51,600 proposals each year for research, education and training projects. Each year the Foundation funds approximately 11,000 new awards, and as of June 2012, it had a portfolio of over 43,000 active awards totaling \$27 billion. In light of the fact that most of these awards are made as grants, it is vital that NSF's grant management processes ensure the most stringent level of accountability.

**Challenge for the Agency:** Oversight and management of awards that is sufficient to safeguard federal funds invested in scientific research has been an ongoing challenge for NSF. The FY 2011 financial statement audit noted several areas of concern about NSF's processes for awarding and administering grants, including a lack of follow-up to determine whether awardees acted to correct problems identified in desk reviews and delays in resolving open audit recommendations. Insufficient sub-recipient monitoring, which has led to inadequately supported and unallowable costs being charged to awards, has also been a challenge for NSF.

Additionally, in recent years, budgetary constraints have placed increased pressure on NSF's ability to maintain strong oversight, as the Foundation has had fewer staff than staffing assessments indicated were needed. For example, NSF planned to conduct 30 Award Monitoring and Business Assistance Program (AMBAP) visits in FY 2011, but completed only 26 visits. This situation underscores NSF's challenge to properly make and oversee awards.

**OIG's Assessment of the Agency's Progress:** NSF's Award Monitoring and Business Assistance Program was designed in part to provide advanced monitoring to ensure that awardee institutions have adequate policies and systems to manage their NSF awards. NSF reported that it completed its annual risk assessment to prioritize AMBAP site visits in FY 2012 and that it completed the 30 AMBAPs that it had planned to conduct.

As part of its efforts to innovate and improve its oversight activities, NSF conducted a virtual site visit pilot program as an enhancement to the AMBAP program. NSF stated that benefits of the program included reduction in travel costs, better use of resources, and more time for documentation review. NSF indicated that it plans to calculate the savings associated with the pilots it conducted; formally solicit awardee feedback; and, develop training on using technology associated with virtual site visits. NSF has also reported that it has started to implement its new financial system and has staffed the project management office that will oversee the system's implementation.

In addition, in response to our audit of NSF's staffing needs for management and oversight of grants, which found among other things, that not having sufficient staffing resulted in NSF reducing the number of planned AMBAP site visits. NSF plans to include the identification and evaluation of opportunities to streamline its operations into its annual workforce planning process to ensure sound financial management and oversight of awardees.

### **CHALLENGE: Strengthening Contract Administration**

**Overview:** For two consecutive years (2009-2010), the monitoring of cost reimbursement contracts was identified as a significant deficiency in NSF's annual financial statement audit. During this past year, the finding was reduced to a management letter comment as a result of actions the agency has taken to correct the situation. Cost reimbursement (CR) contracts are inherently risky because the government assumes much of the risk that poor performance on the

part of the contractor will result in cost overruns. In FY 2012, NSF obligated \$402 million for all contracts. Of that amount, \$282 million were for CR contracts, including \$123 million in advance payments issued before work was done.

But concerns with contract administration remain, especially with regard to the U.S. Antarctic Program (USAP). As NSF transitions to a new contractor, significant issues with its prior contract have yet to be resolved. In particular, NSF has not had an adequate and compliant CAS Disclosure Statement (DS-1) for its USAP contract with Raytheon since 2005. In May, NSF decided to halt an audit by DCAA to determine the adequacy of Raytheon's DS-1, a decision that is likely to further delay closing out this contract. An approved DS-1 is required by Federal Acquisition Regulations and is needed to complete close-out audits and final settlement of costs on the contract. Without an approved DS-1, NSF lacks an agreement with Raytheon on the accounting practices to be used in closing out the contract, such as distinguishing between direct and indirect costs. Such issues are typically settled before a contract begins or at an early stage.

The FY 2011 management letter presented seven recommendations for strengthening NSF's contract monitoring practices, reemphasizing that more attention must be paid to basic monitoring procedures such as the review of incurred cost audits, cost disclosure statements, and incurred cost submissions to ensure the contractor's compliance with contract terms and federal regulations. Contracting weaknesses, though mitigated during the past year, continued to come to light as the agency awarded its largest contract, which provides logistical support to the USAP over 13 years. Following several delays in the procurement process, the award was finally made in December 2011.

**Challenge for the Agency:** NSF's challenge is to correct the deficiencies in contract administration that have been identified by NSF's financial statement audit, to increase the use of firm-fixed price type contracts, and to continue to improve the effectiveness of its contracting policies, practices and professionals. In their most recent management letter, the financial statement auditors recommended that NSF fully implement its cost surveillance oversight procedures and continue improving its controls over cost reimbursement contracts. NSF management must continue to implement its remaining planned corrective actions to ensure that it maintains adequate control over CR contracts.

Cost incurred audits necessary to determine compliance with financial terms and conditions of the contract are critical to meeting this challenge. For large contracts subject to Cost Accounting Standards (CAS), a cost incurred audit can only be effectively performed with an approved CAS disclosure statement and incurred cost submissions. The agency is still in the process of obtaining audits of millions of dollars in costs incurred from 2008 – 2012 by the former USAP contractor and several other of its largest contracts. Incurred cost audits of all open years and of the final close-out voucher are needed. NSF also needs to decide which DS-1 the auditors should use as criteria in performing these audits. An important objective of the final audits should be to ensure the recovery of \$10.4 million in unallowable costs that previous audits have determined the contractor owes NSF.

As a matter of policy, NSF should obtain disclosure statements, incurred cost submissions and incurred cost audits of its largest contracts on a regular basis and promptly resolve any questioned costs that arise. Regarding its largest contracts, NSF must also review and verify the disclosure statement to determine if it is adequate and compliant with CAS, prior to or shortly after the award is made.

**OIG's Assessment of the Agency's Progress:** In FY 2012, NSF made progress in addressing some of the problems in its management of contracts. NSF has taken steps to strengthen its guidance, and is receiving some audits of costs incurred. However, the most recent management letter indicates that work remains to be done to strengthen NSF's contract monitoring and cost surveillance procedures, particularly as it relates to CR contracts. Although the Contracting Manual was updated to require cost incurred submissions every 6 months from its largest contractors, in FY 2011 two of three contractors transmitted the submissions late and the third did not submit one at all. The agency must continue its focus on obtaining adequate disclosure statements and obtaining and reviewing or auditing incurred cost submissions on its largest contracts. The agency also should continue to identify cost reimbursement and advance payment contracts for audits of costs incurred based on materiality and risk, and to fund those audits to verify the validity of costs.

#### **CHALLENGE: Ensuring Proper Stewardship of ARRA Funds**

**Overview:** The American Recovery and Reinvestment Act (ARRA) provided \$3 billion for the National Science Foundation (NSF) as an investment in research that would produce economic benefits and growth. NSF staff worked diligently to obligate and administer the reporting requirements associated with over 4,000 ARRA-funded awards. NSF awardees have registered a 99.5 percent, or higher, compliance rate each quarter with ARRA's enhanced reporting requirements.

On September 15, 2011, OMB issued a memorandum to the heads of federal agencies urging them to spend remaining ARRA funds, and to recapture discretionary grant funds not spent by the end of FY 2013 "to the fullest extent of the law." The memo further explained that federal agencies could request waivers from the end of FY2013 deadline for discretionary grants in extenuating circumstances. According to NSF, as of August 2012, just \$2.1 billion, or 70 percent, of NSF's ARRA funds have been expended; and 474 awards were either less than 50 percent complete or had not started at all. NSF programs have requested waivers for 449 ARRA awards. As of October 1, 2012 OMB has not made any waiver decisions and has extended the deadline for filing final waiver requests through November 2012.

**Challenge for the Agency:** The challenge for the agency remains to: 1) assure that ARRA funds are not subject to fraud, waste and abuse; and 2) continue to press those awardees that are able to accelerate spending within the next year to do so. As ARRA awardees spend down their funds, NSF program managers and administrative staff must be attentive to indications of fraud, waste and abuse, and intervene when appropriate, especially in situations when the deadline to expend funds is accelerated. ARRA funds were intended to provide an immediate stimulus to

the economy, and a significant number of NSF's ARRA awards will not expire until after 2013. The agency should take all actions necessary to ensure that those funds are spent as prudently and quickly as possible.

**OIG's Assessment of the Agency's Progress:** NSF indicates that current ARRA expenditures do not yet reflect the impact of its effort to accelerate spending, and that the rate of completed ARRA awards will increase significantly in the 4<sup>th</sup> quarter of FY 2012, with 1,228 awards set to expire. The agency also continues to actively monitor recipient reporting and the spending of grantees. It has enforced its burn rate grant condition requiring recipients to expend ARRA funds within one year, and implemented report review logic to identify under- or over-reporting of jobs created by ARRA.

The agency has also worked cooperatively with OIG to identify potential occurrences of fraud, waste and abuse associated with ARRA funds. Due to their high visibility, NSF assigns a higher risk adjusted rating to ARRA awards than others and provides them additional oversight. Currently, OIG has 13 active investigations related to Recovery Act funds underway.

#### **CHALLENGE: Management of the U.S. Antarctic Program**

**Overview:** Antarctica is the coldest, driest, windiest, most remote continent on earth. The weather changes frequently and abruptly; temperature drops of as much as 65 degrees F in 12 minutes have been recorded. Since 1956, Americans have been studying the Antarctic and conducting research to better understand Antarctica and its effects on global processes such as climate.

NSF funds and manages the U.S. Antarctic Program (USAP) through its Office of Polar Programs. The program has three year-round research stations—McMurdo, Amundsen-Scott South Pole, and Palmer. The population at McMurdo, the largest station, ranges from approximately 1,100 contractors, staff, and researchers in the summer months from early October through February, to about 265 during the winter. The population at Amundsen, the second largest station, is around 250 in summer and about 50 in the winter. Palmer is the smallest permanent station housing between 15 to 45 people. There are also more than 50 temporary field sites during the summer months. In addition, the program operates two research vessels.

The extreme Antarctic environment and the short period of time during which access to the continent is possible strains the effort to provide logistical support for the USAP. Logistical support activities include communications, health and safety programs, and vehicle and equipment maintenance.

NSF relies on heavy icebreakers operated by the Coast Guard to resupply its Antarctic research stations. Currently, none of those icebreakers is operational and NSF has contracted with a Russian company for an icebreaker for the 2012 and 2013 seasons.

In response to Administration requests, two independent reviews have recently been conducted on the USAP. The first review, headed by the National Research Council, focused on future scientific research and the second conducted by a Blue Ribbon Panel, focused on logistical and infrastructure needs.

**Challenge for the Agency:** Establishing and maintaining a world-class scientific research program in Antarctica's remote and harsh environment is a formidable logistical challenge. In terms of person-days in Antarctica, the logistics effort represents nine times the number devoted to research activity. The Blue Ribbon Panel report issued in July 2012 stated that the USAP logistics system is badly in need of repair and that failure to upgrade the system will increase the cost of logistics until these costs squeeze out funding for science.

The report identified eight major logistical issues: capital budgeting, alternatives to McMurdo station, icebreakers, transportation on the continent, a hard surface ice runway at the South Pole, energy, communications, and safety and health. In addition, the panel found a number of single point failure risks--circumstances in which the failure of one element of a system would render the entire system incapable of performing its function. Examples of these risks include icebreaking capacity, broadband communications, and fire suppression systems requiring electric power.

Some of these issues are longstanding concerns. For example, an August 2005 report by an OPP advisory committee stated that the resupply system was inherently risky due to a single point of failure condition created by the increasing deterioration of the polar icebreakers. The 2005 report was conducted at the request of the OPP Director after OPP initiated an internal preliminary study in 2004 of several resupply alternatives related primarily to the McMurdo and South Pole stations. The report recommended that NSF further investigate the means and costs associated with the report's findings and continue to evaluate their risks and impacts to science. The 2012 Blue Ribbon Report did provide such further investigation but also indicates that NSF has not acted on the 2005 recommendations.

It is a challenge for NSF to ensure that the icebreakers necessary to resupply the research stations are available, other logistical support to enable research is sound, and programs to ensure the health and safety of the researchers and contractors in Antarctica are adequate. We recognize that these challenges are substantial, particularly under current budget constraints. However, as noted by the Blue Ribbon Panel, failure to address these issues could undermine and ultimately halt certain research efforts. It is imperative that NSF prioritize logistical support needs; develop contingency plans; and establish a long range strategy to address these critical needs.

**OIG’s Assessment of the Agency’s Progress:** We understand that NSF plans to respond to the Blue Ribbon Panel Report and to develop an associated action plan later this year. NSF indicated that it had a contingency plan that would have enabled the USAP to operate at a reduced level for two years if an icebreaker was not available; however, in July the agency contracted for a Russian icebreaker that will resupply the 2012 and 2013 seasons.

**CHALLENGE: Implementing Recommendations to Improve Workforce Management and the Workplace Environment**

**Overview:** The National Science Foundation is recognized nationally and internationally for its preeminent role in funding scientific research. To maintain its high caliber work force and to strengthen its ties with the research community and provide critical talent and resources, NSF supplements its permanent, career workforce with a variety of non-permanent staff. All of the non-permanent appointments are federal employees except for those on Intergovernmental Personnel Act (IPA) assignments; IPAs remain employees of their home institution.

As of August 1, 2012, there were 198 IPAs at NSF, 21<sup>2</sup> of which were in managerial or executive positions. Assistant Directors head each of NSF’s seven science directorates and provide leadership and direction to their respective directorates. As of the same date, five of the seven Assistant Directors and one of the Office Heads were IPAs. Assistant Directors are also responsible for planning and implementing programs, priorities, and policy. Similarly, NSF has four science offices led by Office Heads. Within each science directorate are multiple divisions. Fourteen IPAs were division directors. As a result of its reliance on IPAs, NSF experiences a great deal of turnover in its executive ranks.

**Challenge for the Agency:** Because IPAs’ salaries are not subject to federal pay limitations, NSF can incur additional salary cost in using them, above what it would incur for in hiring federal employee in the same position. Other additional costs associated with IPAs can be fringe benefits, lost consulting fees, and travel and relocation expenses.

IPAs generally have not worked in the federal government and therefore, are often not familiar with government rules and administrative processes in the federal workplace. Effectively preparing IPA executives for the federal workplace has been a challenge for NSF.

In addition to the challenges to effective personnel management performance and oversight posed by its use of IPAs, NSF has also faced challenges in implementing recommendations for workforce management change. In response to concerns from the Congress, the OIG, and NSF staff, the Foundation assembled working groups of NSF staff to assess the issues and make recommendations. Between September 2009 and August 2012, these groups made 102 recommendations to NSF management. NSF continues to grapple with prioritizing, tracking,

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<sup>2</sup> Remaining IPA executive was in a position of “science advisor”

and implementing these recommendations. It is a continuing challenge for NSF to move beyond discussion of issues to acting on workforce management issues, some of which are longstanding and have been made by more than one working group.

**OIG's Assessment of the Agency's Progress:** NSF has taken several steps to orient IPAs and other rotating executives through its New Executive Transition Program, which includes a pilot for executive coaching and development of knowledge transfer tools. NSF has instituted mandatory training for all new and continuing executives. Additionally, NSF now requires IPAs to receive annual performance ratings just as career employees do.

NSF reported that it had resolved 73 of the 102 recommendations for workforce management change.

### **CHALLENGE: Encouraging the Ethical Conduct of Research**

**Overview:** Congress passed the America COMPETES Act in 2007 to increase innovation through research and development, and to improve the competitiveness of the United States in the world economy. With regard to NSF, the Act mandates new proposal requirements to advance the professional and ethical development of young scientists, such as mentoring plans for all postdoctoral positions, and plans to provide training on the responsible conduct of research to undergraduates, graduate students, and postdoctoral researchers. However, information collected from our site visits and investigations suggests that many institutions are not taking these requirements seriously, thereby undermining the public's confidence in the research enterprise and potentially placing NSF funds at risk. NSF is challenged to provide more oversight on institutional implementation of these requirements and to provide meaningful guidance regarding Responsible Conduct of Research (RCR) training.

**Challenge for the agency:** NSF's primary challenge is to ensure that awardees implement credible RCR programs, thereby creating a top-down culture of academic integrity that extends to all levels of the university. At a time when opinion surveys indicate that more Americans are becoming distrustful of science, it is important that the conduct of scientific research not be tainted by instances of misrepresentation or cheating. Affirmative steps are necessary to counter the trends of increasing integrity-related violations. Recent surveys suggest that 75% of high school students and 50% of college students admit to cheating, and 30% of researchers admit to engaging in questionable research practices. Consistent with these survey results, OIG has seen a dramatic increase in substantive allegations of plagiarism and data fabrication, especially as it relates to junior faculty members and graduate students. Over the past 10 years, the number of allegations received by our office has more than tripled, as has the number of findings of research misconduct NSF has made based on OIG investigation reports.

Only 10% of the science and engineering workforce hold PhD's. For this reason the NSF Act places responsibility on NSF to "strengthen scientific [and engineering] research potential at all levels in ... various fields." NSF's research and training programs reach individuals who are

ultimately employed by academia, industry, and government, and could have a broad and positive impact on the US science, engineering and education workforce. While NSF has been responsive to the recommendations contained in our research misconduct investigation reports, those actions only address incidents after the fact. Extrapolating the number of allegations OIG has received across the 45,000 proposals NSF receives annually, suggests 1300 proposals could contain plagiarism and 450-900 proposals could contain problematic data. Since NSF funds research in virtually every non-medical research discipline, the agency is in a unique position to lead the government response to addressing these disturbing trends at all levels of education.

**OIG's Assessment of the Agency's Progress:** The agency responded to the America COMPETES Act by instituting a requirement that grantees submit mentoring plans for all NSF-supported "post-docs" and have an RCR training plan for NSF-funded students. The NSF guidance was very limited and offered great flexibility to grantee institutions to develop plans tailored to their needs. OIG has observed a wide disparity among grantee RCR programs ranging from high quality mentoring programs to those that simply refer students to web-based or computer-based training. Early intervention remains critical to any effort to ensure that students understand proper professional practices and the implications of misconduct. Anecdotally, we continue to receive substantive data fabrication/falsification allegations involving students and post-docs; we currently have 20 active investigations regarding such allegations. Therefore we continue to believe that more needs to be done and NSF should expand its influence with institutions regarding this important issue. Accordingly, OIG is developing a plan to systematically review RCR plans after the America COMPETES RCR requirements have been given sufficient time for implementation throughout the research community. We intend to conduct a review of institutional efforts in FY 2013.

Research is also an increasingly global enterprise that includes collaborations among countries. OIG's review of the Basic Research to Enable Agricultural Development (BREAD) program proposals and awards highlighted a significant failure of the US PIs to develop comprehensive oversight programs with foreign subawardees. The most poorly developed aspects of these plans were in RCR training and research misconduct reporting. Based on recommendations in our report, NSF modified its solicitation for the next round of proposals for the program to clearly require oversight plans that address all of the program's requirements, and it asked the current grantees to describe how they would address RCR training and research misconduct enforcement.

An OIG follow-up review found that the majority of the original awardees' plans, as well as three of the four new awardees' plans, were deficient regarding RCR training and research misconduct. In response to our recommendations, NSF agreed to: (1) determine how to bring the current program awardees' oversight plans in line with the requirements for RCR training and research misconduct reporting and enforcement; and (2) make no future awards for proposals that do not provide comprehensive oversight plans that were demonstrably developed in collaboration with the international subawardees, including strong plans for RCR training and research misconduct reporting and enforcement.

**CHALLENGE: Managing Programs and Resources in Times of Budget Austerity**

**Overview:** More than ever, Federal agencies and managers are expected to maximize the value of every dollar spent or risk losing the confidence of their stakeholders. Responsible managers across government are reviewing their operational activities in light of increased public anger over waste and mismanagement to determine where and how money might be saved. During the past year, the administration issued an executive order requiring agencies to establish a plan for reducing specific types of administrative costs by at least 20 percent below FY 2010 levels. Travel and conference costs have been singled out for even greater scrutiny and cost savings. While government budgets are developed long in advance, there are numerous discretionary expenditures in every organization that occur on a weekly or monthly basis and present real opportunities for savings.

OIG has performed several audits over the past few years to examine some of the agency's regular expenditures and identify potential cost savings, as well as changes to the procurement process, that could lead to efficiencies and reduced opportunities for fraud waste and abuse. Our audit of Independent Research/Development (IR/D) travel policies and practices determined that travel costs and time were not being monitored consistently across the agency. Expenditures of approximately \$1.8 million were incurred in FY 2010 under the IR/D program, which allows some NSF staff to spend up to 50 work days a year at their home institutions and attend related conferences. We recommended that the agency consider establishing an annual limit for individual IR/D travel costs, encouraging participants to take fewer trips of longer duration, or to combine NSF telework with IR/D travel. Since the annual cost of IR/D-related trips per traveler ranged from \$225 to \$45,000, reducing IR/D travel costs would help the agency meet the requirements of the administration's executive order.

OIG's audit of NSF staff retreats, a subset of conference-related spending, recommended that the agency reevaluate the practice of traveling outside of the Washington metropolitan area and improve its internal controls to better ensure cost containment and compliance with applicable standards. Without controls such as clear policy guidance and adequate monitoring, NSF may be overpaying for staff retreats. NSF held a total of 95 staff retreats in FYs 2010 and 2011, which the OIG estimated cost the agency at least \$361,000.

**Challenge for the Agency:** There are many opportunities to conserve money within a \$7 billion dollar organization like NSF without undermining the agency's core mission. The agency is therefore challenged to identify opportunities to streamline processes and cut costs where it can, in order to send a clear message to its employees and stakeholders that strong, sound management practices are being applied; reasonable ideas to reduce spending are welcome and will be implemented; and at a time of hardship for so many Americans, the public's continued financial support for science is not taken for granted.

**OIG's Assessment of the Agency's Progress:** NSF responded positively to the two OIG reports described in the overview. In June, a staff memorandum from the Director promised that

NSF would identify opportunities for savings in spending on travel and conferences, and that new guidelines and goals associated with cost savings are forthcoming. It also reported that it was on track during FY 2012 to reduce agency travel by 9 percent below its 2010 baseline. With regard to the IR/D program, the agency agreed that additional steps are needed to strengthen management controls and implemented changes to improve program oversight and accountability in May. NSF is considering further actions and should encourage new ideas that save the government money and foster a culture of economy and efficiency.



**NATIONAL SCIENCE FOUNDATION**  
4201 WILSON BOULEVARD  
ARLINGTON, VA 22230

OFFICE OF THE  
DIRECTOR

October 31, 2012

**MEMORANDUM**

**TO:** Allison Lerner  
Inspector General, NSF

**FROM:** Director, NSF

**SUBJECT:** NSF's Progress on the FY 2012 Management Challenges and Acknowledgement of the Inspector General's FY 2013 Management Challenges Memorandum

The attached Progress Report highlights the significant actions taken by NSF in FY 2012 on the management challenges outlined in your October 17, 2011, memorandum. These challenges cover seven broad categories and two emerging areas: Ensuring Proper Stewardship of Recovery Act Funds, Improving Grant Administration, Strengthening Contract Administration, Implementing Improvements in Workforce Management and the Workplace Environment, Encouraging the Ethical Conduct of Research, Effectively Managing Large Facilities and Instruments, Managing Programs and Resources in Times of Budget Austerity, Transitioning to Cloud Computing and to the Trusted Internet Connection, and Planning for the Next NSF Headquarters.

This also serves to acknowledge receipt of your memorandum dated October 15, 2012, regarding continuing and potential new management challenges for NSF in FY 2013. Some of these challenges are fundamental issues that the Foundation has been dealing with on a continuing, collaborative, cross-agency basis. As in past years, your memorandum will be shared and discussed with the Foundation's executive and senior officers.

The Foundation remains committed to serving the research community effectively, to continually improve stewardship across the agency, and to safeguard federal funds awarded by NSF in support of the mission. As we continue efforts to operate more efficiently and effectively, your memorandum will help guide future activities and resource management decisions. We look forward to continuing to work with your office to achieve these goals.

  
Subra Suresh

Attachment:

cc: Chair, National Science Board  
Chair, National Science Board Audit and Oversight Committee

## National Science Foundation FY 2012 Progress Report on OIG Management Challenges

### CHALLENGE: Ensuring Proper Stewardship of ARRA Funds

**NSF Overview:** The Foundation continues implementation and management of its American Recovery and Reinvestment Act (ARRA) portfolio. NSF is an important agency in the Administration’s ARRA implementation efforts because advancements in technology resulting from fundamental research are a major driver in the long-term growth and overall strength of the American economy. Over the past fiscal year, NSF has focused on these investments, specifically taking steps to encourage awardees to responsibly accelerate efforts where possible to impact the U.S. economy. As of September 30, 2012, \$2.10 billion of NSF’s ARRA funds have been outlayed. This expenditure level does not yet reflect the impact of NSF’s policies on accelerated awardee spending. As awardees, constrained by the nature of academic research spending, have time to responsibly accelerate and in some cases wind down award activities early, the Foundation expects increased expenditures by the end of fiscal year 2013. NSF’s exemplary ARRA recipient reporting program and its rigor in implementing its burn rate condition requiring recipients to expend ARRA funds within a year of award or risk termination, not only make NSF well-suited in its role as an ARRA funding agency, but also make it poised to continue to successfully meet the challenges of increased levels of accountability and transparency in government spending.

a. *Assure that ARRA funds are not subject to fraud, waste, and abuse*

**NSF’s Significant Actions Taken in FY 2012**

- Collaborated with the Recovery Accountability and Transparency Board (RATB) to run NSF ARRA award data through the RATB-designed FastAlert system, which provides a consolidated review of various data sources for adverse information on existing or potential awardees to reduce agency costs/time in manual checks, liability, and improper payments. NSF’s data run was successful, disclosing no surprises or major issues, and supported the RATB’s government-wide goals to prevent fraud, waste, and abuse.
- Continued risk-based monitoring of ARRA award expenditures through NSF’s Award Monitoring and Business Assistance Program (AMBAP), which is used for advanced post-award oversight.
- Required ARRA and non-ARRA funded awardees of Major Research Equipment and Facility Construction (MREFC) projects to report on earned value management and milestone status.

**NSF’s Anticipated Next Steps**

- Continue NSF’s robust monitoring and business assistance support for both ARRA and non-ARRA awards.

b. *Evaluate ARRA award portfolio and identify and reach out to those awardees that are able to accelerate spending within the next two years*

**NSF’s Significant Actions Taken in FY 2012**

- Monitored ARRA awards to ensure compliance with Article 1 of NSF’s ARRA Terms and Conditions, which requires awardees to spend within the first year of award or risk award termination.
- Coordinated agency response to Office of Management and Budget (OMB) Memorandum M-11-34 with other agencies (e.g., National Institutes of Health) and developed an aggressive communication strategy to notify all ARRA award recipients of the OMB directive to accelerate spending in order to exhaust remaining funds by September 30, 2013. All NSF communications emphasized *responsible* acceleration of ARRA expenditures, in accordance with the terms and conditions of the award and allowable pursuant to the applicable

	<p>cost principles.</p> <ul style="list-style-type: none"> <li>• Worked with NSF programs to review NSF’s entire active ARRA portfolio of approximately 4,400 awards and identified awards that require a waiver from OMB to continue to expend funds beyond September 30, 2013. As part of that process, NSF sent out targeted emails to all Principal Investigators and Authorized Organizational Representatives to provide an opportunity to request consideration for a waiver based on the OMB criteria from their respective NSF program officers. NSF’s most senior program staff then submitted justifications for waiver requests for only those awards with the most compelling rationales to be vetted by the NSF ARRA Steering Committee. Awards to be included in NSF’s waiver request to OMB were ultimately decided upon by the NSF ARRA Senior Accountable Official prior to submission to OMB’s Office of Federal Financial Management (OFFM) on June 19, 2012.</li> <li>• Provided government-wide leadership through NSF’s implementation of M-11-34 as the NSF waiver package submitted in June was used by OFFM as the model for its waiver template guidance issued to all agencies. Based on OFFM’s final guidance on waiver requests issued in early August, NSF’s original waiver package served only as the Foundation’s draft submission. The deadline for final waiver requests was extended by OFFM until November 30, 2012, in order for agencies to include updated FY 2012 year-end financial information.</li> <li>• Notified ARRA awardees in September 2012 of the status of NSF’s waiver request submitted to OMB and continued to encourage responsible acceleration.</li> </ul> <p><b>NSF’s Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• Submit NSF’s final waiver package to the OMB Director by the extended deadline of November 30, 2012.</li> <li>• Upon receipt of the OMB Director’s waiver determination, issue further guidance to NSF awardees and amend awards, if appropriate.</li> <li>• Encourage responsible acceleration of all ARRA awards and closeout of those awards not identified for waivers that are able to complete their projects by September 30, 2013.</li> </ul>
<p><i>c. Monitor ARRA awards to ensure awardee compliance with reporting requirements</i></p>	<p><b>NSF’s Significant Actions Taken in FY 2012</b></p> <ul style="list-style-type: none"> <li>• Delivered a reporting compliance rate of more than 99 percent over the last eleven reporting quarters with the highest rate in FY 2012 reaching 99.8 percent compliance, which exceeded the government-wide quarterly compliance rates.</li> <li>• Continued NSF’s practice of sending multiple reminder emails to recipients and alerting recipients of their noncompliance, which resulted in no instances of three-time non-reporting in FY 2012 and thus no award terminations. Only suspended three awards for two-time non-reporting until the awardees complied with reporting requirements in the subsequent quarter.</li> <li>• Performed a Final Report exception trend analysis to anticipate increased volume in final report submissions in order to take steps to ensure reporting compliance.</li> <li>• Participated in OMB agency forums, demonstrations, and user testing on the agency final review and reconciliation process, which is designed to improve data quality and provide agency certification for final reports submitted by recipients for fully expended awards.</li> </ul> <p><b>NSF’s Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• Analyze and certify ARRA awards eligible for the agency final review and recipient reconciliation process, a new RATB initiative for</li> </ul>

	<p>all ARRA awards.</p> <ul style="list-style-type: none"> <li>• Maintain targeted outreach approach for reporting noncompliance and data quality improvement.</li> <li>• Identify ways to preserve the Foundation’s high rate of reporting compliance in an era of diminishing resources.</li> <li>• Continue to work with the RATB, OMB, and others to contribute expertise to government-wide recipient reporting process improvements.</li> </ul>
<p><b>CHALLENGE: Improving Grant Administration</b></p> <p><b>NSF Overview:</b> NSF manages awards throughout the project life cycle from pre-award through closeout. By the end of FY 2012, NSF was managing 44,482 active awards, representing \$27.7 billion in obligated funds to 3,092 unique awardees. The policies, business practices, and information technology (IT) systems requisite to ensure accountability constantly evolve to align with changes in federal regulations, legislative mandates, and agency-specific requirements. Development of the Award Cash Management Service (ACMS), NSF’s new awardee payment process, will enable NSF to obtain award-specific expenditure data based on real-time cash transactions rather than wait for after-the-fact quarterly reports. During FY 2012, NSF made significant technology upgrades to strengthen its business infrastructure. Progress was made on the planning and initial implementation of iTRAK, a modernization of NSF’s 30-year old financial system. Expected to be functional in early FY 2014, iTRAK will provide increased transparency and capacity for processing and reporting data needed for decision-making. In addition, NSF continues to capitalize on technology to address increasing accountability demands and reduced resources. New IT tools included automated compliance checks, alerts to awardees, and document archiving to free program staff for more complex oversight activities; virtual site visits to provide more cost-effective oversight of those awardees managing NSF’s highest risk awards; Award Manager (query tool within Research.gov) to enhance financial oversight of awards by program and grant staff; and a monitoring system to manage cost analysis and audit functions. Finally, NSF continues to expand and upgrade mechanisms for communicating policies, regulations, and business practices within this dynamic environment to its staff and external stakeholder communities.</p>	
<p><i>a. Improve oversight of awardees’ financial accountability, programmatic performance, and compliance with applicable Federal and NSF requirements</i></p>	<p><b>NSF’s Significant Actions Taken in FY 2012</b></p> <p><u>Financial Accountability:</u></p> <ul style="list-style-type: none"> <li>• Completed selection of a financial system solution for iTRAK, NSF’s new financial system and finalized staffing for the iTRAK Project Management Office that will oversee system implementation.</li> <li>• Finished initial development of ACMS, which will increase control over how awardees draw down funds, including contingency budgeted on large-scale construction projects.</li> </ul> <p><u>Programmatic Performance:</u></p> <ul style="list-style-type: none"> <li>• Developed system edits in the Project Report System component of eJacket to encourage timely submission of public-faced Project Outcomes Reports by preventing Principal Investigators (PIs)/co-PI(s) from receiving approval for any new NSF funding or post-award administrative actions (e.g., no-cost extensions or grant transfers) if reports are overdue.</li> <li>• Implemented a FastLane compliance check to ensure that all submitted proposals include a “Data Management Plan” describing conformance with NSF policy on dissemination and sharing of research results.</li> </ul> <p><u>Policy and Procedures Upgrades – Programmatic and/or Administrative Performance:</u></p> <ul style="list-style-type: none"> <li>• Initiated FY 2013 upgrades to major NSF policy documents (i.e., Proposal and Award Policies and Procedures Guide (PAPPG), Proposal and Award Manual (PAM), and suite of NSF award terms and conditions). It is anticipated that the new version of the</li> </ul>

	<p>PAPPG will be issued in early October 2012.</p> <ul style="list-style-type: none"> <li>• Commenced planning for a desktop guide for cost/price analysis of large-scale cooperative agreement proposals (e.g., establishment of a process, types of data to be used for analysis, identification of requisite skills and training).</li> </ul> <p><i>Training and Outreach – Programmatic and/or Administrative Performance:</i></p> <ul style="list-style-type: none"> <li>• Developed a proof-of-concept platform for online, self-directed learning modules that will focus on important proposal processing and grant administration topics for ready access by NSF staff via the “Inside NSF” homepage.</li> <li>• Conducted “in-reach” to NSF program staff on changes in policies and procedures; conducted outreach to PIs and Sponsored Project Offices to strengthen compliance with NSF and government-wide regulations and procedures through the hosting of NSF Grants Conferences and webinars; participated in meetings and events of professional research administration societies; as well as communicated through use of online Frequently Asked Questions (FAQs) and issuance of notices to the research community.</li> </ul>
	<p><b>NSF’s Anticipated Next Steps</b></p> <p><i>Financial Accountability:</i></p> <ul style="list-style-type: none"> <li>• Implement ACM\$ in two phases: Phase I – Transition of a select group of 34 awardee organizations to ACM\$ in winter 2013. Phase II – Complete transition of all awardees in spring 2013.</li> <li>• Establish new internal procedures around controls provided by ACM\$ over how awardees draw down contingency funds, if applicable, and expenditure limitations imposed under an award.</li> </ul> <p><i>Policy, Procedures, and System Upgrades:</i></p> <ul style="list-style-type: none"> <li>• Update NSF policy and procedural manuals, business processes, IT systems, and outreach to NSF staff and relevant external stakeholders in response to emerging changes in NSF or government-wide policies and procedures.</li> <li>• Revise and obtain clearance for the standard operating guidance addressing awardee unfunded post-retirement benefit liabilities for Federally Funded Research and Development Centers.</li> <li>• Initiate efforts to document processes around the closeout of large-scale, cooperative agreements, including modifying the Cooperative Agreement Financial and Administrative Terms and Conditions, if appropriate.</li> </ul> <p><i>Programmatic Performance:</i></p> <ul style="list-style-type: none"> <li>• Commence phased transition of the Research Performance Progress Report (RPPR) for annual, final, and interim progress reports from FastLane to Research.gov to conform to a government-wide effort to create greater consistency in the administration of federal research awards through streamlining and standardizing reporting formats. The new system will collect project report information in a more structured format, which will enhance NSF efforts on monitoring and evaluation of projects and programs.</li> <li>• Develop and implement additional FastLane compliance edits to prevent submission of noncompliant or incomplete proposals to reduce or eliminate manual, pre-award proposal screening by program staff. Identify an initial core set of high-value rules to be enforced for proposals submitted in response to specific program descriptions/announcements. Employ automated checks for documentation in eJacket for documentation requirements not blocked by FastLane during proposal submission.</li> </ul>

	<ul style="list-style-type: none"> <li>• Initiate expansion of Award Manager to include cooperative agreements and postdoctoral fellowships, as well as continue populating the NSF Data Warehouse with core management data and offering key enterprise-wide reports through the Business Intelligence tool. <i>Training and Outreach – Programmatic and/or Administrative Performance:</i></li> <li>• Begin development of content for three online, self-directed learning modules, providing succinct reference information on NSF cost sharing policies, processes for the clearance of proposal-generating and related documents, and enhancements to NSF Merit Review criteria.</li> <li>• Continue to conduct and improve outreach and communication activities to brief NSF program staff and awardee community in order to strengthen compliance with NSF and government-wide regulations and procedures.</li> </ul>
<p><i>b. Maintain adequate oversight through use of AMBAP site visits during continued budget restrictions and limitation of resources that impacts NSF's ability to perform such visits</i></p>	<p><b>NSF's Significant Actions Taken in FY 2012</b></p> <ul style="list-style-type: none"> <li>• Completed the annual risk assessment used to prioritize Award Monitoring and Business Assistance Program (AMBAP) site visits for FY 2012.</li> <li>• Conducted 30 AMBAP site visits, including the pilot of four successful Virtual Site Visits (VSVs) intended to mitigate current and future constraints related to staff workload and travel funds.</li> <li>• Briefed OIG staff and independent Financial Statement Auditors on the FY 2012 VSV pilot.</li> <li>• Continued "in-reach" to NSF staff and outreach to external stakeholders to strengthen understanding of NSF's risk assessment process and advanced monitoring performed through the AMBAP.</li> </ul> <hr/> <p><b>NSF's Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• Perform FY 2013 risk assessment and select 30 awardee organizations for AMBAP site visits, either onsite or virtual.</li> </ul>
<p><i>c. Develop a robust audit resolution process to address findings and questioned costs, and ensure development and implementation of necessary corrective actions by awardees.</i></p>	<p><b>NSF's Significant Actions Taken in FY 2012</b></p> <ul style="list-style-type: none"> <li>• Released revised Policies and Procedures for Audit Report Issuance and Resolution of Findings Contained in Audits of NSF Awardees, Standing Operating Guidance (SOG), 2012-1.</li> <li>• Established the operationally-focused NSF-OIG Audit Quality Subgroup under the Stewardship Collaborative, which agreed to the segregation of internal (NSF) versus external (awardee) audit findings and release of detailed schedules of questioned costs upon issuance of audit reports.</li> <li>• Enhanced the Management and Tracking Data System, which was established by the Cost Analysis and Audit Resolution Branch for monitoring resolution status, questioned costs, and processing issues.</li> <li>• Initiated a series of semi-annual reports to the NSF Director on the number of resolved audits, as well as information on audit resolutions exceeding six months.</li> </ul> <hr/> <p><b>NSF's Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• Continue to strengthen audit resolution products and processes under the NSF-OIG Stewardship Collaborative.</li> </ul>

	<ul style="list-style-type: none"> <li>• Utilize the recently developed mechanism to track and follow up on implementation of non-monetary final actions.</li> <li>• Provide staff training on SOG 2012-1 to ensure understanding and standardized implementation of new procedures for audit resolution.</li> </ul>
<p><i>d. Expand and improve subrecipient oversight and monitoring efforts</i></p>	<p><b>NSF's Significant Actions Taken in FY 2012</b></p> <ul style="list-style-type: none"> <li>• Included subrecipient oversight and monitoring in outreach directed at all phases of the award process. Conducted outreach and other administrative contact within NSF as well as with awardees and potential awardees through AMBAP site visits, desk reviews, and grants conferences.</li> <li>• Monitored the Federal Funding Accountability and Transparency Act (FFATA) Subaward Reporting email alias to provide assistance for awardee compliance with the new reporting requirements.</li> <li>• Continued providing guidance and outreach to program staff for the Academic Research Infrastructure (ARI) awards, which involve subaward approvals.</li> </ul>
	<p><b>NSF's Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• Continue to provide staff support for the FFATA Subaward Reporting email alias to assist awardees as needed.</li> <li>• Complete an upgrade of policy and procedural guidance for NSF staff and awardees through issuance of policies and procedure manuals, outreach activities, and FAQs.</li> </ul>
<p><b>CHALLENGE: Strengthening Contract Administration</b></p> <p><b>NSF Overview:</b> Contract administration remains a critical function for NSF. As such, the Foundation is taking a comprehensive approach to continue improving in this area. NSF has taken steps to strengthen contract administration through policy, procedure, and human capital initiatives. Specifically, NSF has strengthened guidance to address gaps related to cost reimbursement contracting and has updated a key Acquisition Workforce document to bring the NSF Acquisition Workforce policy into full compliance with recent policy changes issued by OMB's Office of Federal Procurement Policy. NSF has also received cost incurred audits (ICAs) and taken affirmative action to receive additional ICAs on its largest contract.</p>	
<p><i>a. Correct the deficiencies in contract administration that have been identified in NSF's financial statement audit and Fiscal Year 2011 Corrective Action Plan (CAP)</i></p>	<p><b>NSF's Significant Actions Taken in FY 2012</b></p> <ul style="list-style-type: none"> <li>• Issued an Acquisition News Flash (ANF) reminding all acquisition personnel of the importance of monitoring ICAs, along with a companion ANF reminding all acquisition personnel of the importance of obtaining a determination of adequacy of the contractor's Cost Accounting Standards (CAS) Disclosure Statement prior to award of CAS-covered contracts.</li> <li>• Added language to the NSF Contracting Manual addressing the importance of monitoring ICAs and the requirement to request audits within one year of the end of the contract period of performance.</li> <li>• Released an annual agency-wide notice reminding all certifying officials and administrative officers of the importance of using the correct object class codes on funding commitment documents submitted to the contracting office.</li> </ul>
	<p><b>NSF's Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• Issue a new Price Negotiation Memorandum (PNM) Guide with policies and procedures for completing pre-award PNMs when</li> </ul>

	<p>required to ensure the cost or price of the proposed action is fair and reasonable.</p> <ul style="list-style-type: none"> <li>• Continue to monitor the completion and resolution of any audits received on cost reimbursement contracts.</li> </ul>
<p><i>b. Continue to improve the effectiveness of NSF's policies, practices, and contracting professionals</i></p>	<p><b>NSF's Significant Actions Taken in FY 2012</b></p> <ul style="list-style-type: none"> <li>• Issued an updated Contracting Officer Representative (COR) handbook detailing important information needed by NSF CORs to effectively manage NSF contracts.</li> <li>• Verified that 100% of NSF's warranted contracting officers are certified at the appropriate level under the Federal Acquisition Certification in Contracting Program (FAC-C).</li> <li>• Added eight new contracting guides and templates to increase the total to 33 and hosted two 40-hour Performance-Based Contracts classes in March and April 2012 for NSF CORs and contracting staff.</li> </ul> <hr/> <p><b>NSF's Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• Ensure that NSF contracting officers and contract specialists obtain required FAC-C recertification training to improve their skills and knowledge of the ever-changing contracting process to ensure effective operation and management of the NSF contracting function.</li> <li>• Continue to provide basic COR certification and recertification training classes through NSF Academy as funding allows.</li> </ul>
<p><i>c. Complete incurred cost audits and closeout the U.S. Antarctic Program (USAP) contract and obtain disclosure statements and incurred cost audits of its largest contracts on a regular basis and promptly resolve any questioned costs that arise</i></p>	<p><b>NSF's Significant Actions Taken in FY 2012</b></p> <ul style="list-style-type: none"> <li>• Received FY 2005/2006 ICA report for the Raytheon Antarctic Logistics Support Contract (RTSC) from the Defense Contract Audit Agency (DCAA). The FY 2007 ICA report has been drafted and is under review by DCAA management; the audit for Fiscal Years 2008 through 2010 has been commenced. An order for the RTSC FY 2011/2012 ICA, which includes audit of the final Raytheon invoice to enable closeout of the contract, has been executed under an Interagency Agreement with DCAA.</li> <li>• Established a standard white paper format for documenting the process and procedures for resolving all questioned costs under each of the RTSC ICAs to ensure the prompt resolution of any and all questioned costs identified in such audits.</li> <li>• Obtained determinations of adequacy of the accounting systems and CAS Disclosure Statements for all covered contracts.</li> </ul> <hr/> <p><b>NSF's Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• Await receipt of the DCAA report for the RTSC FY 2008/2009/2010 ICAs by June 30, 2013, after which any and all questioned costs will be resolved promptly.</li> <li>• Continue to ensure that all accounting systems and CAS Disclosure Statements are determined adequate for all covered contracts and that supporting documentation is contained in the contract file for all new contracts as appropriate.</li> </ul>
<p><b>CHALLENGE: Implementing Improvements in Workforce Management and the Workplace Environment</b></p> <p><b>NSF Overview:</b> Over the past few years, NSF has received numerous recommendations for action related to workforce management and the workplace environment from internal staff groups, as well as from the Office of Personnel Management (OPM), Congress, and the OIG. NSF has been successful in addressing many of the recommendations described in OIG Audit Report 11-2-006 and has others in various stages of planning and action. There has been consistent progress in addressing</p>	

<p>past recommendations, as well as in responding to new or modified recommendations as they arise from internal or external sources. Actions are taken in the context of NSF’s Strategic Plan and annual Government Performance and Results Act (GPRA) performance goals, as well as aligning with the NSF Human Capital Strategic Plan and the NSF Diversity and Inclusion Strategic Plan.</p>	
<p><i>a. Address workforce and workplace challenges with sustained management attention and commitment from the Director</i></p>	<p><b>NSF’s Significant Actions Taken in FY 2012</b></p> <ul style="list-style-type: none"> <li>• Updated the Human Capital Strategic Plan to align with NSF’s Strategic Plan and completed a Diversity and Inclusion Strategic Plan, both of which address aspects of workforce and workplace challenges.</li> <li>• Included key elements of identified workforce challenges in the FY 2012/2013 GPRA Annual Performance Goals: diversity and inclusion; Intergovernmental Personnel Act (IPA) performance management; general workforce and Senior Executive Service performance management systems; and learning and development programs.</li> <li>• Resolved 73 out of 102 recommendations reviewed in OIG Audit Report 11-2-006 and described a plan for reviewing and taking action on the remaining recommendations.</li> <li>• Instituted an NSF IdeaShare campaign around dialogue between supervisors and employees on performance management and workload issues.</li> <li>• Initiated semi-annual Director/Deputy Director Town Hall meetings for all NSF employees as part of a plan to enhance communications and engagement with staff, which also includes the Weekly Wire and the IdeaShare concept.</li> <li>• Developed new approaches to reviewing the Federal Employee Viewpoint Survey (FEVS) results with both management and employees and making a broader range of data and analysis available to NSF staff by breaking out the FEVS data by directorate and major office so individual organizations could perform internal analyses and take action as appropriate.</li> <li>• Set up periodic meetings between the Director, Deputy Director, Chief Human Capital Officer (CHCO), and the Executive Committee of NSF’s union, American Federation of Government Employees (AFGE) Local 3403, to discuss issues important to NSF’s bargaining unit membership.</li> </ul> <p><b>NSF’s Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• Complete and implement a Diversity and Inclusion Action Plan.</li> <li>• Review and analyze the FY 2012 FEVS data and identify recommendations for improving workforce management.</li> <li>• Continue efforts to raise the visibility of targeted aspects of human capital management to the attention of NSF senior management and enhance their engagement with issues that require decision before further action can be taken.</li> </ul>
<p><i>b. Establish an effective, structured process for implementing the workforce management recommended changes</i></p>	<p><b>NSF’s Significant Actions Taken in FY 2012</b></p> <ul style="list-style-type: none"> <li>• Focused on redesigning practices for obtaining approvals of actions and supporting planning and implementation of efforts to improve human capital management with the hiring of a new CHCO.</li> <li>• Initiated inclusion of human management topics on a regular basis in the weekly Senior Management Roundtable meetings (monthly) and the weekly Deputy Assistant Director and Executive Officer meetings (at least bi-weekly). These two senior management groups</li> </ul>

<p><i>identified by the working groups that were assembled to assess the issues</i></p>	<p>are now more broadly engaged in establishing effective human capital management practices.</p> <ul style="list-style-type: none"> <li>• Developed options for structured processes to implement recommended workforce management changes for review and consideration by NSF’s senior management.</li> </ul> <p><b>NSF’s Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• Draft the charter for constituting the membership of the Senior Management Roundtable as a Human Capital Management Council, based on the MREFC Panel model.</li> <li>• Develop the structure for providing decision-ready actions with relevant information and approaches to implementation of pending change recommendations to the Human Capital Management Council.</li> <li>• Participate in the OPM/OMB HRStat Pilot, which focuses on regular review of human capital management data that are relevant to decision making for mission accomplishment. This will augment existing capabilities to identify and use data in reviewing existing recommendations and making plans for action.</li> </ul>
<p><i>c. Identify a permanent champion with both the time and authority to lead the workforce management efforts</i></p>	<p><b>NSF’s Significant Actions Taken in FY 2012</b></p> <ul style="list-style-type: none"> <li>• Filled Head of the Office of Information and Resource Management vacancy, who also functions as NSF’s CHCO. Key human capital management challenges planned and coordinated by the CHCO have included development of the Diversity and Inclusion Strategic Plan and expanded attention to Career/Life Balance issues of all types, such as the new 6 a.m. start time.</li> <li>• Also filled Division Director for Human Resource Management (HRM), who functions as NSF’s Deputy CHCO, as well as hired an HRM Deputy Division Director.</li> </ul> <p><b>NSF’s Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• Recruit and replace the retiring Labor Relations Officer in FY 2013.</li> </ul>
<p><i>d. Prepare and integrate its rotating executives into the federal government workplace and ensure new executives have the full set of skills (scientific, administrative, and leadership) necessary to lead the agency</i></p>	<p><b>NSF’s Significant Actions Taken in FY 2012</b></p> <ul style="list-style-type: none"> <li>• Incorporated the Executive Leadership Retreat as a principal mechanism for bringing new NSF executives into the agency and ensuring they have the full set of skills needed to lead the agency.</li> <li>• Instituted a mandatory training requirement for all new and continuing executives and expanded agency’s collection of internal training offerings aimed at supervisors, managers, and executives.</li> <li>• Implemented Executive Development Plans for both permanent and rotating executives to ensure that executives are aware of the mandatory training requirements and to have a plan for meeting the requirements.</li> <li>• Modified the training for supervisors around performance management to more effectively prepare supervisors, including executives, to execute their responsibilities for this important activity.</li> <li>• Initiated an agency-wide mentoring pilot and continued to make executive coaching available to all executives, including rotators.</li> <li>• Implemented performance plans for executive-level IPAs in FY 2011 and had the first performance appraisals and second performance</li> </ul>

	<p>plans in FY 2012.</p> <p><b>NSF’s Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• Initiate a review of the effectiveness of IPA performance plans and appraisals, including those for executive-level IPAs.</li> <li>• Continue to assess each offering of the Executive Leadership Retreat and make modifications, as needed, to improve it.</li> <li>• Initiate a review of the effectiveness of the mandatory training requirements for executives and of the Executive Development Plan as a tool for ensuring the requirements are met.</li> <li>• Continue to expand its collection of internal offerings aimed a supervisors, managers, and executives.</li> </ul>
<p><b>CHALLENGE: Encouraging the Ethical Conduct of Research</b></p> <p><b>NSF Overview:</b> The responsible and ethical conduct of research (RCR) is critical for ensuring excellence, as well as public trust, in science and engineering. Consequently, education in RCR is considered essential in the preparation of future scientists and engineers. In response to the America COMPETES Act of 2009 (ACA), each awardee’s Authorized Organizational Representative is required to certify that the institution has a plan to provide appropriate training and relevant oversight in the responsible and ethical conduct of research to undergraduates, graduate students, and postdoctoral researchers who will be supported by NSF to conduct research. NSF’s implementation strategy includes dissemination through in-reach and outreach activities to NSF staff, as well as U.S. and international scientific research and education communities; policy guidance; incorporation into program funding opportunities; and development of resources (e.g., curriculum materials, online forums, and best practice white papers) to enhance the quality of such training provided by the awardee community.</p>	
<p><i>a. Ensure that awardees implement credible RCR programs</i></p>	<p><b>NSF’s Significant Actions Taken in FY 2012</b></p> <ul style="list-style-type: none"> <li>• Continued development of a website (<a href="http://www.nationalethicscenter.org">www.nationalethicscenter.org</a>) on ethics and research that provides access to RCR materials as part of an award (SES-1045412) to the University of Illinois at Urbana-Champaign (UIUC). The group has also gathered information from previously funded sites, including those of the National Academy of Engineering, the University of Massachusetts-Amherst, and content from the Ethics Education Library at the Illinois Institute of Technology. In addition, project participants have given talks and presentations concerning research ethics.</li> <li>• Included RCR coverage in NSF outreach materials and presented the material in a number of research administration conferences.</li> </ul> <p><b>NSF’s Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• With the UIUC award ending in December 2012, draft a new FY 2013 solicitation to expand on the RCR work completed to date. The goal of the solicitation is to develop an online portal that will collect and curate ethics materials and that will link with existing projects.</li> <li>• Continue to emphasize the importance of RCR in outreach opportunities with NSF staff, as well as U.S. and international scientific research and education communities.</li> </ul>
<p><i>b. Continue efforts to further the tenets of research integrity</i></p>	<p><b>NSF’s Significant Actions Taken in FY 2012</b></p> <ul style="list-style-type: none"> <li>• Maintained an internal compendium of policies and practices for “international collaborative oversight”, which included the oversight guidance for proposals that entail international engagements, e.g., incorporated additional review criteria addressing: true intellectual collaboration; mutual benefits/benefits realized from the expertise/specialized skills of the international counterpart; and research</li> </ul>

	<p>engagement of U.S. students/early-career researchers.</p> <ul style="list-style-type: none"> <li>Organized a Global Summit on Merit Review in May 2012, which also served as an opportunity to launch a new organization to engage NSF counterpart agencies around the world in developing policies that facilitate research collaborations. Of the two topics for the next meeting, one will be research integrity.</li> </ul> <p><b>NSF’s Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>Assist in organizing regional workshops on research integrity in Japan, Mexico, Belgium, Saudi Arabia, and Ethiopia at which consensus policies on research integrity will be developed.</li> <li>Continue to monitor the implementation of RCR requirements under NSF programs to improve clarity of policies and procedures; expand resources available to the field; and strengthen in-reach and outreach efforts.</li> </ul>
<p><b>CHALLENGE: Effectively Managing Large Facilities and Instruments</b></p> <p><b>NSF Overview:</b> The Foundation continues to exercise and strengthen agency-wide management and oversight policies and practices for its large facilities and instruments in planning, construction, and operation. These activities are carried out via the decisional and governing responsibilities of the Office of Director and the National Science Board, respectively, and through the management and oversight responsibilities of the sponsoring Science and Engineering Program Directorates and Offices and the NSF Chief Financial Officer (CFO), Office of Budget, Finance and Award Management (BFA). Additionally, the MREFC Panel, comprised of Senior Management representatives from the Directorates and Offices of NSF, provides governance of the overall MREFC process and reviews specific cases as presented by the originating Directorate or Office, and defines the specific implementation processes utilized by NSF to oversee, assess, prioritize, and fund major research infrastructure projects funded through the MREFC account. Within BFA, the CFO relies on the Large Facilities Office (LFO) to develop policy related to large facilities, to advise NSF management on large facility issues, and to coordinate with and advise Programs on large facility management and oversight. Other BFA units, including the Budget Division and the Acquisition of Cooperative Support Division’s Cooperative Support Branch, are engaged in budget development and in award development and monitoring related to large facilities.</p>	
<p>a. <i>Ensure that the process being used for developing, managing, and accounting for contingency funds is sound</i></p>	<p><b>NSF’s Significant Actions Taken in FY 2012:</b></p> <ul style="list-style-type: none"> <li>Continued to work with OIG to explore the contingency issue raised by OIG.</li> <li>Authored and posted on NSF’s internal website the policy document “Guidelines for Planning, Use, and Oversight of Contingency in the Construction of Large Facility Projects.”</li> <li>Contributed to the planning and execution of external reviews to assure NSF that development, management, and accounting of contingency funds are sound (see item b.)</li> </ul> <p><b>NSF’s Anticipated Next Steps:</b></p> <ul style="list-style-type: none"> <li>Revise as necessary and release publicly the policy document “Guidelines for Planning, Use, and Oversight of Contingency in the Construction of Large Facility Projects” following the resolution of ongoing NSF-OIG discussions on practices for allowability, estimation methods, budget inclusion, and management control of budget contingency.</li> <li>Assist awardees and program staff to assure standards of adequacy are satisfied in the provision of supporting documentation for all award costs and to facilitate examination of whether certain proposal costs are appropriate for classification as contingency type items.</li> </ul>

<p><i>b. Continue oversight and management of large science infrastructure projects to ensure that performance expectations are met by the awardees</i></p>	<p><b>NSF’s Significant Actions Taken in FY 2012:</b></p> <ul style="list-style-type: none"> <li>• Ensured that projects, including ARRA-funded projects, were on time, on budget, and meeting performance expectations including the management of risk and the application and accounting of budget contingency by taking the following actions: (1) participated in construction reviews for the Ocean Observatories Initiative (OOI), Atacama Large Millimeter Array (ALMA), <i>Alvin</i> Replacement Human Occupied Vehicle, and the Advanced Laser Interferometer Gravitational Wave Observatory (Advanced LIGO) project; (2) executed a preliminary design review, cost update review, and a joint interface management review (with the Department of Energy) for the Large Synoptic Survey Telescope (LSST); and (3) continued NSF’s established practices for regular monitoring of all open MREFC construction projects.</li> <li>• Assessed compliance performance of awardees by conducting Business Systems Reviews (BSR) and related post-BSR monitoring activities. Completed BSR of the National Radio Astronomy Observatory, National Optical Astronomy Observatory (NOAO) Phase I, National Solar Observatory (NSO) Phase I, and Advanced Technology Solar Telescope (ATST) Phase I, and have BSRs in progress for the National Nanotechnology Infrastructure Network (NNIN) and OOI.</li> </ul>
	<p><b>NSF’s Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• Planning by LFO and programs for the re-baseline review of ATST, construction reviews of the National Ecological Observatory Network, OOI, LIGO, ALMA, and Alaska Region Research Vessel, and the final design review of the LSST to insure appropriate risk management and use of budget contingency.</li> <li>• Assist awardees and program staff to assure standards of adequacy are satisfied in the provision of supporting documentation for all award costs and to facilitate examination of whether certain proposal costs are appropriate for classification as contingency type items.</li> <li>• Conduct BSRs of NSF support for the Large Hadron Collider detectors Compact Muon Solenoid (CMS) at Princeton University and A Toroidal Large Angle Spectrometer (ATLAS) at Columbia University, Arecibo Observatory, Scientific Ocean Drilling Vessel, and AdvLIGO/LIGO, as well as complete the NOAO/NSO/ATST-Phase II, NNIN, and OOI BSRs.</li> </ul>
<p><b>CHALLENGE: Managing Programs and Resources in Times of Budget Austerity</b></p> <p><b>NSF Overview:</b> Across the board, NSF has made significant progress towards reducing certain administrative costs by identifying and implementing efficiencies, by prioritizing work, by eliminating or scaling back the scope of some activities, and by exploring new ways of getting the job done. Travel costs have been reduced by nine percent below the FY 2010 baseline. Efforts are underway to streamline how NSF procures and utilizes telecommunications services (including mobile devices). NSF has also reduced the cost of light refreshments in support of conferences and panels.</p>	
<p><i>Identify opportunities to streamline processes and cut costs where it can in order to send a clear message to its employees and stakeholders that strong, sound management</i></p>	<p><b>NSF’s Significant Actions Taken in FY 2012</b></p> <ul style="list-style-type: none"> <li>• Travel: Implemented agency-wide travel targets to improve oversight and prioritization of travel funding. Met goal to reduce travel obligations nine percent below FY 2010 baseline in FY 2012, which resulted in reductions of \$2.33 million (or 9.4%) below FY 2010 levels. Developed a new series of online travel reports to facilitate monitoring of travel costs by NSF senior leaders and financial staff.</li> <li>• Travel: Established new procedures agency-wide to expedite the close-out of outstanding travel obligations timely via issuance of an NSF memorandum on “Outstanding Travel Obligations”. A longer term goal of these new practices is to work towards adherence with the Federal Travel Regulation that requires travelers to submit travel vouchers within five business days after completion of travel.</li> </ul>

<p><i>practices are being applied, reasonable ideas to reduce spending are welcome and will be acted upon, and at a time of hardship for so many, the public's continued financial support for science is not taken for granted</i></p>	<ul style="list-style-type: none"> <li>• <b>Light Refreshments:</b> Continued to monitor the cost per person of light refreshments on a bi-annual basis against the limits set by NSF Bulletin No. 11-09 (Light Refreshments served at Panel Meetings, Advisory Committees and Committees of Visitors). The average cost per panelist/committee member in FY 2012 continues to run below the \$25 per person per day cost limit. Awarded Blanket Purchase Agreements to six vendors with the goal to further reduce light refreshment costs and improve service.</li> <li>• <b>Telecommunications:</b> Completed a statement of work to participate in the General Services Administration's (GSA) Federal Sourcing Strategic Initiative (FSSI) Telecommunications Expense Management (TEMS) program, with an award made in September 2012.</li> <li>• <b>Mobile Communications:</b> Developed a proposed policy to determine an individual's eligibility for and assignment of an NSF mobile communications device. This policy will inform the purchase, distribution and use of wireless technologies. (The policy is in negotiation with the union.)</li> <li>• <b>Printing:</b> Initiated a cost-benefit analysis related to central procurement and management of NSF's suite of printing devices. The goal of this effort is to identify ways in which the NSF can lower the cost of printing across the agency. Also retired one high volume black and white productions printer, avoiding costs of approximately \$100,000, by relying on cross-utilization of existing equipment in other NSF units.</li> <li>• <b>2012 SAVE Award:</b> Participated fully in the President's 2012 SAVE Award campaign. Issued NSF-wide email to solicit and encourage the submission of ideas by NSF staff and contractors. Ten ideas were submitted anonymously by NSF staff.</li> <li>• <b>Management Support Services:</b> Issued an Acquisitions News Flash to all acquisition personnel to implement activities to reduce spending on management support services by 15 percent in FY 2012, which included institution of new internal controls. Reduced spending by terminating two key management support services contracts related to acquisition support for the Antarctic Support Contract re-competition and the government-wide Grants Management Line of Business (GMLoB) activity.</li> <li>• <b>Advisory Committee:</b> Discussed the issue of reducing costs through identification and implementation of efficiencies with the Business and Operations Advisory Committee in May 2012 and received valuable advice from members, particularly on change management challenges.</li> </ul>
	<p><b>NSF's Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• Continue to reduce travel costs to meet travel reduction goals.</li> <li>• Solicit feedback from NSF directorates and offices on proposed changes to improve timeliness of traveler submission of vouchers and implement changes to NSF travel reimbursement procedures.</li> <li>• Issue the mobile communications policy.</li> <li>• Perform study of current mobile communications equipment and usage in FY 2013, results of which will lead to streamlining and cost savings.</li> <li>• Based on the results of the printing cost-benefit assessment, develop and implement a plan to streamline the number and type of printers used by NSF staff.</li> <li>• Continue to monitor per person cost of light refreshments purchased for on-site panel and advisory committee meetings.</li> </ul>

**EMERGING CHALLENGE: Transitioning to Cloud Computing and to the Trusted Internet Connection**

**NSF Overview:** In alignment with federal information technology priorities, NSF has progressed with the adoption of cloud computing and the implementation of Trusted Internet Connection (TIC) capabilities. NSF’s focus for both efforts has been to maintain a strong security capability throughout service transitions while ensuring limited impact on agency operations. The agency reports periodically to OMB on implementation of cloud computing and TIC efforts.

*a. Ensure that security and internal control considerations are addressed in the agency’s transition of information, applications, and/or data to the cloud and that cloud computing contracts provide adequate access to information and appropriate application maintenance for the protection of data and intellectual property*

**NSF’s Significant Actions Taken in FY 2012**

- Continued pilot with cloud vendor for email and instant messaging.
- Established standard questionnaire of cloud provider capabilities to ensure that proposed providers offer security, legal, and operational features required by NSF; incorporated it into the Systems Development and Infrastructure Life Cycle processes; and used it with cloud providers (Department of the Interior for WebTA, Microsoft for email, and Amazon for collaboration services) while establishing services.
- Contributed to development of language for inclusion in cloud computing contracts to ensure providers’ compliance with agency audit and investigation requirements and adopted approaches in federal white paper “Effective Cloud Computing Contracts for the Federal Government” for agency cloud contracts.
- Evaluated applicability of Federal Risk and Authorization Management Program (FedRAMP) for assessment and authorization of agency cloud procurements.
- Continued to meet with other government agencies that have implemented or are in the process of implementing cloud services. NSF has met with the General Services Administration, Department of Energy, Lawrence Berkeley National Laboratory, the Department of Commerce’s National Oceanic and Atmospheric Administration, and the Environmental Protection Agency.
- Met with OMB to provide an update on agency status with respect to cloud implementations.

**NSF’s Anticipated Next Steps**

- Leverage FedRAMP policy, requirements, risk management processes, and federal contract vehicles as appropriate for assessment and authorization of cloud solutions.
- Continue transition of public cloud email and instant messaging to production and evaluate cloud service for public websites.
- Pilot new cloud service arrangements for external collaboration (SharePoint) via public cloud infrastructure, then assess feasibility of extended use.
- Pilot backup capability to replace offsite storage of NSF tape backups.

*b. Continue to coordinate its security requirements with the Trusted Internet Connection provider to ensure it utilizes strong*

**NSF’s Significant Actions Taken in FY 2012**

- Continued coordination with NSF’s TIC service provider, CenturyLink, and with Department of Homeland Security experts who run the intrusion detection service monitoring TIC traffic following the agency’s initial implementation of TIC in FY 2011.
- Utilized the TIC-provided web filtering from Fortinet (managed by CenturyLink) to maintain a robust and secure connection to the Internet and added second circuit for TIC to provide network redundancy; CenturyLink has also incorporated multiple connections in

<p><i>information technology safeguards</i></p>	<p>their internal network to handle any potential failure points.</p> <ul style="list-style-type: none"> <li>• Developed processes to directly link NSF’s support team and security team with the appropriate CenturyLink personnel to support incident troubleshooting, resolution, and notifications and that provides 24x7 coverage of security alerts and enables prompt implementation of NSF-requested configuration changes in collaboration with CenturyLink.</li> </ul> <hr/> <p><b>NSF’s Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• Achieve 100% compliance with TIC requirements for NSF Headquarters connections (excluding the Office of Polar Programs, which will require more time to consolidate due to their use of shipboard, satellite, and out of CONUS network environments).</li> <li>• Move to TIC-provided anti-spam and anti-virus filtering for email and decommission agency capabilities in this area.</li> </ul>
<p><b>EMERGING CHALLENGE: Planning for the Next NSF Headquarters</b></p> <p><b>NSF Overview:</b> The lease for NSF’s headquarters space will expire in 2013. In collaboration with the GSA and other stakeholders, NSF continued its efforts to manage the processes associated with obtaining a new long-term lease. The initial market research and feasibility study phase was conducted in 2008/2009. The development of planning budgets, a business case, housing plan, prospectus and acquisition strategy was achieved during 2010/2011. In the second quarter of FY 2012, the prospectus was authorized by the House Committee on Transportation and Infrastructure. Budget constraints and jurisdictional challenges late in FY 2012 hampered the Senate’s ability to reach consensus, as well as GSA’s ability to complete the anticipated award of a new lease by the end of FY 2012. The Future NSF Office has been a collaborative partner with GSA on all relevant activities and has provided pre-decisional input to all GSA actions pertaining to an interim and new lease action.</p>	
<p><i>Plan and execute the most cost effective acquisition strategies for a new headquarters building during a time of budget austerity</i></p>	<p><b>NSF’s Significant Actions Taken in FY 2012</b></p> <ul style="list-style-type: none"> <li>• Worked with GSA to revise the new lease procurement strategy in response to severe budget constraints.</li> <li>• Supported Director’s Office of Legislative and Public Affairs (OLPA) as liaison with GSA’s House of Representatives committee staff to develop resolution language for authorization of NSF’s prospectus in March 2012. The resolution reduced NSF’s total authorized square footage, lowered and capped the total annual rent cost allowed, and reduced the approved utilization rate in a case of new construction or renovation.</li> <li>• Evaluated GSA’s new Request for Lease Proposal (RLP) to ensure that language transferred from the preceding Solicitation for Offers adequately and correctly represented the needs of NSF.</li> <li>• Participated in several scenario and cost analysis exercises to determine if more cost effective opportunities might exist if the procurement strategy was revised.</li> <li>• Created a comparative priority tool of NSF’s requirements and updated market information in order to make recommendations and assess cost impacts for internal approval of NSF’s portion of a lease deal going forward.</li> <li>• Briefed the NSF Executive Advisory Group, AFGE Union Local 3403, NSF Administrative Managers Group, and select internal stakeholder offices as required.</li> <li>• Concurred with GSA’s issuance of a second public advertisement (Expressions of Interest-EOI) for NSF’s new lease. NSF was briefed on responses and discussions on next actions.</li> </ul>

	<ul style="list-style-type: none"><li>• Provided significant support to OLPA as liaison with GSA and other stakeholders on efforts to gain a favorable and consistent resolution in the Senate on NSF's prospectus.</li><li>• Continued internal NSF technology, communications and furniture assessments, and pilot programs.</li></ul>
	<p><b>NSF's Anticipated Next Steps</b></p> <ul style="list-style-type: none"><li>• Participate in the negotiations about final jurisdiction and procurement questions between GSA and the Hill in order to gain prospectus authorization from the Senate Committee on Environment and Public Works.</li><li>• Help GSA make final revisions to another revised lease procurement and issue a third public advertisement/EOI by GSA for NSF's new lease.</li><li>• Participate in issuing the RLP to EOI respondents; evaluate proposals received; assess and quantify the impact of the new financial term options and issues associated with NSF employee disruption, mission impact and operating costs; develop recommendations for future FY budget requests and decision-making.</li><li>• Participate in GSA's evaluation of offers, final location, building selection, and lease award.</li><li>• Prepare and start to execute an internal NSF public relations and communications plan.</li><li>• Use pilot project measurements to inform budget planning, space planning, and associated relocation procurements.</li><li>• Begin associated design, engineering, and construction coordination effort with selected lessor.</li></ul>

## Undisbursed Balances in Expired Grant Accounts

NSF funds research and education in science and engineering through grants and cooperative agreements to 1,895 colleges and universities and other institutions. NSF grants are funded in one of two ways: 1) the grant may be funded fully at the time of award, called a standard grant, or 2) the grant may be funded incrementally (one year at a time), called a continuing grant increment. In both cases, all costs on the grant must be incurred by the college, university, or institution during the term of the grant period. At NSF, grantees typically have one full quarter to report final expenditures after the grant expires. Once final disbursements are submitted, grant closeout procedures begin.

The following information is provided in accordance with Section 536 of the Commerce, Justice, Science, and Related Agencies Appropriations Act, 2012, of the Consolidated and Further Continuing Appropriations Act, 2012 (Pub. Law 112-55). The responses pertain to the agency's two grantmaking appropriation accounts: Research and Related Activities (R&RA) and Education and Human Resources (EHR). The data reported are based on the following definitions:

- An **expired grant** is a grant award that has reached the grant end date and is eligible for closeout. For NSF, this means grants whose period of performance has expired.
- **Undisbursed balances on expired grants** represent the unliquidated obligation amounts that remain available for expenditure on an expired grant award before it is closed out.

Once a grant has expired, NSF takes actions to close out the grant both administratively and financially. The closeout action takes place after the grantee reports its final expenditures using the Federal Financial Report process and after NSF makes the final disbursements to the college or university. When a grant is closed out, the undisbursed balances are returned to NSF and are available for other legitimate financial purposes.

The methodology used to develop undisbursed balances on expired grant awards is consistent with the Government Accountability Office (GAO) conclusions documented in their April 2012 report, GAO-12-360, *Grants Management: Action Needed to Improve the Timeliness of Grant Closeouts by Federal Agencies*. The methodology used this year is different from that used in our FY 2011 Agency Financial Report. The data reported in FY 2012 reflects the amount of undisbursed balances in grant accounts that have reached their end date and are eligible for closeout. The data reported in FY 2011 reflected the amount of funding de-obligated as a result of successfully closing out grants. The data reported in FY 2010 reflected undisbursed balances associated with expired R&RA and EHR appropriations.

The change in NSF's approach to responding to the requirements in Section 536 of P.L. 112-55 reflects NSF's evolving interpretation of the statutory requirement and OMB reporting guidance, and is based on additional clarifying information from GAO.

### **1. Details on future action the department, agency, or instrumentality will take to resolve undisbursed balances in expired grant accounts.**

NSF continually monitors its grant awards throughout their lifecycle following a documented and comprehensive post-award monitoring process. The process requires all grant recipients to report financial expenditures on a quarterly basis using the FFR process. NSF grants are closed based on their period of performance end date. One quarter after the grant period has expired, all unliquidated (or

undisbursed) funds are reviewed. Normally, most expired grants are closed within six months. In FY 2012, 93 percent of our expired grants with undisbursed balances are within six months of their expiration date. Having small undisbursed balances at the end of the grant period is a routine occurrence, as not all grantees fully spend all of the funds obligated in the course of their research.

**2. The method that the department, agency or instrumentality uses to track undisbursed balances in expired grant accounts.**

NSF completes financial closeout of expired grant awards on a quarterly basis using a well established set of automated and manual activities. Eligibility for closeout for all NSF awards begins one full quarter after the award expiration date. At the start of each quarter, the NSF Financial Accounting System (FAS) automatically flags all eligible awards to close when the programmed award closeout process is run. This process is configured so that the default setting within FAS is for all eligible awards to financially close. The FAS close-out process automatically de-obligates any unliquidated (unspent) award balance, produces an award closeout transaction to flag the award as closed, and sends the financial closeout date to the NSF award management system. This initiates final administrative closeout procedures in the award management system.

Standard quarterly award monitoring activities provide a means for NSF award financial managers or grantees to hold expiring awards open for one additional quarter. During the last month of each quarter, NSF award financial managers monitor the financial closeout process using pre-defined reports and queries from the FAS database. Grants in the first quarter of closeout eligibility that have large unliquidated balances are reviewed before the “award close” procedure is run at the end of the month. As part of this review, the NSF award financial manager can identify awards that need to be held open for an additional quarter. Grant awardees monitor the financial closeout process through the quarterly FFR process. All awards eligible for closeout are highlighted on the FFR. Each quarter, awardees have the option to hold an award open for one additional quarter. This “hold open” action is requested on the FFR and prevents the award from being financially closed out during the mass closeout process. All awards held open during one quarter automatically become eligible again for closeout the next quarter.

In rare instances, NSF monitoring processes reveal awards in the second quarter of closeout eligibility that still have large unliquidated balances. NSF award financial managers closely monitor these awards in cooperation with the program division directors, administrative officers, program managers, and grants officials. The vast majority of these awards are closed after the second quarter of closeout eligibility. A written justification is required for all awards being held open beyond this period.

**3. Identification of undisbursed balances in expired grant accounts that may be returned to the Treasury of the United States.**

When a grant is closed out, the unliquidated (or undisbursed) balances are de-obligated. The de-obligated grant balances are treated one of three ways:

- If the source appropriation is still active, the balances are recovered by NSF and remain available for valid new obligations until the source appropriation’s expiration date.
- If the source appropriation has expired but funds have not yet been canceled, the grant balances are recovered by NSF and remain available for upward adjustments on other existing obligations within the source appropriation.
- If the source appropriation has been canceled, the grant balances are returned to the Treasury.

## **Appendix 4: Undisbursed Balances in Expired Grant Accounts**

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In reviewing the FY 2012 undisbursed balances in expired grant accounts, 474 grants totaling \$10,530,178 are in appropriations that will be canceled. These grant balances will be returned to Treasury.

- 4. In the preceding three fiscal years, details on the total number of expired grant accounts with undisbursed balances (on the first day for each fiscal year) for the department, agency, or instrumentality and the total finances that have not been obligated to specific project remaining in the accounts.**

The number of expired grants with undisbursed balances for the preceding three fiscal years is provided in the table below. These numbers and balances reflect a point in time before they are closed out in our normal processes described above. The table shows that for FY 2012, there were 7,986 expired grants with undisbursed balances of \$184,489,992. The upward trend is the temporary result of \$3 billion in ARRA grants reaching the end of their grant period and being closed out.

<b>Status of Undisbursed Balances in Expired Grants</b>			
	FY 2012 (as of 9/30/12)	FY 2011 (as of 9/30/11)	FY 2010 (as of 9/30/10)
Number of expired grants	7,986	7,154	6,126
Undisbursed balances prior to closeout	\$184,489,992	\$126,010,457	\$109,346,872

## NSF's FY 2012 Performance Goals

The following charts show NSF's FY 2012 performance goals and their status as of October 2012. Final performance results will be included in NSF's FY 2012 Annual Performance Report (APR). The FY 2012 APR will be included in NSF's FY 2014 Budget Request to Congress, which will be available February 4, 2013 at [www.nsf.gov/about/performance](http://www.nsf.gov/about/performance). For more information about NSF's performance goals, see the performance discussion on page I-10.

### Status of NSF's FY 2012 GPRA Performance Goal: *Transform the Frontiers*

Strategic Goal	FY 2012– FY 2013 Performance Goal		Results	
Transform the Frontiers	Goal 1	T-1.1 INSPIRE	Strengthen support of unusually novel, potentially transformative, interdisciplinary research (IDR), through new funding mechanisms, systems, and incentives that facilitate and encourage IDR.	One of two targets met
	Goal 2	T-2.1 Priority Goal, Undergraduate Programs	Develop a diverse and highly qualified science and technology workforce.	All targets met
	Goal 3	T-2.2 Career-Life Balance	Promote Career-Life Balance policies and practices that support more fully utilizing the talents of individuals in all sectors of the American population – principally women, underrepresented minorities and persons with disabilities.	All targets met
	Goal 4	T-3.1 International Implications	Increase proportion of new NSF solicitations, announcements, and Dear Colleague Letters that have international implications.	TBD
	Goal 5	T-4.1 Construction Project Monitoring	For all MREFC facilities under construction, keep negative cost and schedule variance at or below 10 percent. Target: 100 percent of construction projects that are over 10 percent complete.	80 percent
	Goal 6	T-4.2 Priority Goal, Access to Digital Products	Increase opportunities for research and education through public access to high-value digital products of NSF-funded research.	All targets met
Note: INSPIRE: Integrated NSF Support Promoting Interdisciplinary Research and Education				

Status of NSF’s FY 2012 GPRA Performance Goal: *Innovate for Society*

Strategic Goal	FY 2012–FY 2013 Performance Goal			Results
Innovate for Society	Goal 7	I-1.1 Priority Goal, Innovation Corps	Increase the number of entrepreneurs emerging from university laboratories.	All targets met
	Goal 8	I-1.2 Industrial and Innovation Partnerships	Identify the number and types of partnerships entered into by Industrial & Innovation Partnerships (IIP) Division grantees.	All targets met
	Goal 9	I-2.1 Public Understanding and Communication	Establish a common set of evidentiary standards for programs and activities across the agency that fund public understanding and communication of science and engineering activities.	All targets met
	Goal 10	I-2.2 K-12 Scale-up	Establish a common set of evidentiary standards for programs across the agency that fund activities with K-12 components.	All targets met
	Goal 11	I-3.1 Innovative Learning Systems	Integrate common language about, or goals for, innovative learning research into the Cyberlearning, Data and Observation for STEM Education focus area of the Expeditions in Education (E2) investment, and into other programs across the agency that fund innovative learning tools, structures, and systems.	All targets met

Status of NSF's FY 2012 GPRA Performance Goal: *Perform as a Model Organization*

Strategic Goal	FY 2012–FY 2013 Performance Goal		Results	
Perform as a Model Organization	Goal 12	M-1.1 Model EEO Agency	<p>Perform activities necessary to attain essential elements of a model EEO agency, as defined by the Equal Employment Opportunity Commission (EEOC).</p> <p>Collaborate with the Chief Human Capital Officer (CHCO) in drafting the Office of Diversity and Inclusion's responsibilities within NSF's first Diversity and Inclusion (D&amp;I) Strategic Plan for submission to the Office of Personnel Management (OPM).</p>	All targets met
	Goal 13	M-1.2 IPA Performance Plans	<p>Include assignees on temporary appointment to NSF under the Intergovernmental Personnel Act (IPAs) under an NSF performance management system. Target: 95 percent of executive-level and 90 percent of non-executive level IPAs.</p>	100 percent of executive-level IPAs and 92 percent of non-executive-level IPAs
	Goal 14	M-1.3 Performance Management System	<p>Use findings from assessments to guide improvement of NSF's employee performance management systems.</p>	All targets met
	Goal 15	M-2.1 Assess Developmental Needs	<p>Enhance NSF capabilities to provide training of staff for their current positions.</p>	All targets met
	Goal 16	M-3.1 Financial System Modernization	<p>Upgrade NSF's financial system.</p>	All targets met
	Goal 17	M-3.2 Time To Decision	<p>Inform applicants whether their proposals have been declined or recommended for funding within six months of deadline, target date, or receipt date, whichever is later. Target: 70 percent.</p>	Target met (78 percent)
	Goal 18	M-3.3 Virtual Panels	<p>Expand the use of virtual merit review panels.</p>	All targets met
<p>Note:                      EEO: Equal Employment Opportunity                      IPA: Intergovernmental Personnel Act</p>				

## Awards to Affiliated Institutions

The following chart lists the institutions affiliated with members of the National Science Board (NSB) in FY 2012.

Affiliated Institution <sup>1</sup>	Awards Obligated in FY 2012 (Dollars in thousands)
<b>CURRENT MEMBERS</b>	
American Association for the Advancement of Science	\$ 8,802
California Institute of Technology	94,067
Clemson University	17,966
Georgia Research Institute	66,095
Princeton University	58,103
Purdue University	71,715
Stanford University	78,653
Texas A&M University	28,251
Tufts University	13,525
University of Chicago	53,845
University of Colorado	91,957
University of Missouri-Columbia	14,881
University of Oklahoma	12,980
William Marshall Rice University	19,997
<b>Subtotal</b>	<b>\$ 630,837</b>
<b>CONSULTANTS (NSB terms ended in 2012)</b>	
Oregon State University	\$ 34,584
University of Kansas	31,221
University of Southern California	48,832
Vanderbilt University	24,152
<b>Subtotal</b>	<b>\$ 138,789</b>
<b>TOTAL</b>	<b>\$ 769,626</b>

<sup>1</sup> This table is provided solely in interest of openness and transparency. NSB establishes the policies of NSF within the framework of applicable national policies set forth by the President and Congress. Federal conflict of interest rules prohibit NSB members from participating in matters where they have a conflict of interest or there is an impartiality concern without prior authorization from the designated agency Ethics Official. Individual NSF grant awards are made pursuant to a peer-review based process and most are not reviewed by the Board. With regard to matters that are brought to the Board, NSB members are not involved in the review or approval of grant awards to their affiliated institutions.

## **Patents and Inventions Resulting From NSF Support**

The following information about inventions is being reported in compliance with Section 3(f) of the National Science Foundation Act of 1950, as amended [42 U.S.C. 1862(f)]. There were 1,758 NSF invention disclosures reported to the Foundation either directly or through NIH's iEdison database during FY 2012. Rights to these inventions were allocated in accordance with Chapter 18 of Title 35 of the United States Code, commonly called the "Bayh-Dole Act."

## Acronyms

ACMS	Award Cash Management Service	E2	Expeditions in Education
Adv-LIGO	Advanced Laser Interferometer Gravitational Wave Observatory	EARS	Enhancing Access to the Radio Spectrum
AFGE	American Federation of Government Employees	EEO	Equal Employment Opportunity
AFR	Annual Financial Report	EEOC	Equal Employment Opportunity Commission
ALMA	Atacama Large Millimeter Array	EHR	Directorate for Education and Human Resources
AMBAP	Award Monitoring and Business Assistance Program	EIS	Enterprise Information System
ANF	Acquisition News Flash	ENG	Directorate for Engineering
AOAM	Agency Operations and Award Management	EOI	Expressions of Interest
APR	Annual Performance Report	EPSCoR	Experimental Program to Stimulate Competitive Research
ARI	Academic Research Infrastructure	FAC-C	Federal Acquisition Certification in Contracting
ARRA	American Recovery and Reinvestment Act of 2009	FAS	Financial Accounting System
ATST	Advanced Technology Solar Telescope	FASAB	Federal Accounting Standards Advisory Board
BIO	Directorate for Biological Sciences	FAQs	Frequently Asked Questions
BioMaPS	Research at the Interface of the Biological, Mathematical, and Physical Sciences	FBWT	Fund Balance with Treasury
BREAD	Basic Research to Enable Agricultural Development	FECA	Federal Employees' Compensation Act
BSR	Business Systems Review	FedRAMP	Federal Risk and Authorization Management Program
CA	Cooperative Agreement	FERS	Federal Employees Retirement System
CAP	Corrective Action Plan	FEVS	Federal Employee Viewpoint Survey
CAREER	Faculty Early Career Development Program	FFATA	Federal Funding Accountability and Transparency Act
CAS	Cost Accounting Standards	FFMIA	Federal Financial Management Improvement Act of 1996
CBET	Division of Chemical, Bioengineering, Environmental, and Transport System	FFR	Federal Financial Report
CCR	Central Contractor Registration	FFRDC	Federally Funded Research and Development Center
CFO	Chief Financial Officer	FMFIA	Federal Financial Management Improvement Act of 1996
CHCO	Chief Human Capital Officer	FTE	Full-Time Equivalent
CMIA	Cash Management Improvement Act	FY	Fiscal Year
CMS	Compact Muon Solenoid	GAAP	Generally Accepted Accounting Principles
COR	Contracting Officer Representative	GAO	Government Accountability Office
COSO	Committee of Sponsoring Organizations of the Treadway Commission	GATB	Government Accountability and Transparency Board
COTS	Commercial Off-the-Shelf	GK- 12	Graduate Teaching Fellowships in K-12 Education
CSEMS	Computer Science, Engineering, and Mathematics Scholarship Program	GPRA	Government Performance and Results Act
CSRS	Civil Service Retirement System	GRC	Global Research Council
CR	Cost Reimbursement	GRF	Graduate Research Fellowship
DCAA	Defense Contract Audit Agency	GSA	Government Services Administration
D&I	Diversity and Inclusion	HRM	Human Resource Management
DNP	Do Not Pay List	ICA	Incurred Cost Audit
DOE	Department of Energy	I-Corps	NSF Innovation Corps
DOL	Department of Labor	IDR	Interdisciplinary Research
DRB	Director's Review Board		
DS	Disclosure Statement		

IG	Inspector General	SBR	Statement of Budgetary Resources
IIP	Industrial and Innovation Partnerships	SEES	Science, Engineering, and Education for Sustainability
INSPIRE	Integrated NSF Support Promoting Interdisciplinary Research and Education	SFFAS	Statement of Federal Financial Accounting Standards
IPERA	Improper Payments Elimination and Recovery Act of 2010	SFS	Federal Cyberservice: Scholarship for Service
IPA	Intergovernmental Personnel Act	SOG	Standard Operating Guidance
IPIA	Improper Payments Information Act of 2002	STC	Science and Technology Center
IR/D	Independent Research/Development	STEM	Science, Technology, Engineering, and Mathematics
IT	Information Technology	TAFS	Treasury Account Fund Symbol
K-12	Kindergarten to Grade 12	TBD	To Be Determined
LHC	Large Hadron Collider	TIC	Trusted Internet Connection
LIGO	Laser Interferometer Gravitational Wave Observatory	USAP	United States Antarctic Program
LSST	Large Synoptic Survey Telescope	USC	United States Code
MREFC	Major Research Equipment and Facilities Construction	VSV	Virtual Site Visit
NCAR	National Center for Atmospheric Research		
NIH	National Institutes of Health		
NIST	National Institute of Standards and Technology		
NNIN	National Nanotechnology Infrastructure Network		
NOAO	National Optical Astronomy Observatory		
NSB	National Science Board		
NSF	National Science Foundation		
NSO	National Solar Observatory		
OFFM	Office of Federal Financial Management		
OFPP	Office of Federal Procurement Policy		
OIG	Office of Inspector General		
OLPA	Office of Legislative and Public Affairs		
OMB	Office of Management and Budget		
OOI	Ocean Observatories Initiative		
OPM	Office of Personnel Management		
OPP	Office of Polar Programs		
PAPPG	Proposal and Award Policies and Procedures Guide		
PL	Public Law		
PNM	Price Negotiation Memorandum		
PP&E	Property, Plant, and Equipment		
R&D	Research and Development		
R&RA	Research and Related Activities		
RATB	Recovery Accountability and Transparency Board		
RCR	Responsible Conduct of Research		
RFP	Requests for Proposal		
RLP	Request for Lease Proposal		
RPPR	Research Performance Progress Report		
RTSC	Raytheon Antarctic Logistics Support Contract/Raytheon Technical Services Contract		