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INSE

Chapter 3

**Appendices**

## Summary of FY 2014 Financial Statement Audit and Management Assurances

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

Audit Opinion	<i>Unmodified</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 Section 803(a) of the Federal Financial Management Improvement Act (FFMIA)					
	Agency		Auditor		
1. System Requirements	<i>No lack of substantial compliance noted</i>				
2. Accounting Standards	<i>No lack of substantial compliance noted</i>				
3. U.S. Standard General Ledger at Transaction level	<i>No lack of substantial compliance noted</i>				

## **National Science Foundation**

### **FY 2014 Improper Payments Elimination and Recovery Act (IPERA) Reporting Details**

#### **I. Risk Assessment**

NSF developed a robust risk assessment for its single program, grants, utilizing OMB criteria as contained in Appendix C, *Management's Responsibility for Internal Control* of OMB Circular No. A-123. The risk assessment employed both a qualitative and quantitative approach in determining NSF's level of susceptibility to improper payments from grant outlays. The risk assessment reviewed NSF's financial processing and internal controls, monitoring and assessment, human capital, operations and management, volume of payments, and materiality. The risk assessment did not indicate significant susceptibility to improper payments for NSF grants. However, the categories of unallowable costs identified and other factors related to the administration of fellowship and cooperative support agreement award instruments indicated areas that will be further reviewed.

NSF developed and received OMB approval for a *sampling estimation plan* for improper payments in accordance with Appendix C, *Management's Responsibility for Internal Control* of OMB Circular No. A-123. The plan was prepared and submitted to OMB prior to completion of risk assessment. NSF's corrective action plan, which includes the development of qualitative and quantitative factors for the risk assessment and the sampling methodology, serves as the response to the NSF Office of Inspector General's FY 2012 *Agency Financial Report* (AFR) audit findings related to past year's improper payments sampling processes. The new sampling plan considered the implementation of the NSF Award Cash Management Service application, which now provides added capacity and precision in tracking and overseeing awardee expenditures.

The sampling plan was developed to minimize the burden on the grantee and took into account the decentralization of grantee payment data. The precision approved by OMB consists of a 90% confidence level, 3% error rate, and a 15.5% confidence interval. This precision allows a statistically valid sampling approach with a reasonable sample size for testing.

#### **II. Statistical Sampling**

As described above, NSF's grants program is not susceptible to significant improper payments. However, the agency is following-up on certain risk assessment results through its monitoring program.

**III. Corrective Actions:** Not applicable.

**IV. Improper Payment Reporting:** Not applicable.

#### **V. Recapture of Improper Payments Reporting:**

During FY 2014, NSF leveraged its Internal Control Program to revise its IPERA risk assessment and improper payment estimation methodologies. This assured that we were responsive to the related OMB criteria and reporting requirements, which focused on detection.

Our risk assessment's quantitative and qualitative factors for NSF's singular grant program did not indicate that recapture audits were warranted at this time.

When NSF has grant findings that potentially require repayment by an institution of agency funds, NSF receives the audit findings and performs an audit resolution process. This process is designed to resolve the findings and specify the outcome of the initial issues, which may include repayment to the agency. NSF's audit resolution policy is consistent with OMB Circulars A-50, *Audit Follow-up* and A-133, *Audits of States, Local Governments, and Non-Profit Organizations*.

With respect to contracts, the activity for the period that the Internal Controls Program tested made up an insignificant percentage of the recorded payment transactions. This immateriality, coupled with NSF's Internal Control Program procure-to-pay review and cost incurred audits on high risk contracts do not make it cost beneficial to establish a recapture audits program.

**VI. Accountability:** Not applicable.

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

- a. **Describe whether the agency has the internal controls, human capital, and information systems and other infrastructure it needs to reduce improper payments to the levels the agency has targeted.**

Not applicable.

- 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:** Not applicable.

**IX. Additional Comments:** Not applicable.

## **X. Agency Reduction of Improper Payments with the Do Not Pay Initiative**

NSF has been actively participating in OMB's Do Not Pay (DNP) initiative to reduce improper payments through the implementation of pre-award and post payment activities. For pre-award activities, the agency has incorporated the DNP solution into its pre-award review process for all grants and cooperative agreements. NSF was the first agency to institute a batch process for pre-award reviews. The DNP Solution complements NSF's existing policies and procedures for award management, and the agency has integrated the new functionality into its award management process. NSF has also automated the reviews and centralized the pre-award verification. This has created efficiency gains by reducing the workload for manual verification.

**Appendix 2: Improper Payments Elimination and Recovery Act Reporting**

NSF has incorporated multiple Improper Payment Elimination and Recovery Improvement Act (IPERIA) listed Do Not Pay databases into its business operations. For post-payment activities, NSF uses the Department of Treasury’s “Do Not Pay System” to perform a matching process against the Social Security Administration’s Death Master File (DMF) and the General Services Administration’s (GSA) Excluded Parties List System (EPLS) and the System for Award Management (SAM). NSF determined that the remaining databases do not apply to its business operations. Since inception of the DNP databases, NSF has had no positive matches for DMF, EPLS and SAM. In FY 2014, NSF reviewed over 49,000 payments for over \$6 billion with no matches for the DMF and has reconciled 582 matches with the EPLS and SAM with all related payments found to be proper. The table that follows is a summary of monthly reports requested by the DNP program.

**Implementation of the Do Not Pay Initiative to Prevent Improper Payments  
FY 2014 (through September 30th)**

	<b>Number of Payments Reviewed for Improper Payments</b>	<b>Dollars of Payments Reviewed for Improper Payments</b>	<b>Number of Payments Stopped</b>	<b>Dollars of Payments Stopped</b>	<b>Number of Improper Payments Reviewed and Not Stopped</b>	<b>Dollars of Improper Payments Reviewed and not Stopped</b>
Reviews with the DMF	53,331	\$6,903,438,320	0	0	0	0
Reviews with the EPLS and SAM	53,331	\$6,903,438,320	0	0	0	0

DMF: Social Security Death Master File  
 EPLS: GSA Excluded Parties List System  
 SAM: GSA System for Award Management



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

October 23, 2014

TO: Dr. Dan E. Arvizu  
Chair, National Science Board

Dr. France Córdoba  
Director, National Science Foundation

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

SUBJECT: Management Challenges for NSF in FY 2015

In accordance with 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 six 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
- Managing the U.S. Antarctic Program
- Moving NSF Headquarters to a New Building
- Managing Programs and Resources in Times of Budget Austerity
- Encouraging Ethical Conduct of Research

For the past four years, we have focused significant attention on NSF's accountability over its high-dollar, high-risk cooperative agreements for construction of large facility projects. In that time, four major projects totaling more than \$1.4 billion were funded. Our work raised serious questions about whether NSF had sufficient information to ensure that the budgets represented the basis for a fair and reasonable price. In light of that work, we have repeatedly recommended that NSF obtain proposal and accounting system audits for high-risk cooperative agreements to ensure that costs estimates are fair and reasonable and that proposer's accounting systems are adequate to bill the government properly.

Since our emphasis has been on cooperative agreements and since contract administration was not cited as a significant deficiency in NSF's FY 2013 financial statement audit, we did not include contract administration as a top management challenge this year. In addition, NSF reported that it has taken several steps to strengthen contract administration including ensuring Cost Accounting Standards Disclosure Statements are determined adequate for covered contracts and providing additional guidance in its acquisition manual. We will continue to monitor NSF's progress toward implementing improvements in contract administration. Also, in FY 2015, the OIG will conduct two contract audits related to polar services as well as an audit of the final payment voucher for Raytheon's Antarctic support contract.

Finally, since 90 percent of ARRA awards are now closed, we have removed stewardship of ARRA funds as a top management challenge. However, our FY 2015 workplan includes audits of 16 institutions that received ARRA funds. Among our things, these audits will determine whether institutions are properly accounting for ARRA funds as required and whether ARRA quarterly reports are accurate.

If you have any questions, or need additional information, please call me at 703-292-7100.

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

**Overview:** As of August 2013, NSF had 23 cooperative agreements worth over \$50 million each and totaling over \$4.2 billion. Over the last four years, audits of the proposed construction budgets for three of these non-competitive proposals valued at \$1.1 billion found that they contained approximately \$305 million (almost 28 percent), in unallowable or unsupported costs.

It is essential that NSF exercise strong cost surveillance controls throughout the lifecycle of its high-risk, high-dollar large facility projects. At the pre-award stage, proposed costs by awardees should be supported by current, accurate, and complete documentation and awardees' accounting systems must be capable of properly managing federal funds. After an award has been made, NSF and the OIG should have access to information needed for adequate oversight of these projects.

After four years of audit effort, NSF's proposed actions in this area remain short of the standard necessary to adequately safeguard federal funds and leave millions of dollars at risk. Therefore, in May 2014 the OIG escalated a series of recommendations made to address these concerns to Deputy Director, who is NSF's Audit Follow-up Official. Escalation of recommendations is the final step available to the OIG in an attempt to urge NSF to strengthen accountability and to exercise proper stewardship of federal funds.

**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 at the pre- and post-award stages and throughout the lifecycle of the projects.

The Large Synoptic Survey Telescope (LSST) project was the first construction project NSF considered since our 2012 alert memo on the agency's management of its high-risk, high-dollar cooperative agreements. Among other things, that memo recommended that NSF obtain proposal and accounting systems audits to ensure that cost estimates for such projects were fair and reasonable and that proposers' accounting systems were adequate to bill the government properly.

We found that NSF's internal review of the cost of the LSST project could not independently verify costs for any of the 136 proposed expenditures sampled, including approximately \$145 million in direct materials, nearly \$20 million for contingencies and more than \$6 million in direct labor costs.

In September 2014, we issued an alert memo expressing our strong concern that NSF did not have sufficient information to establish a reasonable basis for the cost of the LSST project. As a result, NSF has limited insight into the makeup of the project's cost and little if any, assurance that they are reasonable.

In addition, NSF is conducting the LSST project under a cooperative agreement with the Association of Universities for Research in Astronomy (AURA). For four years, audits have repeatedly documented significant estimating deficiencies with AURA and concluded that AURA does not have an effective process for preparing adequate proposals. In light of the known and continuing deficiencies with AURA's estimating practices and cost proposals and the



lingering uncertainties about the reasonableness, accuracy, and currency of many of the costs proposed for the LSST project, NSF should take immediate and strong action to ensure that costs proposed for and incurred under the project comply with federal and NSF requirements.

In addition to the problems with the LSST proposal, an effort to audit the cost proposal for construction of the Daniel K. Inouye Solar Telescope (DKIST formerly ATST) resulted in a disclaimer of opinion due to significant deficiencies in the proposal, including unsupported estimates, outdated vendor quotes, and the inclusion of amounts for an unallowable contingency reserve. The auditors stated, “In summary, AURA did not support the material cost in their proposal using adequate cost or pricing data, they did not use actual costs in the rebaseline of the proposal when actual costs do exist, and they included costs that were explicitly unallowable per the OMB circular regulations.”

For four years, similar deficiencies have been documented in audits of AURA (the entity submitting the proposal to build the DKIST). This report confirms that AURA has not corrected these deficiencies or improved its proposal estimating practices. Because the proposed costs could not be affirmed as an acceptable basis for a fair and reasonable price, NSF can have no assurance that the proposal is an acceptable basis for funding. Further, the inadequacy of this cost estimate directly impacts the recipient’s ability to properly monitor and manage federal funds. The repeated estimating deficiencies demonstrate lack of improvement on the part of both AURA and NSF to exercise proper stewardship over the millions of dollars awarded for this project and heighten our concerns about unsupported costs being proposed and included in high-dollar, high-risk awards.

We have been urging NSF for the past four years to strengthen accountability of its high-dollar, high-risk cooperative agreements for its large facility construction projects. NSF applies its highest level of attention and scrutiny to determine the scientific merit of the projects it decides to fund. It is imperative that NSF apply the same rigorous attention and scrutiny to its financial management of these projects, prior to requesting NSB approval for award. The stakes are too high for the Foundation to continue its current practice of requesting NSB approval and making awards before it ensures that project costs are reasonable, are supported by adequate documentation, and will use taxpayer dollars efficiently.

**OIG’s Assessment of the Agency’s Progress:** NSF stated that it has published guidance on cost analysis of construction cost estimates and has drafted guidance on the use and management of contingency in large facility cooperative agreements. NSF also reported that it continues to review the risk management process for large facilities and that in FY 2014 it conducted four business system reviews of large facility awardees.

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

**Overview:** NSF’s mission of “promoting the progress of science” is accomplished largely through the making of grants in support of promising scientific research. In FY 2013, NSF competitively reviewed approximately 49,000 proposals for research, education and training projects, and funded close to 11,000 new awards. As of September 30, 2014, NSF had a portfolio of over 41,000 active awards totaling approximately \$36.6 billion. Since most of these awards

are grants, it is vital that NSF's grant management processes ensure that grantees spend their funds appropriately.

**Challenge for the Agency:** Ensuring that grant funds are spent as intended has always been challenging because grant recipients are not required to present supporting documentation, such as invoices and receipts, in order to receive payment from the agency. In addition, while recent efforts to reduce the administrative impact on grantees are worthwhile, care must be taken to ensure that accountability for public funds is not compromised in the process. Therefore, the challenge for NSF is implementing controls over the spending of grant funds that ensure transparency and accountability, while not creating undue administrative impacts on awardees and federal program officers.

One step federal agencies have taken to reduce such impacts on researchers is to streamline the written guidance for administering grants. While a reduction in extraneous guidance is welcome, we are concerned that some useful guidance has also been eliminated and will increase the risk that inconsistent interpretations and direction will be given to awardees. With scores of program officers overseeing thousands of awards and fielding questions from numerous awardees on a daily basis, NSF will be challenged to provide consistent messages across the spectrum of awardees and ensure its replies do not contradict each other or its written policies. OIG has observed several recent situations in which awardees individually have requested NSF's interpretation and direction on a particular issue, but the direction provided conflicted with NSF's published policy and/or prior informal guidance received from NSF personnel.

Recent changes to government-wide grants policy also presents challenges for NSF. On December 26, 2013, OMB issued its final rule, 2 CFR Part 200, "Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards" (Uniform Grant Guidance or UGG). The UGG streamlined eight OMB administrative, cost, and audit circulars into one circular that covers all types of non-Federal entities that receive Federal awards. However, as part of this initiative OMB raised the single audit threshold from \$500,000 to \$750,000. Using data for single audits of entity fiscal year 2012 (the most recent year with complete data), NSF will lose single audit visibility for approximately \$11.8 million in NSF funds provided directly to awardees, and will need to take additional steps to oversee the awardees who expend these funds.

In addition, OMB changed requirements related to documentation of labor effort, making it more challenging to assess the allowability of salaries and related costs on an ongoing basis. Under the UGG, colleges and universities are permitted to charge awards for salary costs based on budget estimates, rather than on the basis of actual work performed, provided only that "significant changes" are entered "in a timely manner" and that the final amount charged to the Federal award is accurate, allowable, and properly allocated. NSF faces the challenge of implementing OMB guidance over awardee spending for research salaries—generally the largest item of expense in research awards—that only requires awardees to ensure salary costs are reasonable at the end of an award.

Finally, OMB significantly shortened the audit resolution timeframe. Prior to the UGG, Federal agencies had 6 months to issue management decision letters on findings affecting the agency

from the time they received an audit report. The new OMB requirement allows 6 months from the date that *the report is submitted to the Federal Audit Clearinghouse*. For NSF, this change would effectively shorten the audit resolution timeframe by 30 days, unless the agency can establish a new accelerated process for identifying and tracking reports that require resolution.

**OIG's assessment of the Agency's Progress:** NSF recently issued a draft of the December 2014 "Proposal and Award Policies and Procedures Guide" (PAPPG), which, in conjunction with NSF's "Grant General Conditions" (GC-1), will serve as the agency's implementation of the UGG. Also, OIG and NSF have entered into discussions about possibly transferring responsibility for identifying single audit findings that require NSF resolution to NSF in FY 2015. Finally, NSF continues to use its Award Monitoring and Business Assistance Program (AMBAP) to provide advanced internal control monitoring of awardee institutions. During FY 2014, NSF planned and completed 30 AMBAP reviews.

### **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 twelve minutes have been recorded.

NSF, through the United States Antarctic Program (USAP), manages U.S. scientific research in Antarctica. The program's goals are: to understand the Antarctica and its associated ecosystems; to understand the region's effects on, and responses to global processes such as climate; and to use Antarctica's unique features for scientific research that cannot be done as well elsewhere. The USAP supports research in virtually every area of science funded not only through NSF, but also through other federal agencies such as the U.S. Geological Survey, the National Oceanic and Atmospheric Administration, and the National Aeronautics and Space Administration. The Antarctic Support Contract, which was awarded to Lockheed Martin in December 2011 is NSF's largest contract, valued at nearly \$2 billion over 13 years.

**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. The July 2012 report by the Blue Ribbon Panel, commissioned by NSF and the Office of Science and Technology Policy, found that U.S. activities in Antarctica were well-managed, but suffered from an aging infrastructure, lack of a capital budget, and the effects of operating in an extremely unforgiving environment. To address these pressing challenges, the Panel made recommendations pertaining to ten topic areas and provided 84 implementing actions to support these overarching recommendations.

In March 2013, NSF responded to the recommendations with a summary report and a working matrix describing the status of the 84 implementing actions. In June 2013, we issued a memorandum to NSF making several suggestions to improve the usefulness of its working matrix, such as including timelines for action and identifying a responsible person for each action. NSF has been tracking progress in its working matrix and has improved that document.

In May 2014 we began an audit to assess the effectiveness of NSF's oversight and the contractor's performance to ensure the overall health and safety of USAP participants. The audit will include an assessment of health and safety programs and related policy, procedures and training, the adequacy of incident reporting, and NSF's progress toward implementing Blue Ribbon Panel recommendations related to health and safety. It is noteworthy, however, that more than three years after the Panel's report, NSF has not provided a public, point-by-point response to the Panel's recommendations.

Another challenge for NSF is to control the cost of the USAP and to ensure adequate oversight of payments to the USAP contractor. Our 2013 audit of the medical screening process for travelers to Antarctica found that NSF's medical review panel has made recommendations that could reduce the cost of this process, but NSF has not implemented many of these recommendations. For example, for the last five years the panel recommended that NSF base required medical tests on factors such as how long an individual will be in Antarctica, and what their duty station and job responsibilities will be. Revising the number of medical tests performed to reflect these criteria could lower costs of the screening process, which currently totals approximately \$860 per person.

Finally, cost containment issues are also a challenge for NSF. The Antarctic Support Contract, which was awarded to Lockheed Martin in December 2011 is the agency's largest contract, valued at approximately \$1.925 billion over 13 years, and is a cost reimbursement contract. Such 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 addition, the contract includes a provision for the contractor to receive an award fee based on an assessment of its performance. An NSF official in the Division of Polar Programs makes the final decision about whether the contractor receives an award fee and then also determines the amount of the award fee based on a panel recommendation. Absent input from an external, independent entity, it may be a challenge for NSF to objectively evaluate the contractor's performance.

**OIG's Assessment of the Agency's Progress:** NSF's has improved its internal tracking matrix for the 84 implementing actions, by adding target dates and identifying a responsible person for each action, among other things.

In response to our audit on reducing costs of the medical screening process, NSF concurred with the OIG's recommendations and has formalized its process for addressing and tracking medical panel recommendations.

### **CHALLENGE: Moving NSF Headquarters to a New Building**

**Overview:** In June 2013, the U.S. General Services Administration (GSA) announced that it signed a 15 year lease agreement on behalf of NSF for a new headquarters building to be constructed in Alexandria, VA. The new building will be approximately the same size as NSF's current location. NSF is scheduled to occupy the new building by December 30, 2016, and begin paying rent on it on January 1, 2017. Any delays in the occupancy date caused by NSF could have a significant cost to NSF.

**Challenge for the Agency:** The OIG issued an Alert Memo in September 2014, which expressed strong concern about missed schedule milestone dates that have occurred already and which could continue as a result of an ongoing impasse between NSF and its union. NSF received the Union's written opposition to certain issues in September 2013, but these issues have not been resolved despite multiple mediation sessions and other attempts to address concerns.

The Union filed a Request for Assistance with the Federal Labor Relations Authority's Federal Service Impasses Panel (FSIP) in June 2014. Depending on the FSIP's decision, (which is binding) NSF could incur additional schedule delays. If delays like this continue and cannot be mitigated, they could result in significant charges to the agency because NSF may have to pay certain costs (which have yet to be negotiated) for every day it causes the occupancy date to be delayed. Due to the significant risks of continued impasse, it is imperative that NSF senior management focus the highest level of attention on this issue.

Continued missed milestone dates are likely to impact other schedule milestones, such as the interior construction and occupancy date. While NSF has told us that it may be able to make up lost time it is difficult to know how much continued schedule slippage can be mitigated.

Another challenge is planning the logistics of the actual move. NSF stated that computers, chairs, and tables will be moved to the new building and that its primary cost will be for workstation furniture that cannot be moved. NSF will need to procure new workstation furniture in a timely manner and tightly control moving expenses for the items it moves from Arlington. NSF is considering different options and there may be a period of time when it is operating in both buildings, which could be a challenge for holding merit review panels, which are essential to NSF's mission of awarding grants for scientific research.

**OIG's Assessment of the Agency's Progress:** NSF has been planning for a possible move since 2008, when it hired a project director. NSF created the Future NSF Headquarters Office (FNSF) to coordinate and manage the move. The FNSF's project director assisted with NSF's last move in 1993 from Washington DC to Arlington. NSF reported that it has held more than 80 staff design review meetings to ensure the timely response to design submittals, in accordance with the lease requirement. In addition, NSF informed us that it plans to negotiate a construction delivery schedule that minimizes the financial risk to NSF.

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

**Overview:** Given the limitations placed on future Federal budgets by the Budget Control Act of 2011, NSF's efforts to maintain and possibly increase its funding will be subject to great scrutiny. Lean budget times like these require management to pay even closer attention to how money is spent in order to ensure that the agency's expenditures are cost-effective, investments in programs provide a strong return on the taxpayer's dollars, and that those investments align directly with national priorities.

There are numerous discretionary purchases that occur on a weekly or monthly basis within an organization as large as NSF that offer real opportunities for savings. For example, OIG



completed an audit of purchase cards and found that NSF's controls over the purchase card program needed to be strengthened to prevent and detect inappropriate purchases. Prompted by suspicious purchases identified by its auditors, OIG conducted an investigation which led to the cardholder pleading guilty to stealing more than \$94,000 from NSF. In response to the audit's recommendations, NSF issued a revised purchase card policy, implemented improved training for cardholders, and improved its review and monitoring of purchase card transactions.

OIG's audit of the United States Antarctic Program's Medical Screening Process determined that NSF should consider opportunities that exist for cost savings on medical screenings. OIG found that nearly 20 percent of applicants withdraw each year before completing the medical screening process, representing a significant amount of time and effort for staff as well as incurring medical examination costs. This OIG audit also found that NSF needs to improve oversight of Antarctic support contract medical processing payments, due to a risk that applicants may submit claims for expenses that are not eligible for reimbursement, and that the contractor may submit inaccurate invoices for medical costs to NSF. The OIG will continue to perform reviews or audits to identify possible cost savings of NSF operations and programs..

**Challenge for the Agency:** There are many opportunities to conserve money within a \$7 billion organization like NSF without compromising the accomplishment of the agency's core mission. The agency is therefore challenged to identify opportunities to streamline administrative processes and cut costs where it can to send a clear message to its employees and stakeholders that strong, sound management controls are being applied; reasonable ideas to reduce spending are welcome and will be implemented; and that NSF is a responsible steward of the public's funds.

**OIG's Assessment of the Agency's Progress:** NSF continues to make progress in identifying ways to reduce administrative costs during FYs 2013 and 2014. To instill an agency-wide culture of cost-saving, NSF encouraged staff to submit ideas for cost savings. NSF management concurred with OIG's audit recommendations to improve controls over purchase cards and consider opportunities for cost saving for United States Antarctic Program's Medical Screening Process. The agency has also introduced or continues to implement specific cost cutting initiatives for travel, conferences, printing, mobile devices, and telecommunications. NSF has been reducing travel costs by further increasing the use of virtual merit review panels and encouraging the use of non-refundable tickets for staff travel.

### **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. NSF responded to the Act by mandating mentoring plans for all postdoctoral positions, and directing that grantees provide appropriate training and oversight in the responsible and ethical conduct of research to undergraduate students, graduate students, and postdoctoral researchers participating in the proposed research project.

However, information collected during investigations, from site visits, and from reviews of institutional RCR plans suggests that some institutions are not taking these requirements

seriously. Furthermore, the findings of research funded by NSF's Ethics Education in Science and Engineering Program suggests that many of the ethics training programs currently available provide limited positive effect on the perspectives of students and postdocs regarding the ethical conduct of research. This potentially compromises the public's confidence in the research enterprise and affects the safety of NSF funds. NSF is challenged to provide more oversight on institutional implementation of these requirements and to provide meaningful guidance regarding RCR training.

**Challenge for the agency:** NSF's primary challenge is to ensure that awardees implement effective RCR programs. RCR is just one component necessary to create a 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 cheating is endemic at various levels of education, with 30% of researchers admitting 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 doubled, as have the number of findings of research misconduct NSF has made based on OIG investigation reports. In addition, OIG has seen a substantial increase of allegations related to: peer-review based confidentiality violations, false representations in CVs, false representations of publications in annual/final reports, failure to list all affiliations and current support (especially at overseas institutions), and fraudulent or otherwise improper use of grant funds. The number and variety of ethical issues identified in our investigative activities strongly suggest that the general ethical fabric of the research enterprise may be at risk – not only at the student level but at the faculty level as well.

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; these individuals could have a broad and positive impact on the US science, engineering and education workforce. NSF has been responsive to recommended actions contained in our individual research misconduct investigation reports. However, such agency actions only address incidents after the fact. Extrapolation of the number of allegations OIG has received across the 45,000 proposals NSF receives annually, suggests that 1300 proposals could contain plagiarism and 450-900 proposals could contain falsified 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 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 creating a requirement that grantees submit mentoring plans for all NSF-supported postdoctoral positions and provide appropriate training and oversight in the responsible and ethical conduct of research to undergraduate students, graduate students, and postdoctoral researchers participating in the proposed research project.

The NSF guidance is very limited compared with those instituted at NIH in 2010. OIG has observed a wide disparity among grantee RCR programs, ranging from high quality mentoring programs to programs 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. We continue to receive substantive data fabrication/falsification allegations involving students, post-docs, and faculty. We currently have 24 active investigations regarding such allegations. Therefore, we believe that more needs to be done and NSF should expand its influence with institutions regarding this important issue. OIG has developed a plan to systematically review RCR plans that were initiated as a result of the America COMPETES Act. We have requested RCR plan details from 50 random grantee institutions and hope to complete that review in the near future.

Other actions the agency has taken include the development of a new ethics research program called Cultivating Cultures for Ethical STEM (CCE STEM). The CCE STEM research effort is focused on identifying the factors that create climates that foster and encourage research integrity rather than focusing on curriculum development on integrity issues. The Agency is also working with the National Academies to develop and make available ethics materials that will be applicable across all scientific fields that NSF supports.



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OFFICE OF THE  
DIRECTOR

NOV -5 2014

MEMORANDUM

TO: Ms. Allison Lerner  
Inspector General, National Science Foundation

FROM: Dr. France Córdova   
Director, National Science Foundation

SUBJECT: Acknowledgement of the Inspector General's FY2015 Management Challenges Memorandum and Transmittal of NSF's Progress Report on the FY2014 Management Challenges

This serves to acknowledge receipt of your memorandum dated October 23, 2014, summarizing what the Office of Inspector General (OIG) considers to be the most serious management and performance challenges facing the National Science Foundation (NSF). These challenges include the following ongoing responsibilities: establishing accountability over large cooperative agreements; improving grant administration; managing the U.S. Antarctic program; moving NSF headquarters to a new building; managing programs and resources in times of budget austerity; and encouraging the ethical conduct of research.

Your memorandum has already been shared with the Foundation's executive and senior officers, and, as in past years, senior leadership will ensure continuing and collaborative, cross-agency communication and attention to addressing these issues. NSF's progress report that highlights the significant actions taken in FY2014 on the management challenges outlined in your November 5, 2013 memorandum is attached. The report also provides anticipated next steps, which will serve as a prospective guide for many of the actions planned for FY2015.

As always, 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. We look forward to continuing to work with your office to achieve these goals.

Attachment

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

## National Science Foundation (NSF) Fiscal Year (FY) 2014 Progress Report on OIG Management Challenges

### CHALLENGE: Establishing Accountability over Large Cooperative Agreements

**NSF Overview:** This Office of Inspector General (OIG) challenge relates to NSF’s use of cooperative agreements to construct and fund the operations and maintenance of large research facilities. The Foundation currently utilizes end-to-end cost surveillance policies and procedures for its cooperative agreements to ensure adequate stewardship over federal funds. These activities are carried out via the decisional and governing responsibilities of the Office of the Director and the National Science Board, respectively, and through the management and oversight responsibilities of the sponsoring Science and Engineering Directorates and Offices and the NSF Chief Financial Officer (CFO), Office of Budget, Finance and Award Management (BFA). Additionally, the Major Research Equipment and Facility Construction (MREFC) Panel, comprised of NSF Senior Management representatives from across the agency, provides governance of the overall MREFC process, reviews specific cases as presented by the originating program office, and defines the specific implementation processes utilized by NSF to oversee, assess, prioritize, and fund major research infrastructure projects that utilize 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 program offices on large facility management and oversight. Other BFA units, including the Budget Division (BD) and the Acquisition and Cooperative Support Division’s Cooperative Support Branch (DACS/CSB), are engaged in budget and award development and monitoring related to large facilities. NSF is currently implementing enhancements to its pre-award and post-award budget and cost review processes for large research facility cooperative agreements to include additional analysis of awardee proposal budget information and the utilization of incurred cost audits, to the extent appropriate, to strengthen the review of billed costs. These strengthened procedures include a mandatory requirement for independent assessment of potential awardee’s proposed cost estimates that will be performed separately from internal reviews conducted by the cognizant NSF project office or the current independent panel review process coordinated through the cognizant project office.

a. *Ensure proper accountability for large cooperative agreements by strengthening pre- and post-award monitoring and cost surveillance policies and procedures.*

**NSF’s Significant Actions Taken in FY 2014:**

- Completed the audit resolution escalation process addressing the agency’s proposed corrective actions in response to two outstanding OIG reports: NSF OIG Alert Memo (Report No. 12-6-001) on NSF’s Management of Cooperative Agreements, and Audit of NSF’s Management of Contingency in the EarthScope Awards (Report No. 12-2-010).
- Published Standard Operating Guidance for accomplishing cost analysis of construction cost estimates and use of audit services in awarding and administering large facility related cooperative agreements as set forth in Corrective Action Plans (CAPs) for the aforementioned audit reports.
- Drafted guidance on the use and management of contingency in large facility related cooperative agreement to be incorporated into the next revision of the Large Facilities Manual in FY 2015.

**NSF’s Anticipated Next Steps:**

- Complete the clearance process (including public comment) and publish the revised Large Facilities Manual that includes guidance on the use and management of contingency in large facility related cooperative agreements.
- Draft standards for the preparation of construction cost estimates by recipients for publication in a subsequent revision of the Large Facilities Manual.

**Appendix 3B: NSF FY 2014 Progress Report on OIG Management Challenges**

	<ul style="list-style-type: none"> <li>• Implement the Standard Operating Guidance for accomplishing cost analysis of construction cost estimates and use of audit services.</li> <li>• Draft a standardized analysis plan for the cost analysis of facility operation cost estimates.</li> </ul>
<p><i>b. Improve oversight and management for contingency costs in large facilities construction awards.</i></p>	<p><b>NSF’s Significant Actions Taken in FY 2014:</b></p> <ul style="list-style-type: none"> <li>• Continued to ensure that awardees of large construction projects were managing their risks and properly accounting for contingency by reviewing the project’s risk management process, monitoring the allocation of contingency to mitigate risk, and addressing resolution tasks in the project’s monthly report.</li> <li>• Continued to assess compliance performance of large facility awardees by conducting four Business System Reviews (BSRs) and related post-BSR monitoring activities.</li> <li>• Drafted guidance on the use and management of contingency in large facility related cooperative agreement to be incorporated into the next revision of the Large Facilities Manual in FY 2015.</li> </ul> <hr/> <p><b>NSF’s Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• Continue review by LFO and program offices of contingency allocation and accounting through monthly reports and yearly progress reviews.</li> <li>• Provide training by LFO to facility program officers on risk management and the appropriate allocation and accounting of contingency for MREFC projects.</li> <li>• Continue BSR activities.</li> <li>• Complete the clearance process (including public comment) and publish the revised Large Facilities Manual that includes guidance on the use and management of contingency in large facility related cooperative agreements.</li> </ul>
<p><i>c. Establish a clear threshold above which it would require price proposal and accounting systems audits prior to awarding new high-dollar, high-risk cooperative agreements.</i></p>	<p><b>NSF’s Significant Actions Taken in FY 2014:</b></p> <ul style="list-style-type: none"> <li>• Published standard operating guidance setting forth a risk-based approach to determining the need for audit services prior to awarding large facility related cooperative agreements.</li> </ul> <hr/> <p><b>NSF’s Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• Implement the aforementioned standard operating guidance.</li> </ul>

**CHALLENGE: Improving Grant Administration**

**NSF Overview:** NSF manages awards throughout the project life cycle from pre-award through closeout. In mid-FY 2014, NSF was managing 41,425 active awards, representing \$27.6 billion in obligated funds to 2,988 unique awardees. NSF 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. During FY 2014, NSF made significant technology upgrades to strengthen its business infrastructure. Implementation of the Award Cash Management Service (ACMS), NSF’s new

**Appendix 3B: NSF FY 2014 Progress Report on OIG Management Challenges**

<p>awardee payment process, has enabled the Agency to obtain award-specific expenditure data based on near real-time cash transactions. Progress was made on implementation of iTRAK, a modernization of NSF’s 30-year old financial system. Scheduled for implementation in early FY 2015, iTRAK will provide increased transparency and capacity for processing and reporting data needed for decision-making and oversight. NSF continues to capitalize on technology to address increasing accountability demands within the constraints of resource limitations. In FY 2014, NSF added a new IT tool that provides stakeholders – both internal and external to NSF – the ability to identify over-age reports of scientific progress. This is important because being out of compliance with deadlines stated in award terms and conditions would otherwise effectively block further NSF funding actions to any associated Principal Investigator (PI) and co-PIs. In FY 2014, NSF also continued to play an instrumental role on the Office of Management and Budget (OMB) Council of Financial Assistance Reform (COFAR) in supporting OMB’s development and publication of the <i>Uniform Guidance: Cost Principles, Audit, and Administrative Requirements for Federal Awards</i> that will be fully implemented via NSF policy guidance and associated terms and conditions to meet the December 26, 2014 deadline. This past year, NSF and its Office of the Inspector General have worked collaboratively to bring common understanding to, and clarity around roles and responsibilities, in the use of data analytics for audits and audit resolution. Finally, NSF continues to expand and upgrade mechanisms for communicating policies, procedures, and business practices within this dynamic environment to its staff and external stakeholder communities.</p>	
<p>a. <i>Improve internal controls over processing grant transactions and follow-up on awardee corrective action plans.</i></p>	<p><b>NSF’s Significant Actions Taken in FY 2014</b></p> <ul style="list-style-type: none"> <li>Initiated streamlined processes for “Do Not Pay” results and improve implementation of internal controls in place to identify grantees that require corrective action plan follow-up.</li> </ul>
	<p><b>NSF’s Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>Ensure that awards meet Do Not Pay requirements and continue to utilize the internal controls in place to assist in the monitoring of corrective action plan follow-up.</li> </ul>
<p>b. <i>Due to Uniform Guidance changes increasing Single Audit threshold from \$500,000 to \$750,000, NSF will have to do more to ensure appropriate oversight of awards from \$500,000 to \$750,000 as they will no longer be subject to Single Audits.</i></p>	<p><b>NSF’s Significant Actions Taken in FY 2014</b></p> <ul style="list-style-type: none"> <li>Evaluated impact of <i>Uniform Guidance</i> to ensure full agency support for its objectives of effectively focusing federal resources on performance and outcomes while simultaneously ensuring financial integrity of taxpayer dollars (reduction in the risk of waste, fraud, and abuse) and reducing administrative burden for non-federal entities receiving federal awards.</li> <li>Initiated upgrading of all relevant policies, procedures, and award terms and conditions, as well as development of Frequently Asked Questions so as to position NSF for effective and timely implementation of the <i>Uniform Guidance</i> by the December 26, 2014 deadline.</li> </ul>
	<p><b>NSF’s Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>Ensure that the NSF audit resolution process fully aligns with the <i>Uniform Guidance</i>, including its strengthened provisions for risk-based oversight.</li> <li>Continue to strengthen the NSF annual risk assessment of awards and institutions to ensure appropriate levels of oversight across its entire investment portfolio.</li> </ul>
<p>c. <i>Due to Uniform Guidance changes in labor effort reporting, it</i></p>	<p><b>NSF’s Significant Actions Taken in FY 2014</b></p> <ul style="list-style-type: none"> <li>Evaluated impact of the <i>Uniform Guidance</i> to ensure full agency support for its objectives of effectively focusing federal resources on performance and outcomes while simultaneously ensuring financial integrity of taxpayer dollars (reduction in the risk of waste,</li> </ul>

<p><i>may be more difficult to determine the allowability of salaries and related costs. Collectively, these changes may increase workload for BFA Staff.</i></p>	<p>fraud, and abuse) and reducing administrative burden for non-federal entities receiving federal awards.</p> <ul style="list-style-type: none"> <li>Initiated upgrading of all relevant policies, procedures, and award terms and conditions, as well as development of Frequently Asked Questions so as to position NSF for effective and timely implementation of the <i>Uniform Guidance</i> by the December 26, 2014 deadline.</li> </ul>
	<p><b>NSF’s Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>Continue a strong program of oversight ensuring that NSF awardees have implemented relevant policies, procedures, and systems to adequately document salaries, wages, and related costs.</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 continues to take a comprehensive approach to continue improvement in this area. NSF took steps to strengthen contract administration through policy and procedural initiatives. Specifically, NSF (1) added guidance to the NSF Acquisition Manual concerning the performance and procurement of Pre- and Post- Award Audits; (2) outlined a plan for resolving the audit findings to date on the former U.S. Antarctic Program (USAP) contract; (3) continued to implement the controls established under the NSF Acquisition Manual concerning incurred cost audits (ICAs), disclosure statements and accounting systems; and (4) published an article in the Weekly Wire on the importance of using the correct Object Class Codes when completing and submitting funding commitments.</p>	
<p><i>a. Strengthen controls over cost reimbursement contracts in order to reduce the risk of fraud, waste and abuse.</i></p>	<p><b>NSF’s Significant Actions Taken in FY 2014</b></p> <ul style="list-style-type: none"> <li>Ensured that all accounting systems and Cost Accounting Standards (CAS) Disclosure Statements are determined adequate for all covered contracts.</li> <li>Actively pursued audit completion for required CAS Disclosure Statements.</li> <li>Promptly reviewed and resolved any issues raised in such audits.</li> <li>Reviewed the new USAP contractor’s transfer of the NSF contract to a different segment within the company and determined that it did not affect the NSF cost.</li> </ul>
	<p><b>NSF’s Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>Continue to implement the controls established in the NSF Acquisition Manual concerning incurred cost audits.</li> <li>Continue to ensure, through the implemented controls established in the NSF Acquisition Manual, that all accounting systems and Cost Accounting Standards (CAS) Disclosure Statements are determined adequate for all covered contracts.</li> <li>Continue to ensure that supporting documentation is contained in the contract file for all new contracts, as appropriate.</li> </ul>
<p><i>b. Implement planned corrective actions to ensure that adequate controls over cost reimbursement contracts are</i></p>	<p><b>NSF’s Significant Actions Taken in FY 2014</b></p> <ul style="list-style-type: none"> <li>Added additional guidance to the NSF Acquisition Manual (see Section 2515.404) that Pre- and Post-Award Audits performed on NSF contracts shall be consistent with the terms of the Memorandum of Understanding with NSF-OIG</li> <li>Established a process to follow in the NSF Acquisition Manual (see Section 2542.101-70) whereby Contracting Officers may request funding of audits through the program office or other identified sources if the OIG does not select an audit candidate through the</li> </ul>

<p><i>maintained.</i></p>	<p>Annual Audit Planning Process, or, if there is an urgent situation requiring immediate audit.</p> <ul style="list-style-type: none"> <li>• Included a link in the NSF Acquisition Manual (see Section 2510) to the updated NSF Standard Procurement Lead-times and Milestones which now includes information and guidance on the front end of the acquisition process covering Market Research and Requirements Development.</li> <li>• Prepared “white papers” that outline NSF’s plan for resolving the audit findings to date on the Raytheon Antarctic Logistics Support Contract (RTSC Polar).</li> </ul> <p><b>NSF’s Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• Continue review of the recently received audits of the final years of the RTSC Polar contract from the Defense Contract Audit Agency (DCAA).</li> <li>• Continue resolution of the RTSC questioned costs throughout CY 2015.</li> </ul>
<p><b>CHALLENGE: Management of the U.S. Antarctic Program</b></p> <p><b>NSF Overview:</b> Through the Division of Polar Programs NSF funds and manages the U.S. Antarctic Program (USAP) which supports United States’ research and national policy goals in the Antarctic. Given the remote location, an extreme environment and the short period of time during which the continent is accessible, significant challenges exist for ensuring the availability of necessary logistics, operations and science support. There are also unique and internationally-linked environmental, health and safety issues present at the remote location. In exercising its management responsibilities, NSF relies on internal staff with the requisite expertise as well as a network of contracted support and federal agency partners. Periodically, the Program is reviewed by external panels of experts.</p>	
<p><i>Work toward implementation of the 2012 U.S. Antarctic Program Blue Ribbon Panel Report recommendations in a well-organized and structured manner, and improve the structure of the internal management matrix for tracking agency action on individual recommendations.</i></p>	<p><b>NSF’s Significant Actions Taken in FY 2014</b></p> <ul style="list-style-type: none"> <li>• Implemented OIG-recommended changes to the internal tracking matrix for Blue Ribbon Panel (BRP) recommendations and provided status updates regarding progress and feasibility of implementation.</li> <li>• Received authorization from NSF Director to proceed to conceptual design review (CDR) phase for development of Antarctic Infrastructure Modernization for Science (AIMS), a potential Major Research Equipment and Facilities Construction (MREFC) project to address major infrastructure upgrades recommended by the BRP report for McMurdo and Palmer Stations.</li> </ul> <p><b>NSF’s Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• Continue progress on BRP recommendations, including investment in prioritized lifecycle acquisitions.</li> <li>• Transition AIMS project from CDR phase to PDR (preliminary design review) phase.</li> </ul>
<p><b>CHALLENGE: Moving NSF Headquarters to a New Building</b></p> <p><b>NSF Overview:</b> In April 2013, capping off five years of planning, economic challenges and negotiations, the House Committee on Transportation and Infrastructure authorized, through a GSA prospectus resolution, a new long term replacement lease for NSF. GSA’s competitive action for the lease was limited to Northern Virginia which resulted from three Expressions of Interest (EOI) advertisements. Using a low cost-technically acceptable procurement approach, the award was made to the Hoffman Company of Alexandria, Virginia in June 2013 and included a pre-designed, to-be-constructed office building to be completed and occupied by NSF in the first quarter of FY 2017 (12/30/2016). The new lease offered financial terms that demonstrated significant savings (approximately \$65million) to the government and to NSF over the life of the lease, and was less costly than maintaining NSF in its current location. NSF’s existing leases were extended for 48</p>	



<p>months (at a premium) beyond their original expiration to accommodate the time required to design, build, and relocate the agency. Immediately after the new lease signing, NSF embarked on a wide-ranging set of efforts with GSA, the new building owner (Hoffman) and internal NSF stakeholders to ensure NSF could meet the aggressive relocation schedule. The new HQ building lease transferred ownership to USAA Realco, Inc. in April 2014 who, along with their development manager, Lowe Enterprises, is working collaboratively with GSA and NSF to formulate schedule strategies that address NSF's relocation objectives.</p>	
<p>a. <i>To complete the scheduled move before December 30, 2017.</i></p>	<p><b>NSF's Significant Actions Taken in FY 2014</b></p> <ul style="list-style-type: none"> <li>• Managed design and engineering tasks in concert with GSA and the building owner to pursue NSF's move completion by the lease date of December 30, 2016, despite unforeseen hurdles.</li> <li>• Held over 80 NSF staff design review meetings to ensure the timely response to design submittals per the lease requirement.</li> <li>• Conducted two NSF relocation workshops and three NSF/GSA/Owner strategy sessions to begin establishing the baseline criteria and priorities for the move and align them with the construction completion schedules in the lease.</li> </ul>
	<p><b>NSF's Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• Work with GSA and new headquarters ownership project construction team to re-assess the building delivery (to the government) approach in the lease.</li> <li>• Negotiate a construction delivery schedule that minimizes the financial risk to NSF.</li> <li>• Complete procurement preparation activities (resourcing and scope definitions) by all stakeholders by December 2015.</li> <li>• Coordinate and oversee the completion of the re-design for NSF's new space by May 2015.</li> </ul>
<p>b. <i>Plan and manage the details of NSF's space requirements and relocation.</i></p>	<p><b>NSF's Significant Actions Taken in FY 2014</b></p> <ul style="list-style-type: none"> <li>• Completed an exhaustive update of NSF's two-year old Program of Requirements for the design of NSF's new space, inclusive of comprehensive information technology and electronic security specifications, furniture and equipment inventory and reuse analysis, and a paper records/files analysis.</li> <li>• Conducted typical floor studies and worked with the Architect of Record (AOR) on test fits of the new building to determine the efficiency of the new space.</li> <li>• Assisted in the analysis, design and engineering development of upgrades to the owner's base building to meet Department of Homeland Security, Interagency Security Committee requirements for NSF.</li> <li>• Developed design recommendations, comparative analyses and justification to incorporate flexible, modular wall technology into the new NSF headquarters space.</li> <li>• Modified the Program of Requirements to be more consistent with the interests expressed by both NSF management and AFGE Local 3403.</li> </ul>
	<p><b>NSF's Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• Continue to work with each directorate, NSF leadership and the American Federation of Government Employees (AFGE) Local 3403 to implement NSF's updated design. Oversee design completion and building planning and relocation efforts consistent with those program requirements.</li> </ul>



<p><i>c. Control moving expenses tightly to plan for a successful move if there are no additional funds to cover moving costs.</i></p>	<p><b>NSF’s Significant Actions Taken in FY 2014</b></p> <ul style="list-style-type: none"> <li>• Ensured that effective working relationships and communications with NSF were established early in the process with all of the new headquarters stakeholders (GSA, City of Alexandria, Owner’s Architect/Engineering and Construction teams, others). Doing so has positioned NSF to protect and coordinate our time-sensitive mission interests impacted by the relocation, and to better manage early change requirements, mitigating potentially costly financial, schedule, design impacts later down the line.</li> <li>• Worked closely with GSA contracting officials and GSA management, the owner and internal NSF on analyzing and interpreting the terms, conditions and financial structure of the lease deal to maximize how they could be applied to the NSF-responsible portions of the design and construction.</li> <li>• Assisted GSA in transferring information and processes between the original leaseholder and a new owner and development team. Ensured that the NSF-related funding and framework in the lease was clearly discussed by the appropriate project stakeholders.</li> <li>• Educated internal NSF stakeholders on the project’s organizational structure, base building and interior design and construction processes and schedule to obtain a greater understanding of where to implement internal tracking and controls for the project.</li> <li>• Closely managed the design phase submittals and out-of-sequence design activities with the AOR during periods of paused activity. Worked with GSA to orchestrate reengagement work to minimize the cost of potential delays and additional moving costs.</li> </ul>
	<p><b>NSF’s Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• Provide expert advice for negotiating with the AFGE Local 3403 that aligns with the estimated budget for the move.</li> <li>• To the extent possible, identify potential move-related cost-impacts during early relocation planning in FY15.</li> <li>• Mitigate costly change orders and additional fees of NSF move-related procurements by managing them in close alignment of GSA and the lessors’ space delivery and move-in schedules.</li> </ul>
<p><i>d. Plan for dual operations in Arlington and Alexandria.</i></p>	<p><b>NSF’s Significant Actions Taken in FY 2014</b></p> <ul style="list-style-type: none"> <li>• Conducted two relocation planning meetings with NSF’s operational units including information technology, facilities, meeting services and human resources management. The initial assumptions upon which dual operations will be determined have been identified and will be analyzed for recommendations to NSF senior Management by Q2 FY 2015.</li> </ul>
	<p><b>NSF’s Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• Conduct monthly move planning meetings beginning Q1 2015.</li> <li>• Manage FY 2015 relocation-related procurement activities; ensure that the FY 2016 procurement and budget schedules support and align with the projected relocation timeline.</li> <li>• Complete the collection of FY 2017 panel meeting projections in order to discuss and propose final relocation/move operations approach by Q3, 2015.</li> </ul>

<p><i>e. Collaborate and communicate internally within NSF and with external stakeholders, including GSA, the Alexandria building owner, Congress and OMB.</i></p>	<p><b>NSF’s Significant Actions Taken in FY 2014</b></p> <ul style="list-style-type: none"> <li>• Educated and engaged internal NSF stakeholders about the new headquarters as information presented itself. Also implemented a governance, evaluation and recommendation structure for efficient decision-making involving senior executive staff, liaisons for each directorate and a cross functional/organizational group.</li> <li>• Participated in monthly Alexandria City Economic Development Partnership Board of Directors meetings to represent and address NSF’s interests in the city’s planning process.</li> <li>• Attended City of Alexandria permit and review board meetings with the AOR and project developer.</li> <li>• Resumed regular meetings with the AFGE Local 3403 on project information, pre-decisional items as well as impact and implementation issues. Worked with the NSF LRO and the AFGE throughout FY 2014 to collaborate with and respond to the AFGE’s issues about the planning for the new building.</li> <li>• Participated in extensive mediation and formal negotiation activities and responded to inquiries from the Federal Labor Relations Board, Federal Services Impasse Panel (FSIP).</li> </ul>
	<p><b>NSF’s Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• Implement an enhanced communications and outreach program to NSF staff and other stakeholders in Q1 2015.</li> <li>• Continue site tours, City participation, discussions with Washington Area Transportation Authority, US Patent and Trademark Office and new building area stakeholders.</li> </ul>

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

**NSF Overview:** 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 32 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><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 practices are being applied, reasonable ideas to reduce spending are welcome and will be acted upon, and at a time of hardship for so</i></p>	<p><b>NSF’s Significant Actions Taken in FY 2014</b></p> <ul style="list-style-type: none"> <li>• Merit Review Business Practice             <ul style="list-style-type: none"> <li>○ By investing in expanded training for panel moderators and providing other technical and human resources to support the use of virtual meeting technology on a larger scale, in 2014 NSF was able to further expand its use of virtual panels as a review mechanism for small groups of proposals. From the results to-date, it is projected that at least 15 percent of proposals competitively reviewed in FY 2014 will be reviewed by virtual panels instead of face-to-face panels or purely ad hoc review. Benefits realized have included a reduction in the average time commitment necessary from individual panel reviewers and a reduction in NSF’s expenditure on panelists’ travel.</li> <li>○ The Graduate Research Fellowship Program switched from using in-person panels to virtual panels for its annual review of fellowship applications. This replaced a process that in FY 2013 brought approximately 800 reviewers to DC for in-person panels, held simultaneously in a hotel conference venue, with virtual meetings that collectively involved 1200 reviewers. Although this required increased expenditures on DIS and DAS staff support, these were offset by savings in travel costs. The virtual meeting approach also made it possible for more reviewers to participate and enabled the program to raise the</li> </ul> </li> </ul>
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<p><i>many, the public's continued financial support for science is not taken for granted.</i></p>	<p>minimum number of reviews per application from the two to three.</p> <ul style="list-style-type: none"> <li>• <b>Travel:</b> Instituted FY 2014 travel targets (December 2013) to promote and monitor achievement of the \$3.9 million reduction goal established in response to OMB Memorandum M-12-12; which requires that agencies must maintain the reduced level of travel spending each year through FY 2016. To date in FY 2014, NSF has realized savings totaling \$8.4 million—reductions of 32 percent below FY 2010 travel obligations. Savings have been achieved across most travel categories, but the key driver is reduced travel costs associated with merit review panels.             <ul style="list-style-type: none"> <li>○ NSF held 3.13 percent of merit review panels wholly virtually through third quarter of FY 2014. As a result, comparing through 3Q of each fiscal year, spending on panel travel was reduced by \$5.6 million—a reduction of 47 percent below FY 2010.</li> <li>○ The use of non-refundable airline tickets continued to be encouraged for meetings required by the Federal Advisory Committee Act (panels, advisory committee meetings, committees of visitors). Airline tickets savings totaled \$627, 700 through the third quarter of FY 2014.</li> </ul> </li> <li>• <b>Conferences:</b> Continued the policy (set forth in NSF Bulletin No. 12-19) to ensure that all conference costs are appropriate, necessary, and managed in a way that minimizes expenses. This policy established requirements related to conference planning, approval, and reporting. To ensure full transparency to the public of the agency's major conferences, published the NSF OMB M-12-12 Annual Report – FY 2013 on the NSF public website. This report provided details on conferences hosted by NSF that cost over \$100,000.             <ul style="list-style-type: none"> <li>○ Continued enforcing the conference reporting and notification requirements set forth in Section 3003 of the 2013 Continuing Appropriations Act (P.L. 113-6). Compiled information on NSF-sponsored conferences costing over \$100,000 in order to prepare the required annual report and ensure consistency with conferences tracked under the NSF Bulletin No. 12-19 approval process. Provided reports to the OIG on conferences costing over \$20,000 to meet notification requirements of Section 3003.</li> <li>○ Increased utilization of the Blanket Purchase Agreements associated with the light refreshment program for on-site panel and advisory committee meetings, leading to lower costs for the program as compared to last fiscal year.</li> </ul> </li> <li>• <b>Printing:</b> Currently developing a comprehensive Managed Print Services Strategy based on current market research and on the cost-benefit analysis previously prepared. This strategy consists of several key components that directly address management challenges as it relates to printing, and includes reducing the total number of printing devices, manufacturers, and models.</li> <li>• <b>Telecommunications:</b> In the first quarter of FY 2014, NSF initiated a pilot for the use of Telecommunications Expense Management Services (TEMS) in four directorates and offices. Since the pilot began, NSF has expanded the use of TEMS services to additional directorates, with 100 percent NSF participation expected by October 2014. NSF is in the process of determining TEMS program savings to date.</li> <li>• <b>Mobile Devices   Telecommunications:</b> Instituted a policy (NSF Bulletin No. 13-05) that requires documentation of a business need and eligibility before a mobile communications device can be purchased for each individual. The policy, in conjunction with the TEMS initiative, will help drive down the cost of mobile devices.</li> <li>• <b>IPA Costs:</b> Completed the examination of IPA costs as outlined in the Corrective Action Plan associated with the OIG report on the</li> </ul>
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	<p>“Audit of Costs Associated with NSF’s Use of Intergovernmental Personnel Act (IPA) Assignees.” The examination included multiple analyses of IPA data, a discussion with institutional representatives of the Federal Demonstration Partnership and internal focus groups with IPAs and managers of IPAs. The formal study and NSF response were sent to OIG in June 2014.</p> <p><b>NSF’s Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• Merit Review Business Practice: Support for virtual panels will be maintained with a target for FY 2015 of 33 percent of panels being held virtually.</li> <li>• Travel: Continue to aggressively manage travel costs to meet the agency’s long-term travel reduction goals and streamline travel order and voucher procedures. 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>• Conferences:             <ul style="list-style-type: none"> <li>○ Continue to monitor per person costs of light refreshments purchased for on-site panel and advisory committee meetings.</li> <li>○ Continue to follow the conference planning, approval, and reporting requirements established to minimize the cost of conferences hosted and attended by NSF.</li> </ul> </li> <li>• Printing: Garner buy-in for the Managed Print Services Strategy from NSF senior management with a plan to begin execution such that a complete implementation will coincide with the agency’s relocation to Alexandria VA.</li> <li>• Telecommunications: Fully optimize mobile device plans across the Foundation through use of the TEMS contract. Confirm yearly savings with all NSF organizations using TEMS for a full fiscal year.</li> <li>• IPA Costs: Manage costs and benefits for its use of IPAs at the level of the IPA program as a whole. The agency will incorporate data on IPAs and their costs in the HRStat dashboard and quarterly review process and create a summary annual report. NSF will continue to look at minimizing NSF’s IPA costs in the areas of expanded telework (including possible remote duty assignments) and cost sharing of IPA salaries with universities, balancing the potential for costs savings with the operational risks of incorporating strategies to lower costs. NSF will review the overall IPA program and associated costs and benefits every four years.</li> <li>• The SAVE Award is transitioning to be an agency-led initiative, per OMB Memo M-14-12. OMB is in the process of developing resources to assist agencies in establishing an agency-based mechanism similar to the SAVE Award program. NSF may consider utilizing the IDEA Share “challenge” approach, to create a similar campaign for fielding potential administrative saving ideas.</li> </ul>
<p><b>CHALLENGE: Ensuring Proper Stewardship of ARRA Funds</b></p> <p><b>NSF Overview:</b> In accordance with OMB M 34-11, all NSF ARRA awards without waivers expired on or before September 30, 2013. Close out continued throughout FY 2014, and 89.8 percent are now financially closed. Similarly, the Obama Administration’s ARRA implementation efforts are coming to a close government-wide. Effective October 1, 2013, OMB decreased its role in connection with ARRA reporting, and the Recovery Transparency and Accountability Board became the lead executive agent. Soon thereafter, recipient reporting for ARRA awards was repealed by Congress as of February 1, 2014, resulting in only one quarter of reporting during FY 2014. NSF’s exemplary ARRA comprehensive, multi-stage review process ultimately resulted in in a recipient reporting compliance rate of 99 percent every quarter beginning in December 2009, with the exception of the October 2013 reporting period during the government shutdown. In FY 2015, NSF will continue to monitor 309 remaining open ARRA awards – all recipients of OMB-granted waivers – through completion.</p>	

<p><i>a. Monitoring the awards, especially those made to high-risk institutions, to ensure that ARRA funds are not subject to fraud, waste and abuse, particularly in light of OMB's directive to accelerate funding.</i></p>	<p><b>NSF's Significant Actions Taken in FY 2014</b></p> <ul style="list-style-type: none"> <li>• Tracked expenditures and for all active ARRA awards, facilitating closeout as appropriate.</li> <li>• Continued advanced monitoring activities for all NSF awardees with additional risk points assigned to ARRA awards with waivers to expend funds beyond September 30, 2013.</li> <li>• Desk review procedures continue to ensure that awardees with active ARRA awards have processes to effectively segregate financial information in their accounting systems.</li> <li>• Continued to work with awardee to ensure transparency of MREFC expenditures for the Daniel K. Inouye Solar Telescope (DKIST), formerly Advanced Technology Solar Telescope (ATST) through monthly reporting to OMB.</li> <li>• Continued to require ARRA and non-ARRA funded awardees of MREFC projects to report on earned value management and milestone status.</li> </ul> <p><b>NSF's Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• In FY 2015, NSF will continue to oversee ARRA-related processes for institutions with the 309 active ARRA awards as part of NSF's advanced monitoring activities for all awardees.</li> <li>• NSF has tentatively planned a Business System Review of the DKIST for late FY 2016, which will include ARRA-funded activities.</li> </ul>
<p><i>b. Determining if awardees have spent their ARRA funds in accordance with applicable federal and NSF requirements, including the special terms and conditions of their ARRA Awards.</i></p>	<p><b>NSF's Significant Actions Taken in FY 2014</b></p> <ul style="list-style-type: none"> <li>• Continued to employ the ARRA review module as part of the advanced monitoring to ensure that all ARRA awardees have processes to effectively segregate financial information in their accounting systems, as well as report that information as required.</li> <li>• Took no significant actions in FY 2014 relating to determining if awardees spent funds in accordance with the special terms and conditions of ARRA. The only special conditions relating to the spending of ARRA funds concerned "burn rate" and "acceleration," and these activities occurred during prior fiscal years.</li> </ul> <p><b>NSF's Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• Continue to oversee ARRA-related processes for institutions with the 309 active ARRA awards as part of NSF's advanced monitoring activities for all awardees.</li> </ul>
<p><i>c. Ensuring awardee's timely, complete and accurate reporting on Federal Reporting.gov</i></p>	<p><b>NSF's Significant Actions Taken in FY 2014</b></p> <ul style="list-style-type: none"> <li>• Delivered a reporting compliance rate of 97.4 percent during FY 2014 Q1 even though NSF was unable to conduct its normal recipient reporting outreach activities due to the government shutdown during the entirety of the report submission period.</li> <li>• ARRA recipient reporting requirements repealed by law as of February 1, 2014. NSF's exemplary ARRA recipient reporting data quality review process ultimately resulted in an average reporting compliance rate of 99.65 percent for 18 quarters of recipient reporting.</li> </ul>

	<p><b>NSF’s Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• N/A</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 is critical to ensure excellence, as well as public trust, in science and engineering. Moreover, the globalization of science and engineering research and education poses unique challenges and risks due to variations in international codes of conduct. Recognizing the importance of ethical conduct of research and in accordance with the America COMPETES Act of 2009 (ACA), NSF requires that each institution submitting a proposal certify that it has a plan to provide appropriate training and relevant oversight in the ethical conduct of research to all undergraduates, graduate students, and postdoctoral researchers who will conduct NSF-sponsored research and to have the plan available for review upon request. Research shows that most training now offered is ineffective and sometimes has negative effects. Furthermore, a traditional focus on responsible conduct of research is overly narrow and overlooks many equally important ethical dimensions of STEM research and practice. NSF implementation of ACA promotes awareness of ethical issues to NSF staff, as well as U.S. and international scientific research and education communities. In addition, research ethics are addressed in policy guidance, incorporated into program funding opportunities, and emphasized through the development of resources to enhance the ability of research institutions to cultivate cultures of academic and research integrity.</p>	
<p><i>Provide more meaningful guidance regarding institutional administration of Responsible Conduct of Research (RCR) training.</i></p>	<p><b>NSF’s Significant Actions Taken in FY 2014</b></p> <ul style="list-style-type: none"> <li>• Launched a new ethics program to replace the Ethics Education in Science and Engineering (ESEE) Program. Whereas ESEE focused changing individual behavior (graduate students’) based on instruction, the new program, “Cultivating Cultures for Ethical STEM” (CCE STEM)”, focuses on cultivating climates that expect and encourage academic and research integrity at all levels. Rather than focusing on curriculum development, the focus of the new program is to identify factors that are effective in creating climates that foster integrity.</li> <li>• Made a 5-year award to the National Academies to expand the National Academy of Engineering’s (NAE) Online Ethics Center for Engineering and Science (OEC) to include material relevant to all fields that NSF supports. This award included a large supplement to University of Delaware’s Center for Science, Ethics, and Public Policy (CSEPP), to develop a cohort of international collaborators to collect new ideas and best practices from international sources about ethics and social responsibility in research and education, and expertise in developing policies and codes of ethics for STEM faculty, students, and practitioners.</li> </ul> <p><b>NSF’s Anticipated Next Steps</b></p> <ul style="list-style-type: none"> <li>• Continue to evaluate the effectiveness of various approaches to training and cultivating ethical conduct of research and the importance of ethical conduct of research and share state-of-the-art understanding of what approaches are most effective in outreach opportunities with NSF staff, as well as U.S. and international scientific research and education communities.</li> </ul>
<p><b>CHALLENGE: Implementing a new Financial Management System</b></p> <p><b>NSF Overview:</b> On October 14, 2014 NSF retired the financial functions of its legacy system FAS and successfully implemented its financial system modernization initiative, iTRAK, on schedule and within budget. iTRAK is off to a strong start with system users successfully processing payments, entering requisitions, distributing funds, receiving and paying invoices and reconciling and approving purchase card transactions. iTRAK is hosted by a Shared Service Provider (SSP) in the “cloud” and managed by the Financial Systems Branch (FSB), which is part of the Division of Financial Management (DFM). Now that iTRAK and all associated IT systems and</p>	



services are available, attention may be turned toward the on-going efforts related to training, providing all users with access to iTRAK and fine tuning business processes to ensure NSF's continued leadership in stewardship and federal financial management.

*Execute risk management strategy to address risks such as availability of key staff to provide input to the iTRAK project and agency reluctance to change its established business processes.*

**NSF's Significant Actions Taken in FY 2014**

- Engaged division directors across the Foundation to identify key staff to work with the BFA iTRAK team.
- Ensured project schedule accounted for peak workload and seasonal cycles across the Foundation when key staff would be unavailable.
- Prioritized iTRAK activities ahead of certain operational tasks.
- Initiated personnel actions with HRM to detail key staff to the iTRAK project and to bring back former NSF staff as rehired annuitants to provide additional resources.
- Implemented an outreach campaign across the Foundation informing executives, managers, and staff of the business process changes necessary to implement iTRAK.
- Conducted focus group sessions and meetings with executives, managers, and staff to receive input on business process changes.
- Engaged the iTRAK governance groups such as the iTRAK Executive Council and iTRAK Change Control Board to receive input on changes to business processes and assistance in the outreach and communication of changed business processes.
- Conducted a series of Town Halls and published information in the *Weekly Wire* and *iTRAK* Newsletter on critical dates and changes in procedures for FY 2014 year end close and implementation of iTRAK in FY 2015.
- Converted the financial data from FAS to iTRAK successfully.
- Finalized the Account Code Structure, which will be used in iTRAK, Concur and LearnNSF.
- Implemented a rigorous training plan that included over 100 in-person training classes and six (6) online training courses.
- Stood up the iTRAK help desk successfully.
- Performed system testing.

**NSF's Anticipated Next Steps**

- Lead a working group as part of NSF's Enterprise Data solution that will inform NSF staff of available tools used to access financial data. These tools include the Reporting Database Server (Report SQL), NSF Enterprise Data Warehouse and Business Intelligence, Enterprise Information System (EIS) and iTRAK.
- Assess impacts of the new financial system on users, and continue the recently established additional training classes, coaching sessions and communications to help reinforce the new business processes and to minimize the impact to users.
- Continue efforts in setting up processes with the Shared Service Provider (SSP), Accenture, in order to manage the support of iTRAK.
- Develop a continuous learning plan that includes training on functionality where updates to business processes are refined, new employee training, and advanced training on certain financial functions and reporting
- Support the efforts in setting up the new governance process for the Account Code Structure which is led by NSF's Budget Division.
- Continue to analyze NSF's legacy systems for changes that are necessary in order to optimize iTRAK's full functionalities.
- Continue education and outreach to senior leadership, management and NSF staff on elements of change management.

## Freeze the Footprint

NSF is scheduled to move to new headquarters in Alexandria, Virginia in December 2016. The General Services Administration (GSA) negotiated new leases for NSF’s current primary office spaces, Stafford Place I and II, to allow time for the new NSF headquarters to be built and made ready for occupancy. Because NSF will be moving to a new facility, the agency cannot make any major investments in the current headquarters space to renovate and create new and more flexible work spaces to accommodate demands for staff growth and meeting spaces as there would not be enough time to realize a return on the investment. NSF will continue to work with its facilities team to ensure maximum utilization of the current space available. Additionally, the new lease rates in Alexandria will be lower than the current lease rates in Stafford Place I and II.

NSF has dedicated a significant effort to planning for its new headquarters, which will take the agency 15 years into the future. This forward looking effort is incorporating the most creative thinking in terms of flexible workspaces, functionally-based office and workspace standards, virtual technologies, cloud computing, and alternate work styles such as additional teleworking that will allow the agency to increase in staff numbers but not in real estate footprint.

Freeze the Footprint Baseline Comparison			
	<i>FY 2012 Baseline</i>	<i>2013</i>	<i>Change (FY 2012 – 2013)</i>
<i>Square Footage</i>	1,192,544	1,200,490	7,946

Note: Preliminary information, pending verification by GSA.

Reporting of Operations and Maintenance Costs Owned and Direct Lease Buildings			
	<i>FY 2012 Reported Cost</i>	<i>2013</i>	<i>Change (FY 2012 – 2013)</i>
<i>Operation and Maintenance Costs (\$ in millions)</i>	\$4.637	\$3.374	-\$1.263



## **Undisbursed Balances in Expired Grant Accounts**

In FY 2014, NSF funded research and education in science and engineering through grants and cooperative agreements to 1,827 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 90 days after the grant expires to complete final drawdowns and expenditures.

The information provided here pertains to the agency's two grant making 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 financial closeout action takes place 90 days after the award expiration date when the undisbursed balances are de-obligated from the award. Administrative closeout is initiated after financial closeout is completed.

The methodology used to develop undisbursed balances on expired grant awards is consistent with the U.S. 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*, along with discussion and clarifying information from GAO. The data reported here reflects the amount of undisbursed balances in grant accounts that have reached their end date and are eligible for closeout.

### **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 comprehensive post-award monitoring process. NSF grants are closed based on their period of performance end date. Ninety days after the grant period has expired, all unliquidated (or undisbursed) are de-obligated. 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 monthly basis using a set of automated and manual activities. Eligibility for closeout for all NSF awards begins 90 days after the award expiration date. The NSF Financial Accounting System (FAS) closeout process automatically de-obligates any unliquidated (unspent) award balance, produces an award closeout transaction to flag the

**Appendix 5: Undisbursed Balances in Expired Grant Accounts**

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award as financially closed, and sends the financial closeout date to the NSF award management system. This initiates final administrative closeout procedures in the award management system.

The expected award closeout date is made available to awardees and staff through the Award Cash Management Service (ACM\$). ACM\$ is a new feature of Research.gov that went live for all grantees on July 1, 2013. ACM\$ is NSF's new approach to award payments and associated post-award processes. It requires the submission of award level payment amounts and expenditures each time funds are requested by awardees. ACM\$ allows NSF post-award monitoring at the individual award level throughout the lifecycle of the award.

**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.

At 2014 fiscal year-end there were no grants that had to be canceled. Due to the new financial system implementation, all undisbursed balances in expired grant accounts were de-obligated prior to year-end. 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 2014, there were 4,295 expired grants with undisbursed balances of \$72,612,661.

Status of Undisbursed Balances in Expired Grants			
	FY 2014 (as of 9/30/14)	FY 2013 (as of 9/30/13)	FY 2012 (as of 9/30/12)
Number of expired grants	4,295	6,556	7,986
Undisbursed balances prior to closeout	\$72,612,661	\$118,371,186	\$184,489,992

## Awards to Affiliated Institutions

This table lists the institutions affiliated with members of the National Science Board (NSB) in FY 2014.

Affiliated Institution <sup>1</sup>	Awards Obligated in FY 2014 (Dollars in thousands)
American Association for the Advancement of Science	\$ 6,567
Arizona State University	16,591
California Institute of Technology	92,867
Clemson University	8,753
Cornell University	120,184
Georgetown University	1,659
Georgia Institute of Technology	61,768
Illinois Institute of Technology	1,154
Massachusetts Institute of Technology	90,468
Princeton University	60,777
Purdue University	75,719
Stanford University	85,947
Texas A&M University	8,918
Tufts University	1,933
University of California – Berkeley	114,400
University of California – Davis	7,074
University of Chicago	40,996
University of Colorado	67,425
University of Michigan	90,066
University of Missouri – Columbia	3,817
University of Oklahoma	11,098
University of Oregon	17,964
William Marshall Rice University	6,307
<b>TOTAL</b>	<b>\$ 992,452</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 1,542 NSF invention disclosures reported to the Foundation either directly or through NIH's iEdison database during FY 2014. 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

ACA	America COMPETES Act of 2009	FBWT	Fund Balance with Treasury
ACMS\$	Award Cash Management Service	FECA	Federal Employees' Compensation Act
AFGE	American Federation of Government Employees	FERS	Federal Employees Retirement System
AFR	Agency Financial Report	FFMIA	Federal Financial Management Improvement Act of 1996
AIMS	Antarctic Infrastructure Modernization for Science	FFR	Federal Financial Report
AMBAP	Award Monitoring and Business Assistance Program	FFRDC	Federally Funded Research and Development Center
AOAM	Agency Operations and Award Management	FISCAM	Federal Information System Controls Audit Manual
AOR	Architect of Record	FMFIA	Federal Managers Financial Integrity Act of 1982
APR	Annual Performance Report	FNSF	Future NSF Headquarters Office
ARRA	American Recovery and Reinvestment Act of 2009	FSIP	Federal Service Impasses Panel
ASC	Antarctic Support Contractor	FTE	Full-Time Equivalent
ATST	Advanced Technology Solar Telescope	FY	Fiscal Year
AURA	Association of Universities for Research in Astronomy	GAAP	Generally Accepted Accounting Principles
BFA	Office of Budget, Finance and Award Management	GAO	Government Accountability Office
BRP	Blue Ribbon Panel	GPRA	Government Performance and Results Act of 1993
BSR	Business System Review	GSA	General Services Administration
CAP	Cross-Agency Priority (Goal)	H-1B	Non-immigrant Petitioner Fees Account funds
CAS	Cost Accounting Standards	ICASS	International Cooperative Administrative Support Services
CCE STEM	Cultivating Cultures for Ethical STEM	ICQA	Internal Control Quality Assurance
CDR	Conceptual Design Review	IDR	Interdisciplinary Research
CFO	Chief Financial Officer	IG	Inspector General
COFAR	Council on Financial Assistance Reform	INSPIRE	Integrated NSF Support Promoting Interdisciplinary Research and Education
COSO	Committee of Sponsoring Organizations of the Treadway Commission	IPA	Intergovernmental Personnel Act
COTS	Commercial Off-the-Shelf	IPERA	Improper Payments Elimination and Recovery Act of 2010
CSRS	Civil Service Retirement System	IPERIA	Improper Payment Elimination and Recovery Improvement Act of 2012
DAEO	Designated Agency Ethics Official	IT	Information Technology
DAS	Division of Administrative Services	K-12	Kindergarten to Grade 12
DCAA	Defense Contract Audit Agency	LFO	Large Facilities Office
DIS	Division of Information Systems	LRO	Labor Relations Officer
DKIST	Daniel K. Inouye Solar Telescope	LSST	Large Synoptic Survey Telescope
DMF	Social Security Administration's Death Master File	MREFC	Major Research Equipment and Facilities Construction
DNP	Do Not Pay	NIH	National Institutes of Health
DOL	Department of Labor	NSB	National Science Board
DRB	Director's Review Board	NSF	National Science Foundation
EEO	Equal Employment Opportunity	OIG	Office of Inspector General
EESE	Ethics Education in Science and Engineering	OMB	Office of Management and Budget
EHR	Education and Human Resources	OPM	Office of Personnel Management
EIS	Enterprise Information System	PP&E	General Property, Plant, and Equipment
EPLS	GSA Excluded Parties List System	PTR	Potentially Transformative Research
FAS	Financial Accounting System		
FASAB	Federal Accounting Standards Advisory Board		

R&D	Research and Development
R&RA	Research and Related Activities
RCR	Responsible Conduct of Research
RFP	Request for Proposal
RSSI	Required Supplementary Stewardship Information
RTSC Polar	Raytheon Antarctic Logistics Support Contract
S&E	Science and Engineering
SAM	GSA System for Award Management
SBR	Statement of Budgetary Resources
SFFAS	Statement of Federal Financial Accounting Standards
SOS	Schedule of Spending
SSP	Shared Service Provider
STEM	Science, Technology, Engineering, and Mathematics
TEMS	Telecommunications Expense Management Services
UGG	Uniform Grant Guidance
USAP	United States Antarctic Program
USGAAP	U.S. Generally Accepted Accounting Principles
USSGL	U.S. Standard General Ledger