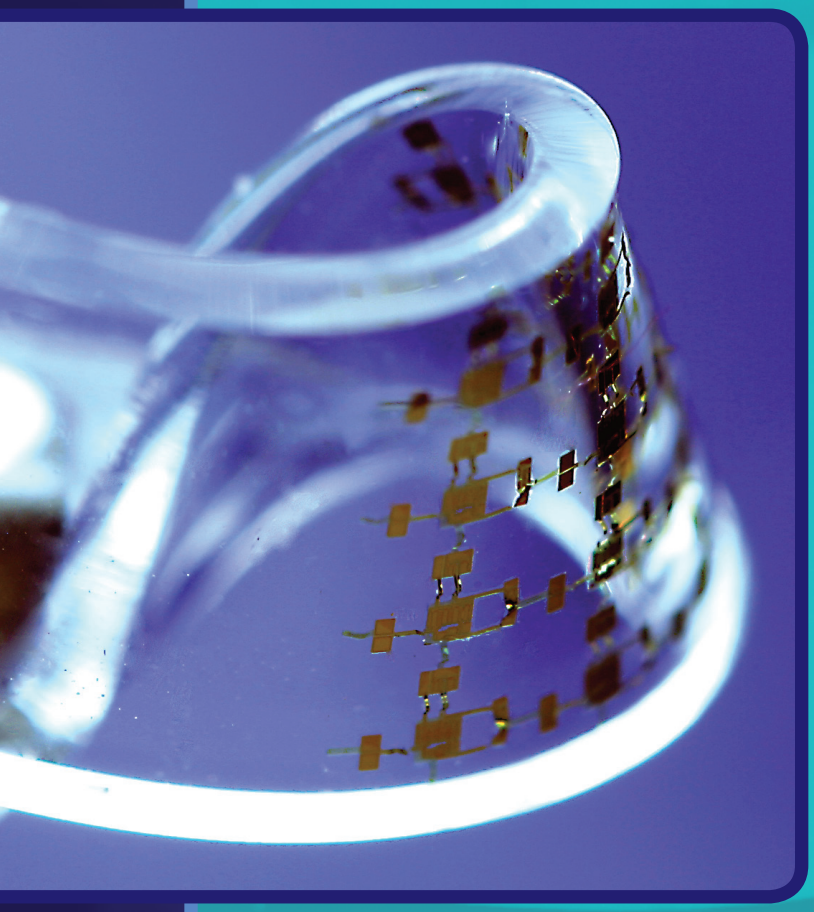
UNITED STATES

National Science Foundation

FY 2011

Agency Financial Report



Investing in America's Future

THE NSF STATUTORY MISSION

To promote the progress of science; to advance the national health, prosperity, and welfare; and to secure the national defense

—From The National Science Foundation Act of 1950 (P.L. 81-507)

THE NSF VISION

NSF envisions a nation that capitalizes on new concepts in science and engineering and provides global leadership in advancing research and education.

—From "Empowering the Nation Through Discovery and Innovation, NSF Strategic Plan for Fiscal Years 2011-2016"

About the Cover: **Stretchable and Twistable Electronics**

Researchers Yonggang Huang at Northwestern University and John Rogers at the University of Illinois at Urbana-Champaign have developed circuits that can stretch, bend, and even twist! In the past there have been limits for the use of electronic components--which have been flat and unbendable--due to the fact they are made primarily of silicon, which is brittle and inflexible. Bending or stretching would make the component useless. Now, Huang and Rogers have developed a process to produce stretchable electronics, increasing the stretching range by as much as 140 percent and allowing users to subject circuits to extreme twisting. The new technology improved upon several past developments by the pair. This emerging technology will be ideally suited in instances where flat, unbendable electronics would fail. Potential uses include flexible sensors, transmitters and new photovoltaic and microfluidic devices, as well as areas of medicine and athletics. Huang and Rogers are also looking into possible application of their technology in solar panels. This research was supported by the National Science Foundation (NSF) and the U.S. Department of Energy.

For more information see: www.nsf.gov/news/mmg/mmg_disp.cfm?med_id=65335

Credit: John Rogers, University of Illinois.

www.nsf.gov

About This Report

For FY 2011, in lieu of a Performance and Accountability Report, the National Science Foundation (NSF) is using an alternative approached as identified in Office of Management and Budget (OMB) Circular A-136, *Financial Reporting Requirements.* NSF is preparing three alternative reports, which provide financial management and program performance information to demonstrate accountability to our stakeholders and the American public. These reports can be found on NSF's website at www.nsf.gov/about/performance.

- This report, the ***Agency Financial Report*** (AFR), focuses on financial management and accountability. It includes the results of NSF's annual financial statement audit, management's assurance statement, the NSF Inspector General's (IG) memorandum on the agency's FY 2012 management challenges, as well as management's report on the progress made on the management challenges identified by the IG for FY 2011. The ***AFR*** also includes a summary of NSF's key performance metrics.

- The ***Annual Performance Report*** (APR) will include the complete results of NSF's FY 2011 Government Performance and Results Act (GPRA) performance goals, including the science, technology, engineering, and mathematics (STEM) workforce priority goal. It will also include a discussion of NSF's new performance assessment and evaluation framework. The ***APR*** will be included in NSF's *FY 2013 Budget Request*, which will be transmitted to Congress on February 6, 2012.

- NSF's ***Performance and Financial Highlights*** report will summarize key information from the ***AFR*** and ***APR.*** It will be available on February 15, 2012.

For copies of these reports, please send a request to Accountability@nsf.gov. We always welcome your suggestions on how we can make these reports more informative.

NSF by the Numbers	
$6.9 billion	*FY 2011 appropriations (does not include special or donated funds)*
1,875	*Colleges, universities, and other institutions receiving NSF funding in FY 2011*
51,600	*Proposals evaluated in FY 2011 through a competitive merit review process*
11,200	*Competitive awards funded in FY 2011*
262,000	*Proposal reviews conducted in FY 2011*
276,000	*Estimated number of people NSF supports directly (researchers, postdoctoral fellows, trainees, teachers, and students)*
44,000	*Students supported by NSF Graduate Research Fellowships since 1952*

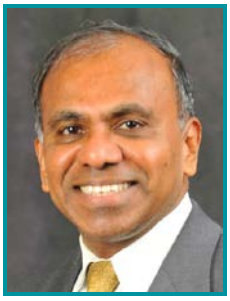
NATIONAL SCIENCE FOUNDATION
FY 2011 Agency Financial Report

www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf12001

II. Financials

III. Appendices

A MESSAGE FROM THE DIRECTOR



I am pleased to present the National Science Foundation's (NSF) *Agency Financial Report* (AFR) for fiscal year (FY) 2011. NSF's mission is to promote and advance progress in science and engineering research and education in the United States. NSF has long been our nation's engine of innovation. It is the overarching source of federal support for fundamental research across all science and engineering fields. This support becomes even more crucial to innovation as multidisciplinary research becomes increasingly possible, productive, and prevalent. The relationship between technological innovation and fundamental research is well established. In fact, basic research, with its long-term perspective accompanied by a strong emphasis on disciplinary excellence and multi-disciplinary interactions, is a necessary foundation for a successful innovation ecosystem. In this time of economic uncertainty, there is a national need to support, nurture, and strengthen our long-term research and innovation ecosystem, which has been the fuel for our scientific and economic leadership as well as national security.

Through a world-renowned merit review process, NSF funds the best ideas and best people in all fields of science and engineering within a highly competitive environment. Under the *OneNSF* framework, the agency strives to work seamlessly in a well-integrated way across organizational and disciplinary boundaries guided by six underlying principles: Support fundamental research in every disciplinary area; address complex multidisciplinary challenges of national and global significance; spark greater innovation and opportunity for scientific discoveries in the NSF grantee community; create new networks and infrastructure for the nation to address complex scientific issues and grand challenges; improve organizational efficiency; and catalyze development and talent for the scientific and engineering workforce of the 21st century. During FY 2011, three notable efforts exemplify the important work being done at the Foundation:

- In July, NSF announced the NSF Innovation Corps (I-Corps) program to help develop scientific and engineering discoveries into useful technologies, products, and processes. I-Corps, a public–private partnership, will connect NSF-funded scientific research with the technological, entrepreneurial and business communities to help create an environment for innovation that couples scientific discovery with technology development and the needs of our society. The private sector will provide critical support by serving as mentor volunteers to share their knowledge and experience with NSF and I-Corps awardees.

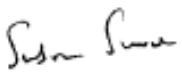
- In September, NSF launched a Career–Life Balance Initiative to improve our ability to recruit and retain talented scientists and engineers here in our U.S. educational institutions. A set of forward-looking policies and practices have been designed to help increase the placement, advancement, and retention of the historically underrepresented talent of women, minorities, and persons with disabilities in science, technology, engineering, and mathematics (STEM), particularly women who are seeking tenure in academe. However, this initiative offers equal benefits to men and women developing careers. The Career–Life Balance Initiative is one strategy to broaden participation of those who are underrepresented especially in STEM, because it is essential to our future innovation, economic prosperity, and global leadership.

- This year, NSF also announced plans to convene a global Merit Review Summit in May 2012 to develop a foundation for international collaboration and elucidate acceptable merit review principles. As the world has become highly interconnected, global collaborations are inevitable. However, the most fundamental barriers to bilateral and multilateral international collaborations are disparate standards for scientific merit review and differences in the infrastructures that ensure professional ethics and scientific integrity. This Summit will provide a first-of-its-kind forum for addressing these challenges.

Enabling the success of our programmatic activities are the agency's financial and management activities, which is the focus of this report. I am pleased to report that NSF received its 14th consecutive unqualified opinion from an independent audit of its financial statements. The audit report identified no material weaknesses. In addition, NSF can provide reasonable assurance that the agency is in substantial compliance with the Federal Managers Financial Integrity Act of 1982 and the Federal Financial Management Improvement Act of 1996, and that internal control over financial reporting is operating effectively to produce reliable financial reporting. No material weaknesses were found in the design or operation of the internal controls.

As this report goes to press, NSF also can confirm achievement of the five annual performance goals for which results are available at this time. This includes the agency's longest-standing customer service goal ("dwell time"), which aims to provide timely notification of funding decisions to applicants for NSF awards. In keeping with the requirements of the Government Performance and Results Act, NSF will report the complete results of our FY 2011 performance goals, including the STEM workforce priority goal, in NSF's *Annual Performance Report* (APR*)* as part of the agency's *FY 2013 Budget Request to Congress.* The AFR, APR, and a *Performance and Financial Highlights* report are being prepared in lieu of an agency Performance and Accountability Report in accordance with guidance from the Office of Management and Budget. The APR and the *Highlights* report will be available in February 2012, at www.nsf.gov/about/performance. All NSF's GPRA performance data undergo a rigorous verification and validation review by an independent, external management consultant based on guidance from the General Accountability Office.

Thank you for your interest in the National Science Foundation.



Subra Suresh
Director

November 15, 2011

Chapter 1

Management's Discussion and Analysis

Agency Overview

Mission and Vision

The mission of the U.S. National Science Foundation (NSF) is "to promote the progress of science; to advance the national health, prosperity, and welfare; and to secure the national defense."[1] As stated in NSF's FY 2011–2016 strategic plan, *Empowering the Nation Through Discovery and Innovation*, our vision is a nation that capitalizes on new concepts in science and engineering and provides global leadership in advancing research and education.[2]

NSF is the only federal agency dedicated to the support of non-biomedical research and education across all fields of science and engineering, and our mission and vision underscore the critical role that NSF plays in addressing the nation's most pressing challenges. NSF-funded research and education projects have fueled many important innovations, which, in turn, have stimulated economic growth and improved the quality of life and health for all Americans. Our role in the U.S. science and engineering enterprise is so central that we are regarded by many as the "innovation agency."[3]

Among the many advances that NSF has supported in recent years include technology-based innovations that spur economic prosperity; understanding mitigation of and adaptation to climate change; developing sustainable approaches to the use of energy and natural resources; and transforming undergraduate education to prepare tomorrow's leading scientists. Our investments integrate research and education to support the development of a world-class scientific and engineering workforce and nurture the growth of a scientifically and technologically aware public—one that can engage fully in a 21st century life that increasingly relies on technology to meet challenges and leverage opportunities.[4]

As part of our focus on improving the future for all Americans, since 1952 NSF has funded nearly 44,000 Graduate Research Fellows.[5] The ranks of NSF fellows include numerous individuals who have made transformative breakthroughs in science and engineering research. Many of them have become leaders in their chosen careers, and some have been honored as Nobel laureates. To date, 196 Nobel Prize winners have received NSF support at some point in their careers, including 5 of the FY 2011 winners.[6]

We achieve our mission by making awards and managing a portfolio of the highest quality research and education projects that further our strategic goals and reflect our national priorities. In doing so, NSF is visionary, enabling transformational work, new fields, and new theoretical paradigms, particularly through grants that reflect the increasingly multidisciplinary nature of modern science and engineering. We are dedicated to excellence, continuous learning, and growth. We are broadly inclusive, seeking and including contributions from all sources while reaching out, especially to groups that are underrepresented in science and engineering.

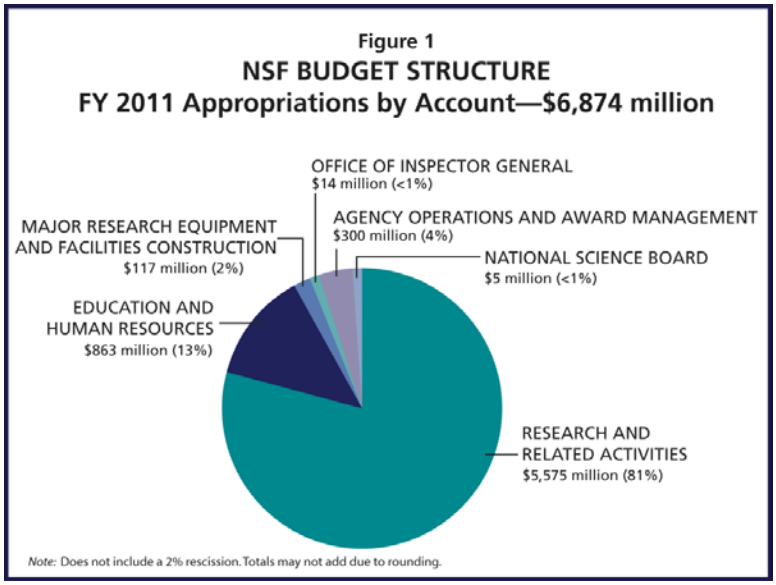
All NSF programs and activities are driven by three interrelated strategic goals outlined in NSF's FY 2011–2016 strategic plan—*Transforming the Frontiers, Innovating for Society*, and *Performing as a Model Organization.* Our pursuit of these goals can be assessed through our success in achieving our performance goals, which include measureable targets for our near-, mid-, and long-term actions. Figure 5

[1] The National Science Foundation Act of 1950 (Public Law 81-507).
[2] NSF's strategic plan is available at http://www.nsf.gov/news/strategicplan/index.jsp.
[3] See Analytic Perspectives, Research and Development from *The President's FY 2012 Budget* at www.whitehouse.gov/sites/default/files/omb/budget/fy2012/assets/topics.pdf.
[4] See NSF's FY 2012 Budget Request to Congress at www.nsf.gov/about/budget/fy2012.
[5] For more information about the NSF Graduate Research Fellowship Program see www.nsfgrfp.org.
[6] See www.nsf.gov/news/news_summ.jsp?cntn_id=100683.

(page I-11) depicts our strategic and performance goals, which were developed in FY 2011 as the road map for achieving the NSF mission and vision.[7]

Achieving the NSF Mission

NSF is funded primarily through six congressional appropriations, which totaled $6,874 million in FY 2011 (Figure 1).[8]



- NSF's largest appropriation is Research and Related Activities, which accounted for 81 percent of the agency's FY 2011 funding. This account supports basic research and education activities at the frontiers of science and engineering, including NSF's strategic investments in high-risk and transformative research.

- The Education and Human Resources appropriation supports activities that ensure a diverse, competitive, and globally engaged U.S. science, technology, engineering, and mathematics workforce and a scientifically literate citizenry.

- The Major Research Equipment and Facilities Construction (MREFC) appropriation supports the construction of unique national research platforms and major research equipment that enable cutting-edge research.

- The Agency Operations and Award Management appropriation supports NSF's administrative and management activities.

- Funding for the operation of the Office of Inspector General (OIG) and for the National Science Board (NSB) is provided in two separate appropriations.

[7] The NSF strategic plan details the agency's mission and vision; describes our core values, strategic and performance goals, targets and core strategies; and outlines the evaluation and assessment mechanisms designed to ensure that we achieve our mission and vision. A more detailed discussion of the NSF strategic plan is included in the Performance discussion that begins on page I-8.

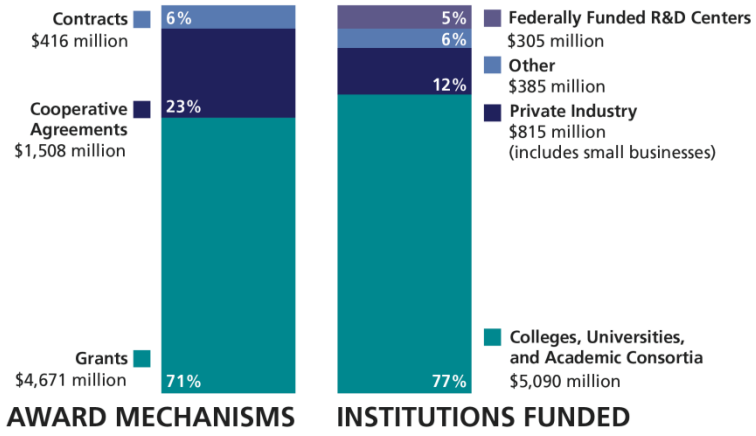
[8] In Figure 1, appropriations of $6,874 million plus Trust Funds ($53 million) and H1-B Nonimmigrant Petitioner Receipts ($105 million) equals $7,032 million as shown in the Statement of Budgetary Resources.

In FY 2011, 90 percent of research funding was allocated based on competitive merit review. The merit review process involved more than 42,300 members of the science and engineering community who serve as panelists and proposal reviewers.[9]

The majority of NSF's FY 2011 obligations directly supported programmatic activities, with most (94 percent) funded through grants or cooperative agreements (Figure 2).[10] Grants can be funded either as standard awards, in which funding for the full duration of the project is provided in a single fiscal year, or as continuing awards, in which funding for a multi-year project is provided in increments. Cooperative agreements are used when the project requires substantial agency involvement (e.g., research centers, multi-use facilities). Contracts are used to acquire products, services, and studies (e.g., program evaluations) required primarily for NSF or other government use.

Figure 2

NSF AWARD MECHANISMS AND INSTITUTIONS FUNDED
FY 2011 Obligations for Research and Education Programs
($6,595 million)



Notes: NSF Research and Education Programs include Research & Related Activities, Education & Human Resources, and Major Research Equipment & Facilities Construction appropriations.
Other institutions funded include federal, state, and local governments; nonprofit organizations; and international organizations.

In FY 2011, NSF made awards to 1,875 institutions in 50 states, the District of Columbia, and 4 U.S. territories. These institutions employ America's leading scientists, engineers, and educators and train the leading-edge innovators of tomorrow. In total, NSF awards directly involved an estimated 276,000 senior researchers, postdoctoral associates, other professionals, graduate and undergraduate students, and K–12 students and teachers. As shown in Figure 2, 77 percent of NSF awards are to academic institutions, including colleges, universities, and academic consortia. Awards are also provided to Federally Funded Research and Development Centers (FFRDCs) and private industry, including small businesses. Other recipients include federal, state, and local governments; nonprofit organizations; and international organizations. A small number of awards are for research in collaboration with other countries, which has value to the U.S. scientific enterprise.

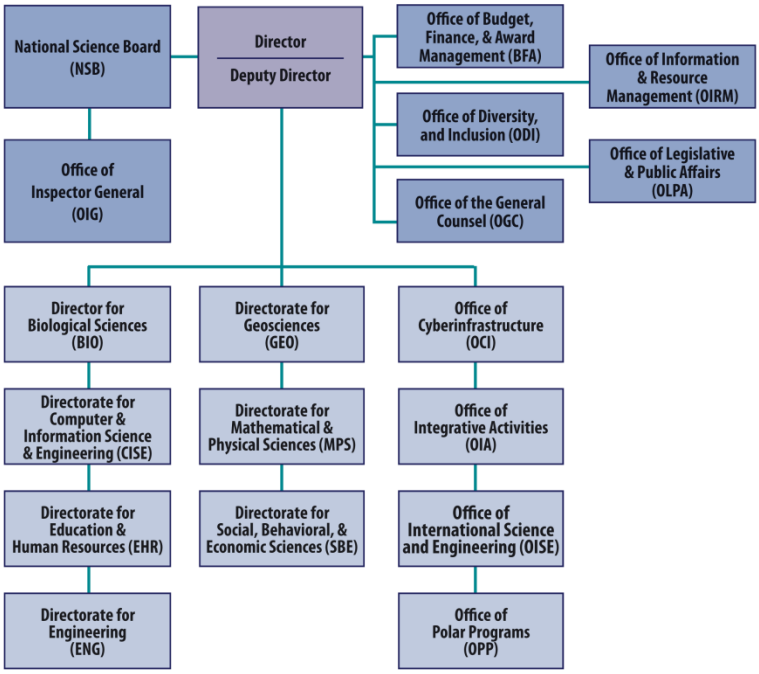
[9] NSF does not require merit review for certain kinds of proposals, including proposals for international travel grants and some conferences, symposia, and workshops. For more information about NSF's merit review process, see www.nsf.gov/bfa/dias/policy/meritreview and *Report to the National Science Board on the National Science Foundation's Merit Review Process, FY 2010* at www.nsf.gov/nsb/publications/2011/nsb1141.pdf.

[10] See page I-15 for a discussion of FY 2011 proposal actions, awards, and funding rate.

Organizational Structure

NSF is an independent federal agency headed by a Director appointed by the President and confirmed by the U.S. Senate.[11] A 25-member National Science Board (NSB) meets five times a year to establish the overall policies of the Foundation. NSB members—prominent contributors to the science and engineering research and education community—are also appointed by the President with the consent of the Senate.[12] The NSF Director is a member *ex officio* of the Board. Both the Director and the other NSB members serve 6-year terms.

Figure 3
NSF ORGANIZATION CHART



The NSF workforce includes about 1,400 FTE.[13] NSF also regularly recruits visiting scientists, engineers, and educators as rotators who work at NSF for up to four years.[14] The blend of permanent staff and rotators, which infuse new talent and expertise into the agency, is reflective of our core values and integral to carrying out NSF's mission to support the entire spectrum of science and engineering research and education at the frontier. As shown in Figure 3, NSF's organizational structure aligns with the major fields of science and engineering (www.nsf.gov/staff/orgchart.jsp). In addition to the agency's headquarters in Arlington, Virginia, NSF maintains offices in Paris, Tokyo, and Beijing to facilitate its international activities and an office in Christchurch, New Zealand, to support the U.S. Antarctic Program (USAP).

[11] Biographies of the Director and Deputy Director, also appointed by the President and confirmed by the Senate, are available at www.nsf.gov/od.
[12] For additional information see the NSB website at http://www.nsf.gov/nsb.
[13] Full-time equivalents (FTE).
[14] As of September 2011, temporary rotator appointments generated 175 full-time equivalents under the Intergovernmental Personnel Act.

Management Challenges

In FY 2011, the NSF Office of Inspector General (OIG) identified six major management and performance challenges facing the agency: Ensuring proper stewardship of Recovery Act funds,[15] improving grant administration, strengthening contract administration, becoming a model organization for human capital management, encouraging the ethical conduct of research, and effectively managing large facilities.[16] OIG also identified two emerging challenges: Implementing the Open Government Directive (OGD) and planning for the next NSF headquarters. Management's report on the significant activities undertaken in FY 2011 to address these challenges is included as Appendix 3B. The report also discusses planned activities for FY 2012 and beyond. Among activities reported are the following:

- *To ensure proper stewardship of Recovery Act funds*: We continued to implement a robust, comprehensive, and multi-stage review program for recipient reporting. This process has matured over the eight reporting quarters, receiving recognition from the Office of Management and Budget (OMB) and the Recovery Accountability and Transparency Board (RATB) and contributing process-improvement recommendations government-wide. We delivered a 99 percent compliance rate over the last six reporting quarters with several quarters reaching 99.9 percent compliance. This was the result of targeted outreach through phone calls and emails to recipients in danger of non-compliance with reporting requirements for multiple quarters and suspending or terminating the awards of non-compliant grantees when necessary.

- *To improve grant administration*: We issued new NSF–OIG operating principles for audit resolution and established the Stewardship Collaborative to monitor/improve the process and jointly address outstanding and emerging issues. We modified the Award Monitoring and Business Assistance Program (AMBAP) risk assessment and focused attention on small, non-traditional institutions with the least experience in managing federal funds. We increased the number of AMBAP site visits and subjected all institutions identified as managing higher risk awards and not receiving a scheduled AMBAP Site Visit to an AMBAP Desk Review. We developed and beta-tested *Research.gov* Award Manager, an award management tool providing access to accurate, timely, and reliable administrative, financial, and award data from multiple NSF IT systems. We also continued planning/pre-acquisition for *iTRAK*, a single state-of-the-art, fully integrated financial management/property solution.

- *To strengthen contract administration*: We prepared a Corrective Action Plan (CAP) for the significant deficiency on contract monitoring of cost reimbursement contracts. In addition, we updated the contracting manual to ensure that vendors have required disclosure statements in place prior to the award of cost reimbursement contracts. We also executed a modification to extend the USAP contract through March 31, 2012, to ensure continuity of operations during the source selection phase of the procurement.

- *To become a model organization for human capital management:* We implemented the first set of performance plans for rotators (IPAs), appointed under the Intergovernmental Personnel Act, who are serving in senior executive service positions. We established a mandatory training policy, which requires all new executives, managers, and supervisors to take 32 hours of training during their first year, 16 of which must be NSF-specific. We developed and implemented seven NSF Academy courses aimed at enhancing leadership and management skills for all executives, including rotators.

[15] NSF received $3.0 billion under the American Recovery and Reinvestment Act of 2009 (Recovery Act or ARRA).

[16] OIG's memorandum on FY 2011 management challenges can be found in NSF's *FY 2010 Agency Financial Report* (Appendix 3A) at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf11003&org=NSF. The OIG's memorandum on FY 2012 management challenges can be found in Appendix 3A of this report.

We also continued to address the issue of succession planning at NSF. The Division of Human Resource Management completed a review of the succession plans of Directorates and Offices and developed scenarios for key management positions based on internal bench strength and plans for rotator recruitments. We also completed several workforce planning-related studies for key NSF divisions and offices to help identify future staffing needs, management models, full-time equivalent (FTE) requirements, skills/competency needs, and, in some cases, a transition plan for aligning current resources to the future model.

- *To encourage the ethical conduct of research*: As part of NSF's response to the America Competes Act, we strengthened our understanding and adherence to standards by ensuring that the science and engineering communities have resources to train students and postdoctoral fellows in making informed, ethical, and responsible decisions in research and professional practices. We also gave presentations that included information on responsible conduct of research at various conferences, seminars, and orientation meetings.

- *To effectively manage large facilities*: We ensured that all projects were on time, on budget, and meeting performance expectations by participating in construction and final design reviews. We continued NSF Programs/Large Facilities Office-established practices for regular monitoring of all open construction projects funded through the MREFC appropriations account. We also assessed performance of awardees by conducting Business Systems Reviews (BSR) and related post-BSR monitoring activities on several MREFC projects, including the Cornell High Energy Synchrotron Source (CHESS); the Network for Earthquake Engineering Simulation (NEES); the Alaska Research Vessel, *Sikuliaq*; and EarthScope.

With respect to the emerging challenges:

- *To effectively implement the Open Government Directive (OGD):* We explored promising prize/challenge candidates, which included three challenges sponsored by the Directorates of Engineering (ENG) and Computer and Information Science and Engineering (CISE)—CISE Ignite; CISE/ENG Robotics, and CISE/ENG commercialization challenge and a hand-writing recognition challenge sponsored by the Directorate for Biological Sciences (BIO). In addition, we announced the Office of Legislative and Public Affairs (OLPA) International Science and Engineering Visualization Challenge. We also created a Data Task Force to explore issues of open data access and required that a Data Management Plan be included in proposals submitted to NSF.

- *To effectively plan for the next NSF headquarters*: We awarded a competitive procurement for Technical Support Services, which include project management, architecture, and engineering services; technology project management; relocation services; communications; and budget support. The procurement also added of six full-time contractor staff to the Future NSF project team.

Future Challenges and Opportunities: OneNSF

Earlier this year, NSF Director Subra Suresh introduced a new visionary concept for the agency—*OneNSF: NSF will be an agency that works seamlessly in a well-integrated way across organizational and disciplinary boundaries.* The principles underlying *OneNSF* are embedded in the agency's *FY 2012 Budget Request to Congress*:

- Support fundamental research in every disciplinary area;
- Address complex multidisciplinary challenges of national and global significance;
- Spark greater innovation and opportunity for scientific discoveries in the NSF grantee community;

- Create new networks and infrastructure for the nation to address complex scientific issues and grand challenges;
- Improve organizational efficiency; and
- Catalyze human capital development and talent for the science and engineering workforce of the 21st century.

OneNSF strives to create new knowledge, stimulate discovery, address complex societal problems, and promote national prosperity through a variety of mechanisms. It provides an investment framework that aligns with NSF's strategic goals and includes both focused investments and broader areas of emphasis. For example, in FY 2012, under the *OneNSF* framework NSF is poised to support an array of programs that foster linkages across the organization including the following:

- Cyberinfrastructure Framework for 21st Century Science and Engineering (CIF21) is a new portfolio that builds on NSF's long history of providing leadership for cyberinfrastructure and computational science for the U.S. academic science and engineering community. CIF21 will develop and deploy comprehensive, integrated, sustainable, and secure cyberinfrastructure to accelerate research and education and new functional capabilities in computational and data-intensive science and engineering, thereby transforming our ability to effectively address and solve the many complex problems facing science and society.

- The Science, Engineering, and Education for Sustainability (SEES) portfolio consists of programs that spark innovations for tomorrow's clean energy solutions with a cross-disciplinary approach to sustainability science. SEES is designed to foster innovative insights about the environment-energy-economy nexus that will increase the effectiveness of our energy and management policies in adapting to and mitigating the impacts of climate change and improve our capabilities for rapid response to extreme events.

- Advanced Manufacturing holds tremendous potential for significant short-term and long-term economic impact by promising entirely new classes and families of products that were previously unattainable. NSF will focus investment on several emerging opportunities including cyber-physical systems, advanced robotics research, scalable nanomanufacturing, sensor and model-based smart manufacturing, educational activities to support training the next generation of product designers and engineers, and industry-university cooperation.

- A new emphasis on research and development that strengthens the development of K-12 teachers and undergraduate faculty in science, technology, engineering, and math (STEM) will focus on new lines of research and development needed for rapid improvement in the preparation and continued professional learning of current and future math and science teachers.

Photo Credit: Grace Chui

Scratch is a programming language that has made it easy for more than one million children to create and share their own interactive stories, animations, games, music, and art. NSF supports ongoing Scratch collaborations. One such "ScratchEd" project is designing an innovative model for professional development of teachers, who use Scratch to help their students learn computational thinking. NSF supports Scratch workshops and events that have impact worldwide and facilitates virtual sharing of ideas, lesson plans, and curriculum units. For more information see http://info.scratch.mit.edu/About_Scratch.

Performance

This discussion of NSF's FY 2011 performance management activities focuses on the agency's efforts related to the Government Performance and Results Act (GPRA), the American Recovery and Reinvestment Act (ARRA or Recovery Act), and management workload metrics.

Government Performance and Results Act

As a federal agency, NSF is subject to the Government Performance and Results Act of 1993 and related performance reporting guidance issued by OMB.[17] In 2011, Congress passed the GPRA Modernization Act of 2010 which refined GPRA and established additional requirements.[18] In mid-FY 2011, NSF released a new strategic plan, *Empowering the Nation Through Discovery and Innovation: NSF Strategic Plan for Fiscal Years (FY) 2011–2016.*[19] The new plan fundamentally reframes NSF's strategic goals. These three goals, described in more detail below, lay out a path toward both longer-term outcomes and the more immediate impacts that NSF's investments can generate.

- *Transform the Frontiers* emphasizes the seamless integration of research and education as well as the close coupling of research infrastructure and discovery.
- *Innovate for Society* points to the tight linkage between NSF program and societal needs and highlights the role that new knowledge and creativity play in economic prosperity and society's general welfare.
- *Perform as a Model Organization* emphasizes the importance to NSF of attaining excellence and inclusion in all operational aspects.

As shown in Figure 4, the three strategic goals map directly to a set of performance goals that will inform priorities over the life of the strategic plan.

GPRA Modernization Act of 2010

In FY 2011, the GPRA was updated with the passage of the GPRA Modernization Act of 2010. This law revises existing requirements for agencies' strategic planning, performance planning, and performance reporting processes and institutes a new framework for setting and reporting on progress towards federal and agency priority goals. Other provisions of the law formally establish a government-wide Performance Improvement Council, a performance website for reporting, and agency Chief Operating Officers (COO) and Performance Improvement Officers (PIO). In FY 2011, NSF named its COO and PIO, concluded its FY 2010–FY 2011 Priority Goal, and began selecting Priority Goals for FY 2012–2013.

The following discussion of NSF's performance goals and results summarizes information available to date. NSF's *FY 2011 Annual Performance Report* (APR) will provide a discussion of all the agency's performance measures, including descriptions of the metrics, methodologies, results, and trends, along with a list of relevant external reviews. All of NSF's FY 2011 performance goals have undergone an independent verification and validation review by an external consultant using GAO guidance.[20] More

[17] OMB Circular A-11, *Preparation, Submission, and Execution of the Budget* (Part 6); see www.whitehouse.gov/omb/circulars_a11_current_year_a11_toc.

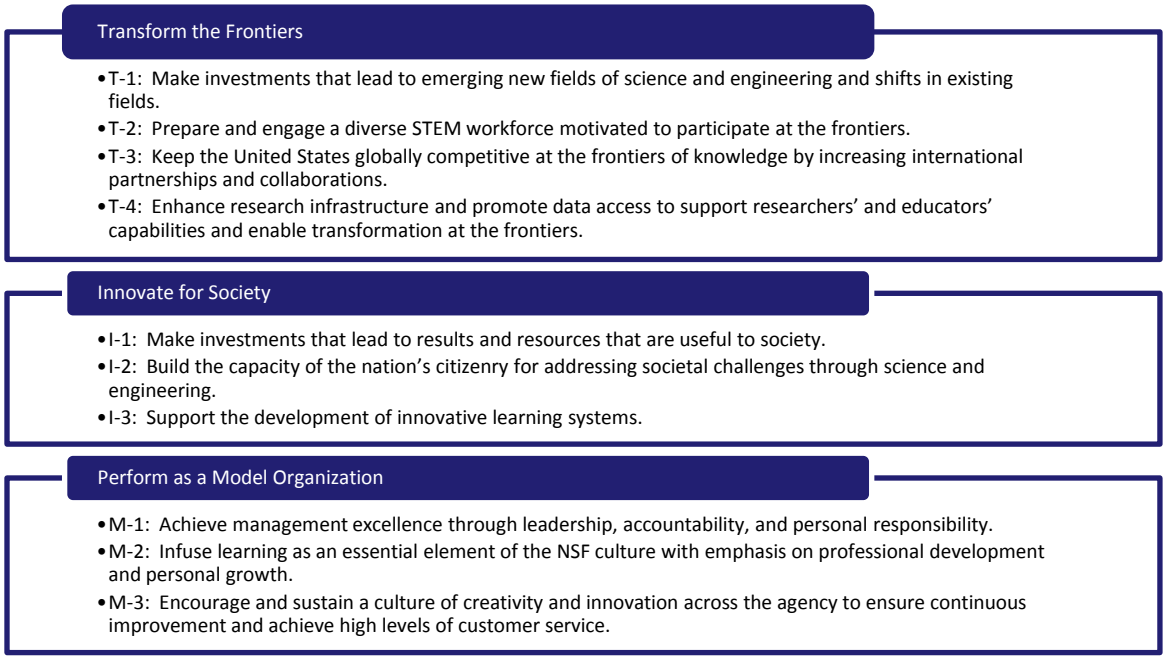
[18] See www.gpo.gov/fdsys/pkg/PLAW-111publ352/pdf/PLAW-111publ352.pdf. and www.whitehouse.gov/omb/mgmt-gpra/index-gpra.

[19] See www.nsf.gov/news/strategicplan.

[20] U.S. Government Accountability Office. (April 1998). *The Results Act: An Evaluator's Guide to Assessing Agency Annual Performance Plans*, GAO/GGD-10.1.20; see www.gao.gov/special.pubs/gg10120.pdf).

detailed information about NSF's GPRA verification and validation review will be part of the APR. NSF's FY 2011 APR will be included in the agency's *FY 2013 Budget Request to Congress*, which will be available on February 6, 2012, at www.nsf.gov/about/performance.

Figure 4: NSF Strategic and Performance Goals



Strategic Outcome Goals

In FY 2011, NSF set 16 performance goals. Some are new, reflecting either the novel ideas in NSF's new strategic plan or the fact that measurement capabilities can only now be brought to bear in pre-existing areas of interest (Goal 3 and Goals 6–14 in Figure 5). Some goals are unchanged from previous years, reflecting deeply ingrained priorities (Goals 4 and 16). Other goals are natural follow-ons to activities that began in previous years (Goals 1, 2, and 13). The 16 performance goals cover all program activities within the agency. Results for five goals are available at this time. Figure 5 provides a high level summary of the results available to date. A few key points are:

- NSF worked to achieve a mixture of goal types in FY 2011. This approach was recommended by the 2009 Advisory Committee for GPRA Performance Assessment, which said, "Consider an assessment framework that uses multiple measures and methods, applied over various time scales. Use both quantitative and qualitative evidence."[21]
- NSF continued to monitor the well-established quantitative performance measures known as dwell time (Goal 16) and construction cost and schedule variance (Goal 4). NSF exceeded its dwell time goal of making 70 percent of proposal decisions within 6 months. Results for the cost and schedule variance goal will be reported in the APR.
- Some FY 2011 performance goals continue activities that began in previous years. For example, Goal 1, an analysis of NSF's investments in potentially transformative research, reviewed funds spent in

[21] This report is available at www.nsf.gov/pubs/2009/nsf09068/nsf09068.pdf.

FY 2010, which were themselves the subject of a performance goal in that fiscal year, and Goal 2, NSF's STEM Workforce Priority Goal, was a 2-year effort that began in FY 2010.

- The majority of FY 2011 goals were new because NSF's new strategic plan introduced impact-oriented goals that could not be measured with existing measures or techniques. For example, Goals 7–10 sought to establish baseline measurements of new research portfolios that cut across organizational boundaries, specifically industrial and innovation partnerships, public understanding and communication of science and engineering, the development of research-based innovative learning systems, and programs that promote partnerships that support the development of learning technologies. In other cases, a preexisting portfolio was baselined with new data or methods (e.g., Goal 3 focused on identifying the number of new program activities with international implications and Goal 6 focused on identifying the number and types of industrial and innovation grantee partnerships).
- Two of the six *Perform as a Model Organization* goals, Goals 12 and 13, are direct responses to the human resource management challenges identified by the Office of Personnel Management and NSF's Office of the Inspector General. Goal 12 focused on the development of performance plans for temporary staff appointed under the Intergovernmental Personnel Act (IPA); nearly all IPA employees filed performance plans in FY 2011. Goal 13 focused on establishing a pilot to use OPM's 360-degree evaluation instrument to provide feedback to NSF leaders and managers on skills and abilities; results for Goal 13 are incomplete at the time of this report.

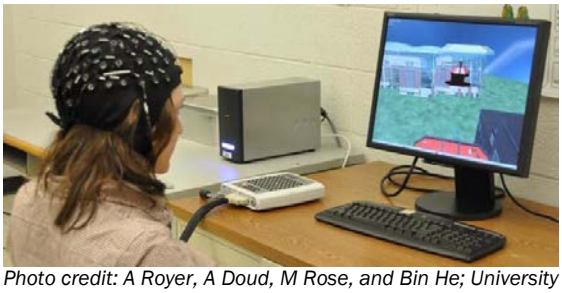


Photo credit: A Royer, A Doud, M Rose, and Bin He; University of Minnesota

NSF-funded researchers have developed a unique brain–computer interface that allows humans to use thoughts to control the flight of a virtual helicopter in real time. Electrical signals from the scalp are used to control the helicopter's movements. A brain-wave based system offers those with nervous system disorders and spinal cord injuries the potential to improve their quality of life and to participate in society. Healthy individuals may also benefit by harnessing their thoughts to control multiple activities.

STEM Workforce Priority Goal

In the President's FY 2011 Budget Request, NSF set the following Priority Goal: "By the end of 2011, at least six major NSF science, technology, engineering and mathematics (STEM) workforce development programs at the graduate, postdoctoral, or early career level have evaluation and assessment systems providing findings enabling program re-design or consolidation for more strategic impact." An analysis of NSF's progress towards this goal is under review and will be made public in the APR. Even without that analysis, NSF can report that its programs have begun to benefit from participation in the Priority Goal. For example, programs that fund postdoctoral fellows are working together to develop a common assessment and evaluation framework that will support evidence-based decision-making within and enable cooperation among programs.

NSF's Performance, Assessment, and Evaluation Framework

NSF is reviewing its performance, assessment, and evaluation framework, in keeping with the administration's commitment to establishing an evaluation infrastructure that complements and integrates efforts to strengthen performance measurement and management. The NSF Strategic Plan places special emphasis on testing and refining new approaches to assessment and evaluation. Efforts that took place in FY 2011 include:

- Progress toward NSF's STEM Workforce Priority Goal, including seizing unanticipated opportunities for program improvement (see preceding section).

- Sustained NSF support for the multi-agency data infrastructure for monitoring and analyzing investments in science and engineering research and education. (Information about the STAR METRICS project is available at www.starmetrics.nih.gov.)
- Establishment of an NSF-wide capability for assessment and evaluation planning and support. In its first year this resource has: (1) expanded the analytical infrastructure at NSF, specifically, development and release of new assessment tools for use by NSF staff in portfolio analysis and outcome assessment, which will facilitate data-driven portfolio management and priority-setting; (2) begun to foster an agency-wide culture that values assessment and evaluation as decision-making tools; (3) coordinated and facilitated cross-cutting thematic evaluations; (4) introduced evaluation plans and mindsets into new activities and programs in their planning stages; and (5) supported testing of new processes for Committees of Visitors' (COV) outcome assessments.
- Development of directorate-specific activities.
- Systematic efforts to improve evaluation and monitoring activities in STEM education and workforce programs.

Figure 5. Status of NSF's FY 2011 GPRA Performance Goals

Strategic Goal	Performance Goal	Status to Date
Transform the Frontiers	**Goal 1: Potentially Transformative Research.** Produce an analysis of NSF's FY 2010 investments in activities undertaken to foster potentially transformative research.	**Achieved**
	Goal 2: STEM Workforce (Priority Goal). Ensure that NSF STEM workforce development programs at the graduate, professional, or early career level participate in evaluation and assessment systems.	◊
	Goal 3: International Implications. Identify number of new NSF program solicitations, announcements, and Dear Colleague Letters with international implications.	◊
	Goal 4: Construction Project Monitoring. Keep negative cost and schedule variance at or below 10 percent for all MREFC facilities under construction.	**Target: 100%** **Q3 Result: 100%**
	Goal 5: Data Management Practices at Large Facilities. Determine current data management practices at NSF-funded facilities.	**Achieved**
Innovate for Society	**Goal 6: IIP Grantees' Partnerships. Industrial & Innovation Partnerships (IIP):** Identify the number and types of grantees' partnerships.	**Achieved**
	Goal 7: Public Understanding and Communication. Identify number of programs that fund activities that address public understanding and communication of science and engineering.	◊
	Goal 8: K–12 Components. Identify number of programs that fund activities with K–12 components.	◊
	Goal 9: Innovative Learning Systems. Identify number of programs that fund the development of research-based innovative learning systems.	◊
	Goal 10: Partnerships for Learning Technologies. Identify number of programs that fund activities that promote partnerships that support development of learning technologies.	◊
Perform as a Model Organization	**Goal 11: Model EEO Agency.** Attain essential elements of a model EEO program, as defined in EEOC requirements.	◊
	Goal 12: IPA Performance Plans. Include temporary staff appointed under the Intergovernmental Personnel Act (IPAs) under NSF's performance management system.	**Achieved**
	Goal 13: 360-degree Evaluation Instrument. Pilot use of OPM's 360-degree evaluation instrument to provide feedback to NSF leaders and managers on skills and abilities.	**Target 1 met**
	Goal 14: Staff Developmental Needs. Pilot process for assessing and	**Target 1 met**

Figure 5. Status of NSF's FY 2011 GPRA Performance Goals

Strategic Goal	Performance Goal	Status to Date
	addressing developmental needs.	
	Goal 15: Grant-By-Grant Payments. Gather functional requirements for changes in current system processes that will accommodate the transition to a grant-by-grant payment method.	◊
	Goal 16: Dwell Time. Inform applicants whether their proposals have been declined or recommended for funding within six months of deadline, target date, or receipt date, whichever is later.	**Achieved** **Target: 70%** **Result: 78%**

Note: ◊ Indicates results will be reported in the APR with the FY 2013 Budget Request.

Recovery Act Performance Results

In FY 2011, NSF continued implementation of our three ARRA programs—Research and Related Activities (R&RA), Education and Human Resources (EHR), and MREFC. NSF's broad goals for these programs are derived directly from the purposes and principles expressed in the Recovery Act, in that we made long-term investments in basic research, education, and research infrastructure needed "to increase economic efficiency by spurring technological advances in science and health."[22] NSF targets investments that will fuel economic growth by yielding new discoveries that will enhance productivity for many years to come and will contribute to the preparation of a dynamic U.S. workforce.

Photo credit: Benjamin Massey, R/V SIKULIAQ Project Shipyard Inspector.

Funded in part by the American Recovery and Reinvestment Act of 2009, construction of the NSF R/V *SIKULIAQ* is well underway at Marinette Marine Corporation in Marinette, Wisconsin. Construction of the research vessel will create more than 150 jobs locally while building a long-term national asset for the U.S. oceanographic research community. *SIKULIAQ* is designed to support high latitude arctic research in sea ice up to 2.5-feet thick. The vessel is currently scheduled to embark on its first research mission in October 2012.

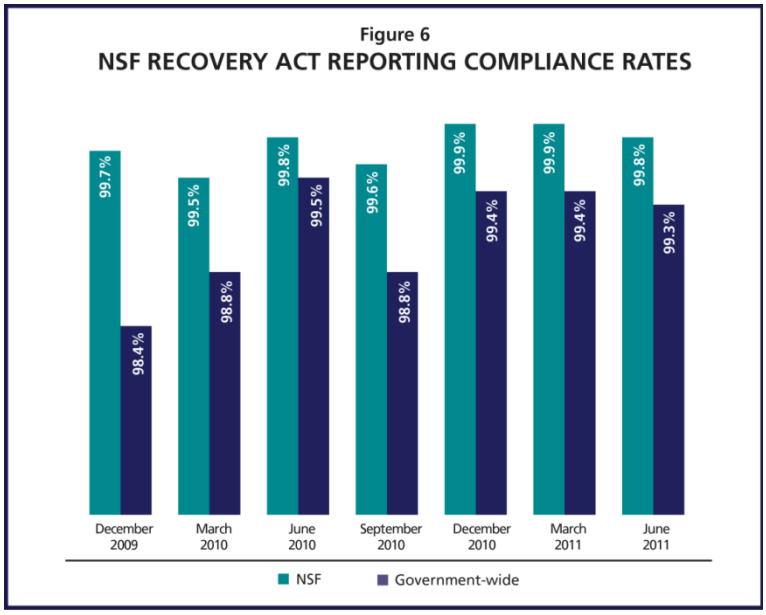
NSF's entire ARRA portfolio of more than 5,000 awards and $3 billion was obligated by the end of FY 2010. Our key focus for FY 2011 was monitoring awardee performance, including compliance with requirements for quarterly recipient reporting; providing ARRA information to stakeholders and improving the accessibility to and quality of ARRA data; and increasing awardee communication, outreach, and oversight to ensure the timely expenditure of award funds. ARRA expenditures were $1.38 billion as of September 30, 2011. FY 2011 ARRA activities included:

- **Monitoring awards for progress in accordance with the NSF ARRA program plans.** In addition to the high-risk and potentially transformative awards, the FY 2011 R&RA program oversaw the implementation of the research infrastructure and instrumentation programs—Major Research

[22] The American Recovery and Reinvestment Act of 2009 is available at http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_bills&docid=f:h1enr.pdf.

Instrumentation (MRI) and Academic Research Infrastructure (ARI) —which entailed early stage monitoring of awardee planning for acquisition of shared scientific instrumentation and, in many cases, planning, design, and construction of laboratory facilities. NSF Program Officers also monitored the progress of the EHR and MREFC programs,[23] assessing whether educational targets were met and if MREFC projects were proceeding within budget and on time.[24] These results will be reported in the APR.

- **Ensuring that stakeholders had timely access to ARRA-information.** In FY 2011, we worked closely with the government-wide ARRA implementation effort, providing accessible information to the White House, Congress, and the NSB, as well as to other members of the STEM community including expenditure data, award information, programmatic updates and more. We continued to promote Research Spending and Results to the STEM community, which allows the public to search for and download NSF ARRA award information. We also contributed ARRA-related stories to *U.S. News & World Report* and produced five new videos for Science360.gov's ARRA Report, which highlighted interesting ARRA-funded discoveries. All of these efforts were designed to increase transparency and public understanding of our work.



- **Continued communication with awardees to ensure the timely expenditure of ARRA funds.** We continued monitoring compliance with the ARRA award term and condition requiring awardees to spend funds by the anniversary date of their award. In FY 2011, no award was terminated for this reason. NSF implemented a multi-level awardee outreach initiative in order to achieve this result, connecting NSF financial contacts directly to awardee financial contacts, NSF Program Officers to awardee principal investigators, and senior agency managers to senior research administration personnel to ensure that all NSF and awardee staff were focused on the expenditures issue.

- **Monitoring compliance with ARRA recipient report requirements and enhancing NSF review program**. As noted previously, we continued to implement NSF's comprehensive, multi-stage review program for recipient reporting. Our effective program and 99 percent compliance rate over the last seven reporting quarters firmly establish NSF as a leader that the accountability and transparency community can rely on for government-wide process-improvement recommendations.[25] Figure 6 depicts NSF's recipient reporting results over the past seven quarters as compared to the government-wide average.

[23] The EHR ARRA program includes the Math Science Partnership Program, the Robert Noyce Scholarship Program and the Science Masters Program, and the MREFC portfolio includes the Advanced Technology Solar Telescope (ATST), the Ocean Observatories Initiative (OOI) and the Alaska Region Research Vessel (ARRV), as well as the ARRA-funded Airborne Observation Platform that is part of the National Ecological Observatory Network (NEON).

[24] See the NSF FY 2012 Budget Request for the most recent information on ARRA MREFC targets.

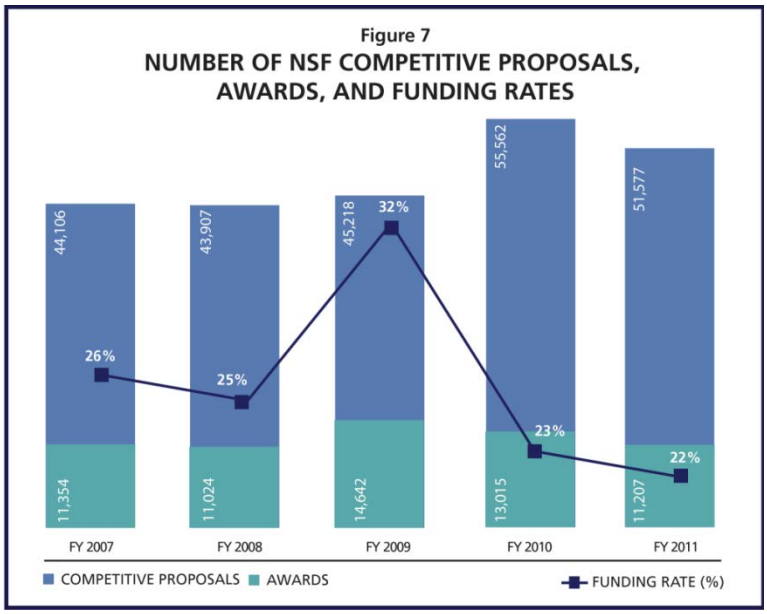
[25] NSF has overseen 8 recipient reporting quarters to date, delivering compliance rates of 99 percent over the last seven quarters, with several quarters at 99.9 percent.

In FY 2012, NSF will continue to implement our recipient reporting program interacting with the Recovery Accountability and Transparency Board (RATB) and Government Accountability and Transparency Board (GATB). We will continue our enhanced outreach and communication with ARRA awardees. We will also expand our expenditure rate monitoring to respond to requirements and guidance from OMB, the RATB, and Congress and to ensure that the purposes of ARRA are fulfilled. In addition, we will use ARRA lessons-learned to inform NSF-wide management practices, particularly in the area of expenditure monitoring.

Workload and Management Trends

NSF continuously monitors key portfolio, workload, and financial measures to understand short- and long-term trends and to help inform management decisions.

- In FY 2011, the number of competitive proposals reviewed by NSF remained at historically high levels. After seeing nearly 56,000 proposals in FY 2010, nearly 52,000 proposals were either awarded or declined by NSF in FY 2011. Even with this noteworthy 7 percent reduction from FY 2010, the number of actions remained 17 percent and 14 percent, respectively, above pre-Recovery Act FY 2008 and FY 2009 levels (see Figure 7).



- The decrease of 1,808 in new competitive awards made in FY 2011—nearly 14 percent—reflects the higher number of new awards made in FY 2009 and FY 2010 as a result of Recovery Act funding.
- The FY 2011 funding rate of 22 percent is down 1 percentage point from the prior year and 10 percentage points below the FY 2009 funding rate of 32 percent, which reflected the overall level of investment made possible by the Recovery Act. As shown in Figure 7, the FY 2011 funding rate is below pre-Recovery Act funding rates of 26 percent and 25 percent in fiscal years 2007 and 2008, respectively.
- The average annual award size decreased by nearly 9 percent in FY 2011, to $172,533. This compares to a nearly 7 percent average annual increase in award size from FY 2007 to FY 2010.
- NSF's workforce in terms of full time equivalents (FTE) decreased slightly, from 1,424 in FY 2010 to 1,415 in FY 2011. This is in contrast to the 3 percent average annual increase in FTE from FY 2007 to FY 2010.
- Workload as measured by the number of active awards continued to increase in FY 2011, by 2 percent. However, the number of proposal reviews conducted decreased 9 percent.

Figure 8. Workload and Management Trends

	Measure	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Rate of Change (FY 2011/ FY 2010)	Annual Rate of Change (FY 2011/ FY 2007)
Portfolio	Competitive proposal actions	44,106	43,907	45,218	55,562	51,577	-7%	4%
	Competitive new awards	11,354	11,024	14,642	13,015	11,207	-14%	-0.3%
	Average annual award size (competitive awards)	$157,943	$167,300	$172,569	$189,338	$172,533	-9%	2%
	Funding rate	26%	25%	32%	23%	22%	-1% point	-4***
Workload	Number of employees (FTE, usage)	1,310	1,339	1,386	1,424	1,415	-0.6%	2%
	Number of active awards*	47,778	48,799	52,858	55,449	56,414	2%	5%
	Proposal reviews conducted	248,335	248,772	241,712	287,017	262,005	-9%	1%
Financial	Cash-on-hand** (in millions)	$33	$26	$26	$19	$21	11%	-9%
	Number of grant payments	19,074	19,481	25,723	22,782	29,214	28%	13%
	FCTR/FFRs submitted	99.70%	99.80%	99.60%	99.80%	99.89%	<1% point	<1% point***

* Active awards include all active awards regardless of whether they received funding during the fiscal year.
** FY 2011 is through the third quarter.
***Percentage point change from FY 2007.

- Grantees are required to report the status of funds received from NSF on a quarterly basis through the submission of a Federal Financial Report (FFR). NSF has increased its emphasis on collecting the reports following the change in the FFR due date from 40 to 30 days after the end of the quarter. For FY 2011, 99.9 percent (6,937 of 6,944) of the FFRs due were submitted by the end of the reporting period. High FFR submission levels are directly related to the overall accuracy and completeness of NSF grant expenses as reported on NSF financial statements.

- NSF has increased emphasis on grantee cash monitoring in order to improve cash management by grantees, resulting in less governmental risk and improved cash flow for NSF. Unexpended federal cash held by grantees has decreased to $21 million in FY 2011, from a quarterly average of $33 million in FY 2007. This decrease has been achieved at the same time NSF payments to grantees have increased by 28 percent over the last 5 years.

  In FY 2011, NSF conducted its annual statistical review of FFR expenditures as reported by grant recipients and a separate statistical review of expenditures reported for Recovery Act awards. Consistent with prior year results, the error rate noted in the review of all awards by an independent consultant was well below the materiality levels as defined in OMB standards. Of particular note was that no reporting errors were discovered during the review of Recovery Act awards. NSF intends to continue its grant expenditure sampling process as part of its integrated and comprehensive grant financial monitoring program strategy.

- For FY 2011, the number of NSF grant payments continued to reflect an increase in activity levels compared to FY 2008 and prior fiscal years, primarily due to the increased number of Recovery Act awards. This increased activity level should gradually diminish throughout FY 2012 and beyond as NSF begins the closeout process for these awards.

Financial Discussion and Analysis

In these challenging budgetary times, the federal government has turned to Chief Financial Officers to offer solutions that will enable agencies to serve the American people more effectively. NSF has responded by building on business services that work smarter, better, and more efficiently. One way we have done this through additional risk management analysis of our operations. Effective risk management helps us to better set priorities while avoiding unnecessary costs. For example, as part of its internal control program, NSF performs risk-based internal control assessments that cover a range of business processes. These assessments are integrated with system reviews to gain efficiencies. NSF has also developed new tools to facilitate award management and the monitoring of expenditure rates. The agency's move towards modernizing its financial systems and contracting and grant management processes has allowed us to make strides towards improving the availability and transparency of financial information with the result of operating more efficiently. During FY 2011, NSF moved forward with the planning and acquisition of a new financial management system (see discussion on "Financial System Strategy" on page 1-25). In addition, our current award oversight activities are based upon risk assessments of funding. The risk assessment process is consistently reviewed based on results and experience.

As responsible stewards of taxpayer dollars, NSF prepares annual financial statements in conformity with generally accepted accounting principles (GAAP) for U.S. federal government entities. The financial statements present NSF's detailed financial information relative to its mission and the stewardship of those resources entrusted to the agency. It also provides readers with an understanding of the resources that NSF has available for use, the cost of our programs, and the status of resources at the end of the fiscal year. NSF subjects its financial statements to an independent audit to ensure that they are free from material misstatement and can be used to assess NSF's financial status and related financial activity for the years ending September 30, 2011 and 2010. For FY 2011, NSF received its 14th consecutive unqualified audit opinion. The audit report noted no material weaknesses. In addition, the report no longer includes the prior year significant deficiency related to the monitoring of cost reimbursement contracts. This is largely the result of the agency's efforts to obtain incurred cost audits for high-risk contracts to ensure the reasonableness and accuracy of costs paid on contracts. However, the audit report includes a new significant deficiency related to cooperative agreements with budgeted contingency amounts. Although management does not concur with the significant deficiency, NSF will continue to work towards reaching agreement and resolving the concerns reported. A detailed discussion of the independent audit is included in the audit report which can be found on page II-3.

Understanding the Financial Statements

NSF's FY 2011 financial statements and notes are presented in accordance with OMB Circular No. A-136, *Financial Reporting Requirements.* NSF's current year financial statements and notes are presented in a comparative format. The Stewardship Investment schedule presents information over the last five years. Figure 9 summarizes the changes in NSF's financial position in FY 2011.

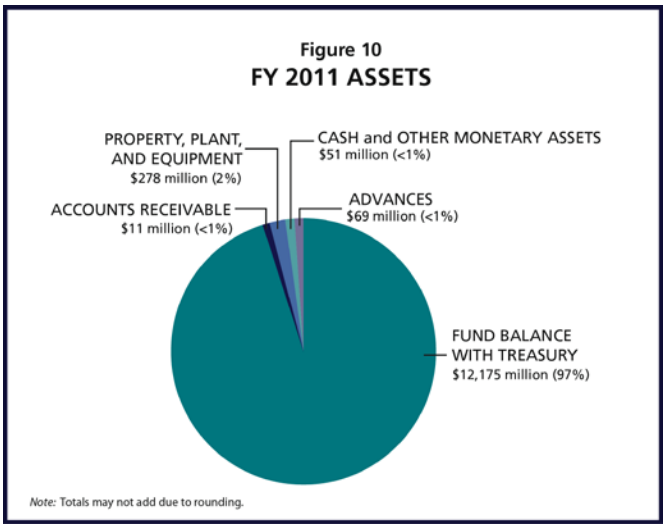
Figure 9. Changes in NSF's Financial Position in FY 2011 *(dollars in thousands)*

Net Financial Condition	FY 2011	FY 2010	Increase/ (Decrease)	% Change
Assets	$12,584,734	$12,804,423	($219,689)	-1.7%
Liabilities	$581,123	$596,010	(14,887)	-2.5%
Net Position	$12,003,611	$12,208,413	($204,802)	-1.7%
Net Cost	$7,139,994	$6,895,106	$244,888	3.6%

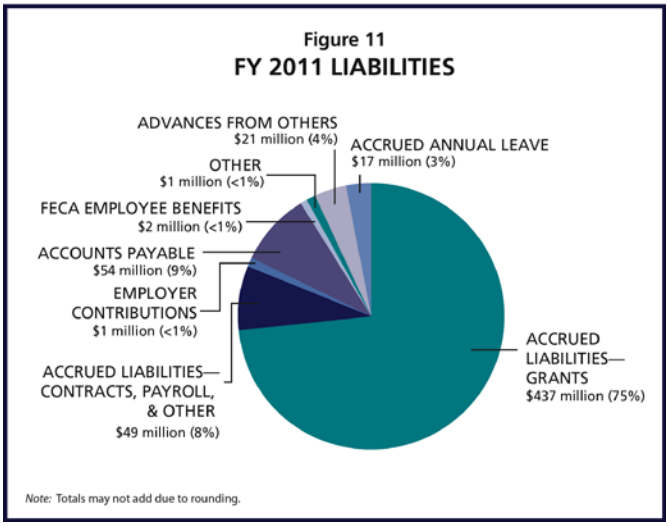
Balance Sheet

The Balance Sheet presents the total amounts available for use by NSF (assets) against the amounts owed (liabilities) and amounts that comprise the difference (net position). NSF's total assets are largely composed of *Fund Balance with Treasury*. A significant balance also exists in the *General Property, Plant and Equipment (PP&E)* account.

In FY 2011, *Total Assets* (Figure 10) decreased 1.7 percent from FY 2010 assets. The bulk of the change occurred in the *Fund Balance with Treasury* account, which decreased by $283.6 million in FY 2011. *Fund Balance with Treasury* is funding available from which NSF is authorized to make expenditures and pay amounts due through the disbursement authority of the Department of Treasury. It is increased through appropriations and collections and decreased by expenditures and rescissions. The FY 2011 decrease is attributed to the spending of ARRA funds by grant recipients.



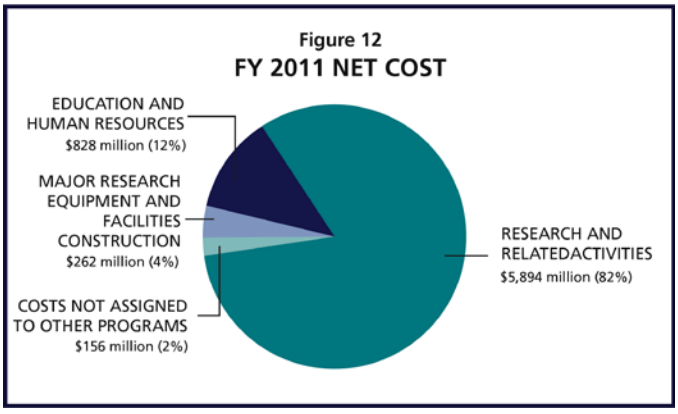
NSF's *Total Liabilities* (Figure 11) decreased by 2.5 percent in FY 2011. The majority of this change is related to NSF's strides to encourage its partnering agencies to work on a reimbursable basis, reducing the related *Advances from Others* liability.



Statement of Net Cost

This statement presents the annual cost of operating NSF programs. The net cost of each specific NSF program operation equals the program's gross cost less any offsetting revenue. Intragovernmental earned revenues are recognized when related program or administrative expenses are incurred. *Earned revenue* is deducted from the full cost of the programs to arrive at the *Net Cost of Operation*.

Approximately 95 percent of all current year NSF Net Costs of Operations incurred were directly related to the support of the Research and Related Activities (R&RA), Education and Human Resources (EHR), and Major Research Equipment and Facilities Construction (MREFC) programs. Additional costs were incurred for indirect general operation activities (e.g., salaries, training, and activities related to the advancement of NSF information systems technology) and activities of the NSB and the OIG. These costs were allocated to the R&RA,



EHR, and MREFC programs and account for 5 percent of the total current year Net Cost of Operations (Figure 12). These administrative and management activities are focused on supporting the agency's program goals.

Statement of Changes in Net Position

The Statement of Changes in Net Position presents the agency's cumulative net results of operation and unexpended appropriations for the fiscal year. NSF's Net Position decreased slightly by 1.7 percent, or $204.8 million, in FY 2011.

Statement of Budgetary Resources

This statement provides information on how budgetary resources were made available to NSF for the year and the status of those budgetary resources at year-end. For FY 2011, *Total Budgetary Resources* decreased by $610.8 million due to ARRA funding appropriated in the prior fiscal year. New *Budget Authority-Appropriation* for the R&RA, EHR, and MREFC accounts were $5,575.0 million, $862.8 million, and $117.3 million, respectively. The combined new *Budget Authority–Appropriation* in FY 2011 for the NSB, OIG, and Agency Operations and Award Management (AOAM) accounts totaled $318.5 million. NSF also received funding via warrant from the special earmarked H-1B receipt account in the amount of $104.8 million and via donations from foreign governments, private companies, academic institutions, nonprofit foundations, and individuals in the amount of $53.1 million.

Stewardship Investments

NSF-funded investments yield long-term benefits to the general public. NSF investments in research and education produce quantifiable outputs, including the number of awards made and the number of researchers, students, and teachers supported or involved in the pursuit of science and engineering research and education. NSF incurs stewardship costs to empower the nation through discovery and innovation. In FYs 2011 and 2010, these costs amounted to $337.2 million and $312.3 million, respectively.

Limitations of the Financial Statements

In accordance with the guidance provided in OMB *Circular No. A-136*, NSF discloses the following limitations of the agency's FY 2011 financial statements, which appear in Chapter II of this report: The principal financial statements have been prepared to report the financial position and results of operations of NSF, pursuant to the requirements of 31 U.S.C. 3515(b). While the statements have been prepared from NSF books and records in accordance with Generally Accepted Accounting Principles (GAAP) for federal entities and the format prescribed by OMB, the statements are in addition to the financial reports used to monitor and control budgetary resources, which are prepared from the same books and records. The statements should be read with the realization that they are for a component of the U.S. Government, a sovereign entity.

Other Financial Reporting Information

Debt Collection Improvement Act of 1996

Net Accounts Receivable totaled $10.9 million at September 30, 2011. Of that amount, $10.7 million is due from other federal agencies. The remaining $186,000 is due from the public. NSF fully participates in the Department of the Treasury Cross-Servicing Program. In accordance with the Debt Collection Improvement Act, this program allows NSF to refer debts that are delinquent more than 180 days to the Department of the Treasury for appropriate action to collect those accounts. In FY 2004, OMB issued M-04-10, *Memorandum on Debt Collection Improvement Act Requirements*, which reminded agencies of their responsibility to comply with the policies for writing-off and closing-out debt. In accordance with

this guidance, NSF has now incorporated the policy of writing-off delinquent debt more than two years old. Additionally, NSF seeks Department of Justice concurrence for action items over $100,000.

Cash Management Improvement Act (CMIA)

In FY 2011, NSF had no awards covered under CMIA Treasury–State Agreements. NSF's FastLane system with grantee draws of cash makes the timeliness of payments issue under the Act essentially not applicable to the agency. No interest payments were made in FY 2011.

Systems, Controls, and Legal Compliance

Management Assurances

The Federal Managers Financial Integrity Act of 1982 (Integrity Act or FMFIA) requires federal agencies to conduct ongoing evaluations and report on the adequacy of internal accounting and administrative control. The head of the agency is required to provide an annual statement of assurance that obligations and costs are in compliance with the requirements of applicable laws and regulations; federal assets are safeguarded against fraud, waste, and mismanagement; transactions are accounted for and properly recorded; and financial management systems conform to standards, principles, and other requirements to ensure that managers have timely, relevant, and consistent financial information for decision-making purposes. The FY 2011 evaluation results reflected in the Statement of Assurance on the following page support an unqualified assertion for the year. NSF had no reportable conditions for FY 2011.

The Federal Financial Management Improvement Act of 1982 (FFMIA) requires that agencies implement and maintain financial management systems that comply substantially with the federal financial management system requirements, applicable federal accounting standards, and the U.S. Government Standard General Ledger (SGL) at the transaction level. The agency head makes an annual determination about whether the financial systems are substantially compliant with FFMIA. To meet this requirement, NSF performed tests of compliance with FFMIA, Section 803(a), which determined that the agency's financial systems are substantially compliant.

Highlights from NSF's Internal Control Quality Assurance Program

The NSF Internal Control Quality Assurance Program has evolved from several years of implementation to its third year of an unqualified statement of assurance for a full scope. FY 2011 has been a robust year for internal control reviews; reviews included ten business processes, the United States Antarctic Program property, plant, and equipment activities, the charge card process, and the acquisition process. In addition, there was the Federal Information Security Management Act of 2002 review as well as other reviews related to the information technology.

A variety of tests were performed to determine whether controls supporting the business processes are in place and functioning effectively with respect to the processing of transactions, grant awards, and the safeguarding of assets during the period July 1, 2010 through June 30, 2011. Testing controls validated the operating and design effectiveness of internal controls and provided support that the controls are functioning effectively to meet the control objectives, which addresses relevant financial statement assertions. Observations, testing, interviews, and walkthroughs with NSF personnel were the basis for these results.

To maximize efficiencies and eliminate duplication of efforts, NSF utilized the comprehensive Internal Control Quality Assurance Program to integrate the Federal Managers Financial Integrity Act of 1982, as implemented through OMB Circular A-123, and the more focused financial requirements contained in Appendix A. The key components of the NSF Internal Control Quality Assurance Program include the Program Governance and Control Activity Assessment Tool (CAAT). Taken as a whole, the Program Governance and CAAT help comprise an effective Internal Control Program. Overseen by NSF's Accountability and Performance Integration Council also serving as the agency's Senior Assessment Team, the NSF Internal Control Quality Assurance Program incorporates a multi-year review cycle to ensure that all assessable units undergo detailed internal control reviews.

National Science Foundation
FY 2011 Statement of Assurance

The National Science Foundation (NSF) management is responsible for establishing and maintaining effective internal control and a financial management system that meets the objectives of the Federal Managers Financial Integrity Act of 1982 (Integrity Act) and the Office of Management and Budget (OMB) Circular A-123, *Management's Responsibility for Internal Control*.

NSF managers continually monitor and improve the effectiveness of management controls associated with their programs. This continuous monitoring and other periodic evaluations provide the basis for the annual assessment and report on management's controls, as required by the Integrity Act. Based on the results of these evaluations, NSF provides reasonable assurance that as of September 30, 2011, its internal controls over programs and operations were operating effectively to ensure compliance with applicable laws and regulations. No material weaknesses were identified in the design or operation of internal controls under Section 2 of the Integrity Act and no system non-conformances were identified under Section 4 of the Integrity Act.

In addition, NSF is leveraging the established OMB Circular A-123 and the Integrity Act assessment methodologies to assist in assessing the applicable entity-wide controls, documenting the applicable processes, and identifying and testing the key controls applicable to the American Recovery and Reinvestment Act funding and the Open Government Act.

In accordance with Appendix A of OMB Circular A-123, NSF conducted an assessment of the effectiveness of internal control over financial reporting, which included the safeguarding of assets and compliance with applicable laws and regulations. Based on the results of this assessment for the period ending June 30, 2011, NSF provides reasonable assurance that internal control over financial reporting was operating effectively and no material weaknesses were identified in the design or operation of the internal controls.

For fiscal year 2011, NSF is providing an unqualified statement of assurance that its internal controls and financial management systems meet the objectives of the Integrity Act.

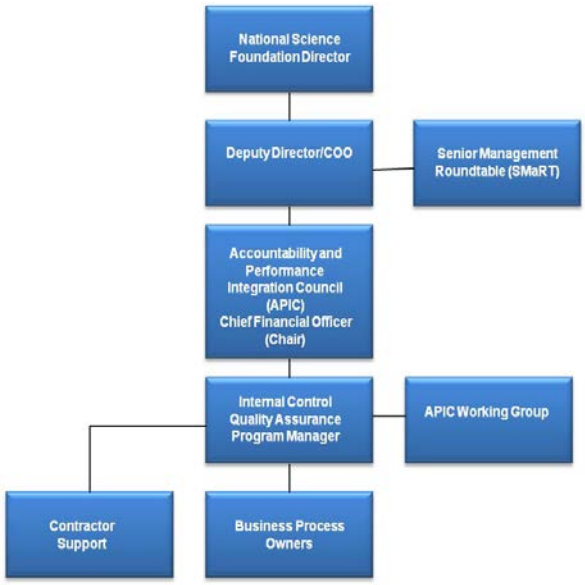
Subra Suresh
Director

November 15, 2011

The Accountability and Performance Integration Council

The Accountability and Performance Integration Council (APIC) works to foster an organizational environment that supports an agency-wide awareness of internal control that will ensure efforts are on-going throughout the year in order to meet the responsibilities for documenting, assessing, monitoring, and correcting internal control issues. Internal control applies to program, operational, and administrative areas, as well as accounting and financial management. APIC reports to and provides findings from the agency-wide review to the Deputy Director/Chief Operating Officer (COO). The COO chairs the Senior Management Roundtable (SMaRT), the body which provides executive level consideration of management and accountability and related issues, drawing on the work of an ad hoc working group. The chart on the right depicts the NSF structure for internal control.

Figure 13. NSF Structure for Internal Control



Management's Responsibility for Internal Control

OMB A-123 requires agencies to annually assess the condition of internal controls within the agency by identifying key controls within key business processes, conducting entity level and transaction level testing and reporting to OMB whether adequate internal controls in financial reporting, operations, and program activities exist. NSF implemented an innovative internal control approach that enables an enterprise-wide review – an approach that helps ensure internal control is not limited to organizational components with financial touch points.

NSF's approach integrates all aspects of OMB Circular A-123, including Appendices A, B and C with related governing authorities including the Improper Payments Information Act as amended, the FMFIA as amended, and OMB Circular A-127. Such integration enabled NSF to realize a streamlined, consistent and reliable internal control program with a reduced risk of duplicative efforts and wasted resources. The internal control approach leveraged varied data collection techniques including conducting interviews, administering surveys and facilitating working sessions to widen the lens, helping to ensure that mission critical areas – that may not have a financial impact – were given adequate attention and consideration.

The ultimate goal of testing key controls is to validate that the controls are functioning effectively to meet the control objectives which address a relevant financial statement assertion. In order to perform testing efficiently, test plans were developed for each business process to document planned testing procedures and to gain evidence to support the operating effectiveness of each control. In determining how extensively a key control is tested (e.g., sample size or type of test performed), NSF considered the complexity of the key control, how often the control is performed, and whether the control is manual or automated. The assessment of control design and operating effectiveness for the FY 2011 key business processes resulted in no significant deficiencies or material weakness to report.

The United States Antarctic Program Property, Plant, & Equipment

NSF and the Raytheon Polar Services Company (RPSC) have a multi-year contract in which RPSC is responsible for acquiring, maintaining, and performing a physical inventory of the Unites States Antarctic (USAP) property, plant, & equipment (PP&E). NSF relies upon RPSC to maintain all related source documentation and record amounts for the PP&E activities it conducts. The USAP PP&E Business Process was tested to validate the operating and design effectiveness of internal controls around NSF capital property, budget reporting, property acquisition, and Antarctic Infrastructure & Logistics Division oversight of capital equipment. Based on observations, testing, interviews, and walkthroughs with RPSC and NSF personnel there were no deficiencies noted.

Charge Card Review

NSF developed procedures in support of its compliance with OMB Circular A-123 Appendix B, Guidance on Improving the Accountability and Effectiveness of Federal Government Charge Card Programs (Appendix B). Appendix B of OMB Circular A-123 prescribes policies and procedures to agencies regarding how to maintain internal controls that reduce the risk of fraud, waste, and error in government Charge Card Program. As a result, a review was conducted to ensure charge cardholders, approving officials, administrative officers and program coordinators are following the policies and procedures set by the NSF Charge Card Program Management Plan prepared by NSF's Agency Program Coordinator in January 2011. The results of the review determined there are no non-compliant issues or reportable conditions to report.

Assessment of Recovery Act Funds

NSF has established and maintained adequate internal controls to ensure that reported results regarding the expenditure of Recovery Act funds and the outcomes achieved are accurate, verifiable, and reported. The assessment of Recovery Act funds was conducted in parallel with ongoing business process internal control reviews. The internal control review of the Recovery Act funds determined the NSF is in compliance with the Recovery Act requirements of transparency and accountability. Unnecessary delays and overruns are avoided and funds are used for authorized purposes and potential for fraud, waste, error, and abuse are mitigated.

Acquisition Assessment

In FY 2011, NSF incorporated the four cornerstones outlined in the U.S. Government Accountability Office (GAO) *Framework for Assessing the Acquisition Function at Federal Agencies* into the acquisition and program management reviews, self-assessments, and other internal control-related review and analysis practices. The GAO framework is a tool to evaluate specific acquisition actions, contracts, compliance with contracting laws and regulations and a source for assessment questions. NSF integrated the GAO template for acquisition and program management with existing internal control processes and practices to ensure efficient internal control assessments of the acquisition activities in support of the annual assurance statement requirements. The four cornerstones of the GAO assessment framework are: Organizational Alignment and Leadership, Policies and Process, Human Capital, and Knowledge and Information Management. NSF evaluated controls at the entity, process, and transaction levels; performed risk assessments; tested and focused on key acquisition activities and programs within the four cornerstone areas. NSF documented assessed risk, tested, and has no reportable conditions to report.

Information Technology Assessments

NSF reviewed the internal controls for information technology (IT) in five domains: access control, contingency planning, configuration management, segregation of duties, and security management. NSF leveraged the Federal Information Security Management Act (FISMA) review to gain efficiencies for

testing activities and documenting the controls which support NSF operations and assets. The assessment consisted of a comprehensive review of policies, procedures and operational controls, including financial system controls. Overall, NSF's IT controls are effective in maintaining a secure IT environment. NSF's integrated secure operations and continuous monitoring verify effective IT security controls are in place.

In FY 2010, a risk assessment of NSF's financial system determined it to be at moderate risk. During FY 2011, there were no system changes to NSF's Financial Accounting System and no additional compliance with OMB Circular A-127, *Financial Management Systems* requirements, therefore, NSF's financial system assessment remains at moderate risk for FY 2011. OMB Circular A-127 prescribes policies and standards in developing, operating, evaluating, and reporting on financial management systems.

In accordance with the requirements of FFMIA, management reports on its implementation and maintenance of financial management systems to substantially comply with federal financial management systems requirements, applicable federal accounting standards, and the U.S. Government SGL at the transaction level. NSF's financial statements are prepared with information generated by the core financial system consistent with OMB Circular A-136, *Financial Reporting Requirements* and the agency's financial systems provides timely and reliable financial information.

Improper Payments Elimination and Recovery Act of 2010

NSF has historically shown that improper payments have not been a problem for the agency and the related risk is low. The Improper Payments Information Act (IPIA) of 2002 and OMB Circular A-123, Appendix C, *Management's Responsibility for Internal Control: Requirements for Effective Measurement and Remediation of Improper Payments*, require agencies to review all programs and activities, identify those that are susceptible to significant erroneous payments, and determine an annual estimated amount of erroneous payments made in those programs. In FY 2009, NSF conducted a statistical review of its FY 2008 Federal Financial Report transactions received from grant recipients. Consistent with the results of previous reviews, the occurrence of NSF improper payments continued to be well below the significant standard of improper payments, which is defined by OMB guidance as exceeding $10 million and 2.5 percent of total outlays. As a result, OMB renewed NSF's relief from the annual IPIA reporting for FY 2010 and FY 2011. The next report will be prepared in FY 2012. During this relief period, NSF has continued to perform annual statistical sampling of grant expenditures, including payments made under the Recovery Act.

The IPIA was followed by the Improper Payments Elimination and Recovery Act (IPERA) in July 2010 and a series of OMB memoranda, including an update to Circular A-123, which established new requirements for agencies on improper payments. The IPERA complements the implementation of agency efforts to reduce and recover improper payments. NSF has worked with its OIG and OMB to implement the requirements by: (1) determining that NSF does not have high priority programs, which are defined as programs that have a higher impact on improper payments, and (2) developing a quarterly high-dollar improper payments report to the OIG.

The IPERA also expanded the types of programs that are required to conduct payment recapture audits. A Payment Recapture Audit is a review and analysis of an agency's or program's accounting and financial records, supporting documentation, and other pertinent information supporting its payments that is specifically designed to identify overpayments. The IPERA requires agencies to report on actions taken to perform recapture audits annually beginning in FY 2011. If an agency determines that performing recapture audits is not cost-effective, then it needs to justify the determination. In compliance with IPERA and Circular A-123, NSF evaluated its grants and contracts oversight processes and determined that it was not cost-effective to establish a formal Recapture Audit Program. NSF submitted its plan for meeting the requirements of recapture audits on January 14, 2011, to OMB and NSF's Office of Inspector General

(OIG), including the reasons for a cost-effective determination. On September 29, 2011, NSF sent a follow-up to OMB reiterating its determination. NSF is leveraging its existing oversight policies and procedures to meet the intent of OMB's requirements on improper payments.

Financial System Strategy

NSF is implementing an agency-wide strategic initiative to replace its aging financial system to a fully integrated financial management solution. *iTRAK* will replace the current Financial Accounting System (FAS) which is now over 20 years old and is becoming technically and functionally outdated. *iTRAK* will provide NSF with state-of-the-art, user-friendly financial management capabilities that ensure stewardship of agency resources in support of excellence in science and engineering research and education. NSF is modernizing its financial management capabilities with a commercial-off-the-shelf (COTS) core financial management system and key interfaces in a hosted environment. This solution will increase the agency's ability to make more informed operational and programmatic decisions, improve effectiveness and efficiency of financial and business processes, and enhance financial and business accountability, integrity, and compliance.

The *iTRAK* strategy incorporates the guidance contained in OMB Memorandum M-10-26, *Immediate Review of Financial Systems IT Projects*, and the project has been scoped to meet the following guiding principles set forth in the memo: (1) split projects into smaller, simpler segments with clear deliverables, with overall implementation not to exceed 24 months and (2) focus on most critical business needs first. The following functional areas were determined by NSF management and leadership to be within scope: core financials (general ledger, budget execution, payment management, receivables, costing, and reporting); key interfaces; and data readiness.

To ensure compliance with OMB Memorandum M-10-26, NSF will also implement a COTS system that is compliant with Federal Financial System guidance and requirements, including OMB Circular A-127, *Financial Management Systems*, and the Tax Increase Prevention and Reconciliation, Government-wide Accounting and Reporting Program (*TIPRA, GWA)*. Currently, NSF is in the Planning and Acquisition phase of the project and expecting to award an implementation contract in FY 2012. Planning activities have included:

- set-up the project governance structure, which includes the *iTRAK* co-leads, *iTRAK* Program Management Office (PMO), and an *iTRAK* Advisory Group;
- conducted market research to understand industry best practices, available software options, and associated costs;
- developed a communications plan and conducted stakeholder outreach activities that include an *iTRAK* website, *iTRAK* newsletter, town hall meetings, and stakeholder questionnaire;
- documented as-is business processes; developed to-be business processes and requirements; documenting interfaces;
- developed a data clean-up strategy; executed data clean-up tasks for existing NSF Financial Accounting System (FAS) data to prepare for migration to the new system;
- developed the business case and performed an alternatives analysis for implementing *iTRAK*;
- submitted the OMB Exhibit 300 budget requests for FY 2010–FY 2013;
- developed the acquisition strategy and all associated documents for the acquisition package, which include the Acquisition Plan, Evaluation Plan, Independent Government Cost Estimate (IGCE), and the Statement of Work (SOW).

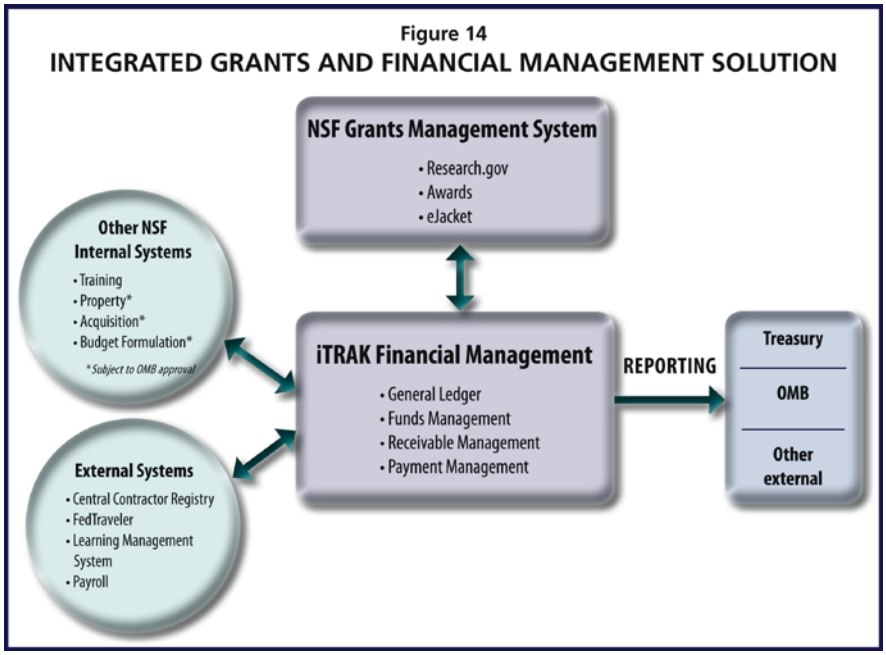
As NSF moves into the implementation phase in FY2012, activities will include continuing data clean-up; awarding the *iTRAK* Indefinite Delivery/Indefinite Quantity (IDIQ) contract and first Task Order; developing a new account code structure; beginning implementation of COTS financial system by performing configuration workshops and a gap analysis; conducting conference room pilots; beginning development of interfaces to NSF and federal systems; and continuing stakeholder outreach and communication activities.

Financial Management Systems Framework

In the current environment, core functionality (general ledger, funds management, receivables, and cost accounting) is provided in a single module within the FAS. *iTRAK* modernizes NSF's current financial management environment by providing an integrated financial management and business solution. In the future environment, core functionality will include general ledger, funds management, receivables, and costing as well as payments management. *Research.gov* will be integrated with the payments management module of the COTS core financials application. The COTS core financials application will also include a reporting module. Systems integrated with FAS in the current environment will be integrated with the COTS Core Financials application in the future environment.

iTRAK will automate labor-intensive manual business processes and will comply with revised OMB Circular A-127 requirements mandating use of COTS systems for core financials and adoption of standard government business practices and requirements. *iTRAK* will enable NSF to achieve process efficiencies and economies of scale in financial management operations and the provision of timely, accurate financial data for decision-making. The use of a shared service provider (SSP) will allow for more efficient operations and maintenance as costs will be shared among SSP customers. This will also help ensure that the system remains up to date with all federal financial system requirements. Integration of the property, acquisition, and budget formulation systems with the COTS core financials application will occur in later phases after successful implementation of core financials and key interfaces. A high-level conceptual system interface architecture that highlights general *iTRAK* system boundaries appears in Figure 14.

Figure 14
INTEGRATED GRANTS AND FINANCIAL MANAGEMENT SOLUTION



Chapter 2

Financials

Credit: Sandy Schaeffer

A MESSAGE FROM THE CHIEF FINANCIAL OFFICER

I am pleased to report that for fiscal year (FY) 2011 the National Science Foundation (NSF) received its fourteenth consecutive unqualified audit opinion, affirming that NSF's financial statements for the year ended September 30, 2011, were presented fairly in all material respects and in conformity with U.S. generally accepted accounting principles. The audit report included no material weaknesses. In addition, the report no longer includes the prior year significant deficiency related to the monitoring of cost reimbursement contracts, primarily as a result of NSF's efforts to obtain incurred cost audits for high-risk contracts to ensure the reasonableness and accuracy of costs paid on contracts. However, the audit report includes a significant deficiency on cooperative agreements with contingency funding. Although management has expressed disagreement with the auditor's conclusions, NSF will continue to work towards reaching agreement and resolving the concerns reported.

In an environment of increasing fiscal austerity, NSF is working to incorporate performance and accountability into all its operations and programmatic activities. We are committed to improving efficiency, maintaining a robust internal control program, and providing timely and reliable information to enable smarter, more effective management and resource allocation decisions. Notable accomplishments during the year include the following:

- In compliance with OMB Circular A-123, we conducted our annual assessment of the effectiveness of internal controls over financial reporting. Based on the results of a review of key financial processes and the testing of key internal controls, the Director is able to provide reasonable assurance that NSF's internal controls over financial reporting are operating effectively.

- Management of our American Recovery and Reinvestment Act (ARRA) portfolio continued to be a priority in FY 2011. Establishment of a robust, comprehensive review program for recipient reporting resulted in a 99 percent compliance rate over the last seven reporting quarters. NSF was recognized as a leader in recipient reporting by both the Office of Management and Budget and the Recovery Accountability and Transparency Board. NSF is an important agency in the Administration's ARRA implementation efforts because advancements in technology resulting from fundamental research are a major driver in the long-term growth and overall strength of the American economy.

- Significant progress was made on NSF's *iTRAK* initiative to replace an aging financial system with a fully integrated financial management solution. Planning activities in FY 2011 included conducting market research to understand industry best practices, available software options, and associated costs; conducting stakeholder outreach activities, including a website, newsletter, town hall meetings, and questionnaires; documenting current processes and developing future processes, requirements, and interfaces; developing and executing data clean-up tasks for the existing financial accounting

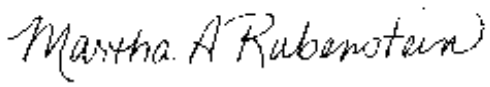
system in preparation for migration to a new system; and developing the acquisition strategy including the acquisition plan, evaluation plan, cost estimate, and statement of work. A competitive Request for Proposals has now been issued to potential industry and government service providers and an implementation contract is expected to be awarded in FY 2012.

- In an ongoing effort to improve grant administration, significant upgrades were made to the suite of policy, procedures, and award terms and conditions in order to align with major changes in federal regulations, legislative mandates, and NSF-specific requirements. In conjunction with the Office of Inspector General, our audit resolution policy has been upgraded and will be strengthened by on-going dialogue. As part of our post-award monitoring effort, the number of site visits conducted by the Award Monitoring and Business Assistance Program (AMBAP) increased to 26 in FY 2011. The AMBAP site visit focuses on the awardee's general financial and management systems and awardee understanding and compliance with the requirements of its award agreement and federal regulations.

- Contract administration remains a critical function for NSF. As such, NSF has taken a comprehensive approach to improving in this area, through both policy and human capital initiatives. Guidance in the *Contract Manual* has been strengthened to address policy gaps related to cost reimbursement contracting. Also, onsite training was established to address acquisition personnel competency gaps in both requirements definition and contract monitoring.

A more detailed discussion of these activities and others appears elsewhere in this report. NSF's *FY 2011 Annual Financial Report* also includes a brief discussion of our efforts in implementing the GPRA Modernization Act of 2010. The results of our FY 2011 performance goals will be discussed in our *Agency Performance Report*, which will be included in NSF's *FY 2013 Budget Request to Congress*. The congressional budget will be available in February 2012.

Moving forward, we are working to develop a workforce that is agile and multi-skilled, equipped with the right tools and technology to meet the complexity of new challenges. Sound financial management and effective operations enable NSF to pursue the critical investments in science and engineering research and education that help ensure our nation's security and economic future. As always, I welcome your feedback on how we can make this report more informative to our stakeholders and readers.



Martha A. Rubenstein
Chief Financial Officer and
Director, Office of Budget, Finance and Award Management

November 15, 2011

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

November 14, 2011

TO: Dr. Subra Suresh
Director, National Science Foundation

Dr. Ray M. Bowen
Chair, National Science Board

FROM: Allison Lerner
Inspector General, National Science Foundation

SUBJECT: Audit of the National Science Foundation's
Fiscal Years 2011 and 2010 Financial Statements

This memorandum transmits Clifton Gunderson LLP's financial statement audit report of the National Science Foundation (NSF) for Fiscal Years 2011 and 2010.

Results of Independent Audit

The Chief Financial Officer's (CFO) Act of 1990 (P.L. 101-576), as amended, requires NSF's Inspector General or an independent external auditor, as determined by the Inspector General, to audit NSF's financial statements. Under a contract monitored by the Office of Inspector General (OIG), Clifton Gunderson LLP, an independent public accounting firm, performed an audit of NSF's Fiscal Years 2011 and 2010 financial statements. The contract required that the audit be performed in accordance with the Government Auditing Standards issued by the Comptroller General of the United States, and Bulletin 07-04, *Audit Requirements for Federal Financial Statements,* as amended, issued by the United States Office of Management and Budget (OMB).

Clifton Gunderson LLP issued an unqualified opinion on NSF's financial statements. In its Report on Internal Control over Financial Reporting, Clifton Gunderson LLP reported a significant deficiency related to NSF's monitoring of construction type cooperative agreements and did not report any material weaknesses in internal control. As we have communicated with NSF management and the awardees during the recently completed audit work, we will continue to work closely with NSF management and the Defense Contract Audit Agency (DCAA) as DCAA examines additional proposal information, including contingency funds. Clifton Gunderson LLP also reported that there were no reportable instances in which NSF's financial management systems did not substantially comply with the requirements of the Federal Financial Management Improvement Act of 1996 (FFMIA). Finally, Clifton Gunderson LLP found no reportable instances of noncompliance with laws and regulations it tested.

In its FY 2010 Report, Clifton Gunderson LLP reported a significant deficiency related to NSF's monitoring of cost reimbursement contracts. However, as noted in Exhibit II to its report, Clifton Gunderson LLP determined that in FY 2011 NSF substantially addressed the conditions that led to the reporting of this issue as a significant deficiency. As a result, Clifton Gunderson LLP no longer considers this condition to be a significant deficiency for purposes of its Audit Report, but will report the remaining conditions related to this issue in a separate letter to NSF management. Additionally, the OIG encourages NSF management to continue to implement its remaining planned corrective actions to ensure that it maintains adequate control over cost reimbursement contracts.

NSF management's response, dated November 11, 2011, follows Clifton Gunderson LLP's report.

Evaluation of Clifton Gunderson LLP's Audit Performance

To fulfill our responsibilities under the CFO Act of 1990, as amended, and other related federal financial management requirements, the OIG:

- Reviewed Clifton Gunderson LLP's approach and planning of the audit;
- Evaluated the qualifications and independence of the auditors;
- Monitored the progress of the audit at key points;
- Coordinated periodic meetings with NSF management to discuss audit progress, findings, and recommendations;
- Reviewed Clifton Gunderson LLP's audit report to ensure compliance with Government Auditing Standards and OMB Bulletin No. 07-04, as amended; and
- Coordinated issuance of the audit report.

Clifton Gunderson LLP is responsible for the attached auditor's report dated November 11, 2011, and the conclusions expressed in the report. We do not express any opinion on NSF's financial statements or conclusions on the effectiveness of internal control, on compliance with laws and regulations, or on whether NSF's financial management systems substantially complied with FFMIA.

The Office of Inspector General appreciates the courtesies and cooperation NSF extended to Clifton Gunderson LLP and OIG staff during the audit. If you or your staff has any questions, please contact me or Dr. Brett M. Baker, Assistant Inspector General for Audit on 703-292-2985.

Attachment

cc: Mr. Arthur K. Reilly, Chair, Audit and Oversight Committee

Clifton Gunderson LLP
Certified Public Accountants & Consultants

Independent Auditor's Report

Inspector General, National Science Foundation
Director, National Science Foundation
Chair of National Science Board

In our audit of the National Science Foundation (NSF) for fiscal year (FY) 2011 we found:

- The balance sheets of NSF as of September 30, 2011 and 2010, and the related statements of net cost, changes in net position, and budgetary resources for the years then ended (hereinafter referred to as "consolidated financial statements") are presented fairly, in all material respects, in conformity with accounting principles generally accepted in the United States of America;
- No material weaknesses in internal control over financial reporting (including safeguarding assets) and compliance with laws and regulations, although internal control could be improved;
- Progress has been made in FY 2011 on the significant deficiency condition noted in the FY 2010 auditor's report; however, one of the conditions detailed in that report continues to exist and is reported herein as a significant deficiency; and
- No reportable instances of noncompliance with laws and regulations we tested, including the Federal Financial Management Improvement Act of 1996 (FFMIA).

The following sections discuss in more detail: (1) these conclusions, (2) our conclusions on Management's Discussion and Analysis (MD&A) and other supplementary information, (3) our audit objectives, scope and methodology, and (4) agency comments and our evaluation.

OPINION ON FINANCIAL STATEMENTS

In our opinion, the accompanying financial statements including the accompanying notes present fairly, in all material respects, in conformity with accounting principles generally accepted in the United States, NSF's assets, liabilities, and net position as of September 30, 2011 and 2010; and net costs; changes in net position; and budgetary resources for the years then ended.

CONSIDERATION OF INTERNAL CONTROL

In planning and performing our audit, we considered NSF's internal control over financial reporting as a basis for designing our auditing procedures and to comply with the Office of Management and Budget (OMB) audit guidance for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control over financial reporting. Accordingly, we do not express an opinion on the effectiveness of the entity's internal control over financial reporting or on management's assertion on internal control included in the MD&A.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent or detect misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A significant deficiency is a deficiency or a combination of deficiencies in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance. We consider the deficiency described in Exhibit I to be a significant deficiency in internal control over financial reporting.

Our consideration of internal control over financial reporting was for the limited purpose described in the first paragraph of this section and would not necessarily disclose all significant deficiencies that are also considered to be material weaknesses. However, we do not believe that the significant deficiency described in Exhibit I is a material weakness.

We also noted certain other non-reportable matters involving internal control and its operation that we will communicate in a separate letter to NSF management.

SYSTEMS' COMPLIANCE WITH FFMIA REQUIREMENTS

Under the Federal Financial Management Improvement Act of 1996 (FFMIA), we are required to report whether the financial management systems used by NSF substantially comply with the Federal financial management systems requirements, applicable Federal accounting standards, and the United States Standard General Ledger (SGL) at the transaction level. To meet this requirement, we performed tests of compliance with FFMIA Section 803(a) requirements.

The objective of our audit was not to provide an opinion on compliance with FFMIA. Accordingly, we do not express such an opinion. However, our work disclosed no instances in which NSF's financial management systems did not substantially comply with Federal financial management systems requirements, Federal accounting standards or the SGL at the transaction level.

COMPLIANCE WITH LAWS AND REGULATIONS

Our tests of NSF's compliance with selected provisions of laws and regulations for FY 2011 disclosed no instances of noncompliance that would be reportable under United States generally accepted government auditing standards or OMB audit guidance. However, the objective of our audit was not to provide an opinion on overall compliance with laws and regulations. Accordingly, we do not express such an opinion.

STATUS OF PRIOR YEAR'S CONTROL DEFICIENCY

As required by United States generally accepted government auditing standards and OMB Bulletin No. 07-04, as amended, we have reviewed the status of NSF's corrective actions with respect to the finding and recommendations included in the prior year's Independent Auditor's Report dated November 11, 2010.

The prior year audit report noted one control deficiency: *Monitoring of Cost Reimbursement Contracts*. Even though NSF made improvements in its contract monitoring policies and

procedures in FY 2011, continued improvements are needed to address the matter relating to Cooperative Agreements detailed in an NSF Office of Inspector General (OIG) FY 2010 report. Accordingly, this remaining matter, along with additional findings noted in similar reports issued by the OIG in FY 2011, is included in this report (**Exhibit I**) as a significant deficiency.

Exhibit II summarizes the prior year conditions for which NSF has implemented changes to its policies and procedures to substantially resolve such conditions and, accordingly, which are no longer considered a Significant Deficiency for purposes of this report.

CONSISTENCY OF OTHER INFORMATION

NSF Management's Discussion and Analysis (MD&A) and other required supplementary information contains a wide range of information, some of which is not directly related to the financial statements. We compared this information for consistency with the financial statements and discussed the methods of measurement and presentation with NSF officials. Based on this limited work, we found no material inconsistencies with the financial statements, accounting principles generally accepted in the United States, or OMB guidance. However, we do not express an opinion on this information.

Other information, exclusive of the MD&A and the Financial Statements sections listed in the table of contents of the FY 2011 Agency Financial Report, is presented for additional analysis and is not a required part of the financial statements. Such information has not been subjected to the auditing procedures applied in the audit of the financial statements and, accordingly, we express no opinion on it.

OBJECTIVES, SCOPE AND METHODOLOGY

NSF management is responsible for (1) preparing the financial statements in conformity with accounting principles generally accepted in the United States, (2) establishing, maintaining, and assessing internal control to provide reasonable assurance that the broad control objectives of the Federal Managers' Financial Integrity Act (FMFIA), are met, (3) ensuring that NSF's financial management systems substantially comply with FFMIA requirements, and (4) complying with other applicable laws and regulations.

We are responsible for obtaining reasonable assurance about whether the financial statements are presented fairly, in all material respects, in conformity with accounting principles generally accepted in the United States. We are also responsible for: (1) obtaining a sufficient understanding of internal control over financial reporting and compliance to plan the audit, (2) testing whether NSF's financial management systems substantially comply with the three FFMIA requirements, (3) testing compliance with selected provisions of laws and regulations that have a direct and material effect on the financial statements and laws for which OMB audit guidance requires testing, and (4) performing limited procedures with respect to certain other information appearing in the Agency Financial Report.

In order to fulfill these responsibilities, we (1) examined, on a test basis, evidence supporting the amounts and disclosures in the financial statements, (2) assessed the accounting principles used and significant estimates made by management, (3) evaluated the overall presentation of the financial statements, (4) obtained an understanding of NSF and its operations, including its

internal control related to financial reporting (including safeguarding of assets), and compliance with laws and regulations (including execution of transactions in accordance with budget authority), (5) tested relevant internal controls over financial reporting, and compliance, and evaluated the design and operating effectiveness of internal control, (6) considered the design of the process for evaluating and reporting on internal control and financial management systems under FMFIA, (7) tested whether NSF's financial management systems substantially complied with the three FFMIA requirements, and (8) tested compliance with selected provisions of certain laws and regulations.

We did not evaluate all internal controls relevant to operating objectives as broadly defined by the FMFIA, such as those controls relevant to preparing statistical reports and ensuring efficient operations. We limited our internal control testing to controls over financial reporting and compliance. Because of inherent limitations in internal control, misstatements due to error or fraud, losses, or noncompliance may nevertheless occur and not be detected. We also caution that projecting our evaluation to future periods is subject to risk that controls may become inadequate because of changes in conditions or that the degree of compliance with controls may deteriorate. In addition, we caution that our internal control testing may not be sufficient for other purposes.

We did not test compliance with all laws and regulations applicable to NSF. We limited our tests of compliance to selected provisions of laws and regulations that have a direct and material effect on the financial statements and those required by OMB audit guidance that we deemed applicable to NSF's financial statements for the fiscal year ended September 30, 2011. We caution that noncompliance with laws and regulations may occur and not be detected by these tests and that such testing may not be sufficient for other purposes.

We performed our audits in accordance with auditing standards generally accepted in the United States; the standards applicable to financial audits contained in *Government Auditing Standards,* issued by the Comptroller General of the United States; and OMB guidance. We believe our audits provide a reasonable basis for our opinion.

AGENCY COMMENTS AND OUR EVALUATION

NSF's response to the findings identified in our audit is described in the accompanying **Exhibit III.** We did not audit NSF's response and, accordingly, we express no opinion on it.

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This report is intended solely for the information and use of NSF's management, the National Science Board, NSF's Office of Inspector General, OMB, the Government Accountability Office, and the U.S. Congress, and is not intended to be, and should not be, used by anyone other than these specified parties.

Clifton Gunderson LLP

Calverton, Maryland
November 11, 2011

EXHIBIT I

NATIONAL SCIENCE FOUNDATION
CONSIDERATION OF INTERNAL CONTROL
SIGNIFICANT DEFICIENCY
September 30, 2011

Monitoring of Construction Type Cooperative Agreements

***Background and Control Deficiency Criteria*:**
As of September 30, 2011, NSF had 14 active cooperative agreements totaling about $1.9 billion that included about $334 million in contingency funds, or 18 percent of the total award amount. For FY 2011, cooperative agreement awardees had received NSF funds of approximately $151 million in contingency costs, which are of higher risk to be disallowed once subjected to audit.

In our FY 2010 Audit Report, we noted that a Defense Contract Audit Agency (DCAA) report, issued on behalf of the NSF OIG, questioned the allowability of $88 million of contingency costs included in a proposed budget (total proposal of $386 million) related to a large construction Cooperative Agreement proposal. Unallowable "contingency" costs in construction type Cooperative Agreements are defined in the Cost Principles section of Title 2 Code of Federal Regulations.

OMB Circular A-50, *Audit Follow Up*, requires the resolution of audit findings to take place within six months of report issuance. However, certain findings in the FY 2010 DCAA report remain unresolved. In FY 2011, DCAA issued audit reports/memoranda on three other NSF awardees that identified similar issues. These repeated findings continue to bring into question the adequacy of NSF's proposal review process and ongoing monitoring of its awardees cost accounting activities, especially with respect to costs allocated to contingency funding activities. Contingency costs approximated $138 million for these awardees.

In summary, the four audit reports and memoranda issued by DCAA in FY 2010 and 2011 disclosed a number of discrepancies relating to NSF's Cooperative Agreement award and monitoring process. The significant findings in those reports were as follows:

- There was a lack of adequate documentation for proposal cost amounts under audit for two of NSF's awardees,
- Contingency costs reflected in proposals for three awardees were noted as unallowable under federal cost principles, and
- In two Cooperative Agreements, the awardee can draw down contingency funds without advance approval by NSF.

In addition, other tests of internal controls that we performed to evaluate NSF's monitoring of contingency funds also noted weaknesses over use of such funds.

Conditions:

The following paragraphs describe the specific conditions that exist at September 30, 2011.

1. **DCAA Audits on Cooperative Agreements with Contingency Funds**

   As noted in our FY 2010 audit report, DCAA determined that $88 million in contingency costs (total proposal of $386 million) were unallowable based on cost principles specified in Title 2 Code of Federal Regulations (CFR). The awardee stated that the contingency costs were required by NSF and that such costs could only be used if the awardee overruns the budget due to "unforeseeable factors." Such costs do not meet the definition of "contingency" costs. DCAA also noted that the awardee could draw down the contingency funds in the same manner as normal funds (i.e. without NSF's advance approval). Accordingly, DCAA concluded that controls were insufficient for this special type of funding. NSF management deferred resolving this finding until the OIG completes a performance audit on contingency funds, which is not yet completed. Even though NSF management worked with the OIG on these matters throughout the year, direct meetings were not held between NSF and DCAA until September 21, 2011, almost a year after the initial DCAA report was issued.

   In April 2011, the OIG provided a DCAA inadequacy memorandum relating to an audit of a $298 million Cooperative Agreement construction proposal to NSF, which stated that the proposal was unacceptable for audit due to the lack of adequate supporting documentation. The proposed costs also included $62 million of "contingency" costs. DCAA specifically indicated that the contingency costs were unallowable both because they did not appear to reflect allowable "contingency" costs pursuant to federal cost principles and adequate supporting documentation was not available for their review.

   In September 2011, DCAA issued another inadequacy memorandum to the OIG relating to its attempted audit of a $434 million construction project proposal. The DCAA memorandum noted a lack of documentation for the $76 million of contingency costs included in this proposal, and stated that these costs were unallowable pursuant to federal cost principles.

   NSF management met during the past year with the NSF OIG to discuss the contingency issue in general, as well as the specific DCAA issues with the various awardees. In September 2011 NSF management met directly with representatives of both the NSF OIG and DCAA together to discuss the findings in the three cost proposal audits. The following is a brief summary of the results of that meeting:

   - DCAA confirmed that contingency costs that are expected to be incurred can be included in the proposal as long as they are supported by adequate verifiable cost data and can be estimated with some degree of reliability, as defined by federal cost principles.
   - NSF management continued to dispute DCAA's "lack of cost proposal documentation" findings and requested the opportunity to work with the OIG, DCAA and the awardees to ensure that the awardees provide the information required by DCAA to reconsider its audit findings.
   - DCAA agreed to re-evaluate the results of its three cost proposal audits, if the awardees provide additional adequate supporting data for the proposal amounts. Accordingly, a meeting was held in October 2011 between NSF management, NSF OIG and DCAA to begin this re-evaluation process.

2. **DCAA Audit on Awardee Accounting System and Estimating Practices**

In March 2011, DCAA issued a report on an audit of the accounting system and estimating practices of an NSF Cooperative Agreement awardee. This awardee was also audited for supporting documentation of proposal contingency costs referred to in condition number one above. DCAA's examination disclosed eight deficiencies in the awardee's accounting system and estimating practices that could result in misstated costs, and therefore deemed the awardee's accounting system and estimating practices unacceptable for award. In addition, DCAA found that the awardee could draw down contingency funds without NSF's prior approval.

NSF management did issue a timely audit resolution memo in response to this DCAA audit report. NSF accepted the corrective actions implemented or planned by the awardee. Such actions\plans included the awardee's plan to develop estimating policies and procedures that would include addressing the scope and nature of the estimating process including timeliness of quotes, content, basis of estimates, and cost/price analysis, consistent with the requirements of 2 CFR 215.45. NSF has indicated that it will review the awardee's implementation of its revised policies and procedures in connection with its normal Business System Review process, planned for FY 2012.

3. **Internal Controls for Monitoring Use of Contingency Funds**

In addition to DCAA's audits, we examined five Cooperative Agreements with contingency funds, noting the following exceptions:

- Awardees can draw down on the contingency funds budget without prior NSF approval, and there are no systematic barriers to prevent them from doing so.
- Even though NSF had a manual control requiring prior approval by NSF for draw downs of contingency costs over $250,000, it had not yet implemented this control on two of the Cooperative Agreements examined. Accordingly, prior to the control being put into place, NSF had not independently reviewed and approved the use of the contingency funds prior to disbursement. This allowed the awardee to incur costs against the contingency funds without having to provide support for those costs to show that they were reasonable, allowable, or allocable.
- For one cooperative agreement examined, the Awardee had not been reporting the allocation of the contingency budget to specific project elements to NSF monthly, as required by NSF. This lack of information on how the contingency funds are being spent limits NSF management's ability to assess how and when the contingency funds are being used.

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In summary, the DCAA's audits performed in the last two years and our other internal control tests, collectively indicate there is significant risk concerning cooperative agreements with budgeted contingency funds in terms of the validity of cost proposals, the allowability of contingency funds budgeted, and the adequacy of NSF's controls over the use of contingency funds. NSF has approximately $1.9 billion in cooperative agreements outstanding, which include contingency funds budgeted of approximately $334 million. In FY 2011, approximately $151 million of this amount had been drawn by the awardees. The OIG is currently conducting a performance audit on NSF's oversight of contingency funds for one completed project, which consisted of three cooperative agreements, and expects to issue its report in March 2012.

Recommendations:

We recommend that NSF focus its efforts in the following areas:

1. NSF management should develop a formal plan to obtain timely audit status information from the OIG and its audit contractors (i.e. DCAA or other auditors) on all audits of proposed contingency costs in construction type cooperative agreements. Such plan should ensure NSF management has the opportunity to participate in key discussions with both the OIG and its audit contractors before final audit reports are issued. This should help to expedite the audit resolution process.
2. NSF should reemphasize to its Cooperative Agreement awardees that it must maintain proposal cost data in accordance with OMB A-110. Such data should be in a format that both reconciles to the underlying database and is auditable, and failure to do so should result in suspension of draw down privileges.
3. Once DCAA issues a supplemental report, or reconfirms the original findings, for the three cost proposal audits previously completed, NSF should develop a plan to resolve DCAA's final audit findings immediately, or within 6 months after the original audit report\memorandum was issued, as applicable. Based on the results of these supplemental DCAA audits, NSF should revise its proposal review process as needed.
4. NSF should reevaluate the effectiveness of its controls over the awardee draw down of contingency funds and ensure that all of its cooperative agreements provide adequate controls and oversight procedures to reduce the risk of funds being used for unallowable purposes.
5. NSF should ensure that all cooperative agreements with contingency funding contain a requirement for NSF approval in advance of individual expenditures of contingency funds that exceed a prescribed cost threshold.
6. NSF should establish and implement a standard monthly report format which requires awardees to allocate the contingency budget authority to specific project elements.

EXHIBIT II

NATIONAL SCIENCE FOUNDATION
INDEPENDENT AUDITOR'S REPORT
STATUS OF PRIOR YEAR CONTROL DEFICIENCY
September 30, 2011

Prior Year Control Deficiency	Status As Reported at September 30, 2010	Status as of September 30, 2011
1. Monitoring of Cost Reimbursement Contracts	1. Cost Incurred Audits (CIA) were not being performed in a timely manner for its large volume and\or high risk contractors.	1. CIAs are either in progress, scheduled, or requested for NSF's large volume and high risk contractors. Even though NSF needs to continue to monitor the progress of these CIAs and to continue to require them on an ongoing basis, this matter is no longer considered a Significant Deficiency.
	2. Documentation and Effectiveness of Oversight Procedures: a) Implementation of Contracting Manual improvements were needed. b) Routine oversight procedures needed to be strengthened. NSF OIG reports and communications needed to be addressed.	2. a/b) NSF has made substantial progress and implemented changes to its policies and procedures in this area. Accordingly, these matters are no longer considered a Significant Deficiency. c) Continued improvements are needed related to a matter detailed in an OIG FY 2010 report concerning the monitoring of cooperative agreement awards. Additional OIG reports were issued in FY 2011 noting similar conditions to those reported in FY 2010. Accordingly, this specific matter is repeated and included in **Exhibit I** as a standalone Significant Deficiency for FY 2011.

EXHIBIT III

NATIONAL SCIENCE FOUNDATION
MANAGEMENT'S RESPONSE TO FY 2011
INDEPENDENT AUDITOR'S REPORT
November 11, 2011

NATIONAL SCIENCE FOUNDATION

OFFICE OF BUDGET, FINANCE & AWARD MANAGEMENT

MEMORANDUM

Date: NOV 11 2011

To: Allison Lerner, Inspector General

From: Martha A. Rubenstein, Chief Financial Officer

Subject: Management's Response to Independent Auditor's Report for Fiscal Year 2011

I am pleased to respond to the National Science Foundation's (NSF) Fiscal Year (FY) 2011 Financial Statements Audit Report. For the fourteenth consecutive year we have achieved an unqualified audit opinion on the financial statements. The dedication and outstanding effort by NSF staff in support of the financial statement audit was critical in accomplishing the unqualified opinion. I commend my staff's efforts in addressing the prior year significant deficiency on contract monitoring of cost reimbursement contracts. I also appreciate the cooperation and professionalism displayed by your staff and Clifton Gunderson (CG) throughout the audit.

This year the Audit Report contains a new significant deficiency related to construction type cooperative agreements with budgeted contingency amounts. We continue to believe that inclusion of contingency funding in proposal budgets for large facility construction projects is valid and allowable under established Office of Management and Budget guidelines. In addition, as stated in the Financial Statement Audit Report, the auditors are revisiting the findings in their cost proposal audits and re-evaluating the results, which may impact their conclusions on whether certain contingency costs are allowable. Although we do not concur with the significant deficiency, NSF is committed to developing a mutually acceptable solution.

To achieve this mutually acceptable solution, we believe it is important that the OIG partner with us to work on the following issues, given the OIG's responsibility for managing the audit process:

- Improving coordination of management's support of audits of proposed contingency costs, including participation in key discussions and sharing timely audit information.
- Increasing communication among the OIG, management, and the awardee concerning the types of issues being identified during an audit.
- Developing a better understanding of the documentation required to complete the audit and criteria used for evaluation.

National Science Foundation

Principal Financial Statements

As of and for the years ended
September 30, 2011 and 2010

National Science Foundation
Balance Sheet
As of September 30, 2011 and 2010
(Amounts in Thousands)

Assets		**2011**		**2010**
Intragovernmental Assets				
Fund Balance With Treasury (Note 2)	$	12,175,088	$	12,458,688
Accounts Receivable		10,726		14,390
Advances		69,228		9,782
Total Intragovernmental Assets		12,255,042		12,482,860
Cash and Other Monetary Assets		51,380		44,683
Accounts Receivable, Net		186		126
General Property, Plant and Equipment, Net (Notes 3 and 4)		278,126		276,754
Total Assets	**$**	**12,584,734**	**$**	**12,804,423**
Liabilities				
Intragovernmental Liabilities				
Advances From Others	$	20,773	$	42,224
Employer Contributions		550		1,612
FECA Employee Benefits		345		340
Other Intragovernmental Liabilities		984		3,000
Total Intragovernmental Liabilities		22,652		47,176
Accounts Payable		54,016		55,709
FECA Employee Benefits		1,272		1,356
Accrued Liabilities - Grants		437,269		440,796
Accrued Liabilities - Contracts and Payroll		48,645		33,560
Accrued Annual Leave		17,269		17,413
Total Liabilities	**$**	**581,123**	**$**	**596,010**
Net Position				
Unexpended Appropriations - Other Funds	$	11,330,889	$	11,548,234
Cumulative Results of Operations - Earmarked Funds (Note 6)		324,083		335,454
Cumulative Results of Operations - Other Funds		348,639		324,725
Total Net Position		12,003,611		12,208,413
Total Liabilities and Net Position	**$**	**12,584,734**	**$**	**12,804,423**

The accompanying notes are an integral part of these statements.

National Science Foundation
Statement of Net Cost
For the Years Ended September 30, 2011 and 2010
(Amounts in Thousands)

Program Costs		**2011**		**2010**
Research and Related Activities				
Gross Costs	$	6,004,357	$	5,871,545
Less: Earned Revenues		(110,458)		(93,667)
Net Research and Related Activities		**5,893,899**		**5,777,878**
Education and Human Resources				
Gross Costs	$	836,755	$	775,422
Less: Earned Revenues		(8,350)		(8,859)
Net Education and Human Resources		**828,405**		**766,563**
Major Research Equipment and Facilities Construction				
Gross Costs	$	261,705	$	178,840
Less: Earned Revenues		-		-
Net Major Research Equipment and Facilities Construction		**261,705**		**178,840**
Costs Not Assigned to Other Programs				
Gross Costs	$	155,985	$	171,825
Less: Earned Revenues		-		-
Net Costs Not Assigned to Other Programs		**155,985**		**171,825**
Net Cost of Operations (Notes 7 and 13)	**$**	**7,139,994**	**$**	**6,895,106**

The accompanying notes are an integral part of these statements.

National Science Foundation
Statement of Changes in Net Position
For the Year Ended September 30, 2011
(Amounts in Thousands)

	2011		
	Earmarked	**All Other**	**Total**
Cumulative Results of Operations			
Beginning Balances (Note 6)	$ 335,454	324,725	660,179
Budgetary Financing Sources			
Appropriations Used	-	6,982,432	6,982,432
Non-exchange Revenue	-	118	118
Donations	-	53,036	53,036
Appropriated Earmarked Receipts Transferred In (Note 6)	104,780	-	104,780
Other Financing Sources			
Imputed Financing From Costs Absorbed By Others	-	12,475	12,475
Other	-	(304)	(304)
Total Financing Sources	**104,780**	**7,047,757**	**7,152,537**
Net Cost of Operations (Notes 6 and 7)	**(116,151)**	**(7,023,843)**	**(7,139,994)**
Cumulative Results of Operations (Note 6)	**$ 324,083**	**348,639**	**672,722**
Unexpended Appropriations			
Beginning Balances	$ -	**11,548,234**	**11,548,234**
Budgetary Financing Sources			
Appropriations Received	-	6,873,615	6,873,615
Appropriations Transferred In / (Out)	-	(53,892)	(53,892)
Other Adjustments	-	(54,636)	(54,636)
Appropriations Used	-	(6,982,432)	(6,982,432)
Total Budgetary Financing Sources	-	**(217,345)**	**(217,345)**
Total Unexpended Appropriations	-	**11,330,889**	**11,330,889**
Net Position	**$ 324,083**	**11,679,528**	**12,003,611**

The accompanying notes are an integral part of these statements.

National Science Foundation
Statement of Changes in Net Position
For the Year Ended September 30, 2010
(Amounts in Thousands)

	2010		
	Earmarked	**All Other**	**Total**
Cumulative Results of Operations			
Beginning Balances (Note 6)	$ 355,872	309,722	665,594
Budgetary Financing Sources			
Appropriations Used	-	6,730,584	6,730,584
Non-exchange Revenue	-	229	229
Donations	-	54,300	54,300
Appropriated Earmarked Receipts Transferred In (Note 6)	91,221	-	91,221
Other Financing Sources			
Imputed Financing From Costs Absorbed By Others	-	13,066	13,066
Other	-	291	291
Total Financing Sources	**91,221**	**6,798,470**	**6,889,691**
Net Cost of Operations (Notes 6 and 7)	**(111,639)**	**(6,783,467)**	**(6,895,106)**
Cumulative Results of Operations (Note 6)	**$ 335,454**	**324,725**	**660,179**
Unexpended Appropriations			
Beginning Balances	**$ -**	**11,439,991**	**11,439,991**
Budgetary Financing Sources			
Appropriations Received	-	6,926,510	6,926,510
Appropriations Transferred In / (Out)	-	(54,000)	(54,000)
Other Adjustments	-	(33,683)	(33,683)
Appropriations Used	-	(6,730,584)	(6,730,584)
Total Budgetary Financing Sources	**-**	**108,243**	**108,243**
Total Unexpended Appropriations	**-**	**11,548,234**	**11,548,234**
Net Position	**$ 335,454**	**11,872,959**	**12,208,413**

The accompanying notes are an integral part of these statements.

National Science Foundation
Statement of Budgetary Resources (page 1 of 2)
For the Years Ended September 30, 2011 and 2010
(Amounts in Thousands)

	2011	2010
Budgetary Resources		
Unobligated Balance - Brought Forward, October 1	$ 206,534	$ 881,665
Recoveries of Prior Year Unpaid Obligations	148,106	58,155
Budget Authority		
Appropriation	7,031,548	7,072,259
Spending Authority From Offsetting Collections		
Earned		
Collected	122,495	100,185
Change in Receivables From Federal Sources	(3,663)	2,393
Change in Unfilled Customer Orders		
Advance Received	(21,451)	(2,156)
Without Advance From Federal Sources	44,685	5,697
Subtotal - Budget Authority	7,173,614	7,178,378
Nonexpenditure Transfers, Net - Anticipated and Actual	(53,892)	(54,000)
Permanently Not Available	(54,636)	(33,682)
Total Budgetary Resources	**$ 7,419,726**	**$ 8,030,516**
Status of Budgetary Resources		
Obligations Incurred		
Direct (Note 10)	$ 7,056,497	$ 7,715,530
Reimbursable (Note 10)	134,329	108,452
Total Obligations Incurred	7,190,826	7,823,982
Unobligated Balance - Apportioned (Note 2)	125,610	105,102
Unobligated Balance - Not Available	103,290	101,432
Total Status of Budgetary Resources	**$ 7,419,726**	**$ 8,030,516**

The accompanying notes are an integral part of these statements.

National Science Foundation
Statement of Budgetary Resources (page 2 of 2)
For the Years Ended September 30, 2011 and 2010
(Amounts in Thousands)

	2011	2010
Change in Obligated Balances		
Obligated Balance, Net		
Unpaid Obligations - Brought Forward, October 1	$ 12,395,142	$ 11,502,924
Less: Uncollected Customer Payments From Federal Sources - Brought Forward, October 1	(98,305)	(90,215)
Total Unpaid Obligated Balance, Net	12,296,837	11,412,709
Obligations Incurred	7,190,826	7,823,982
Less: Gross Outlays	(7,300,968)	(6,873,609)
Less: Recoveries of Prior Year Unpaid Obligations, Actual	(148,106)	(58,155)
Change in Uncollected Customer Payments From Federal Sources	(41,022)	(8,090)
Subtotal	$ 11,997,567	$ 12,296,837
Obligated Balance, Net - End of Period		
Unpaid Obligations	12,136,893	12,395,142
Less: Uncollected Customer Payments From Federal Sources	(139,326)	(98,305)
Total Unpaid Obligated Balance, Net - End of Period (Note 2)	$ 11,997,567	$ 12,296,837
Net Outlays		
Gross Outlays	7,300,968	6,873,609
Less: Offsetting Collections	(101,044)	(98,030)
Less: Distributed Offsetting Receipts	(53,717)	(55,459)
Net Outlays	**$ 7,146,207**	**$ 6,720,120**

The accompanying notes are an integral part of these statements.

Notes to the Principal Financial Statements

Note 1. Summary of Significant Accounting Policies

A. Reporting Entity

The National Science Foundation (NSF or "Foundation") is an independent federal agency created by the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75). Its mission is to promote and advance scientific progress in the United States. NSF initiates and supports scientific research, research fundamental to the engineering process, and programs to strengthen the Nation's science and engineering potential. NSF also supports education programs at all levels in all fields of science and engineering. NSF funds research and education in science and engineering by awarding grants and contracts to educational and research institutions in all parts of the United States. NSF, by law, cannot operate research facilities except in the polar regions. By award, NSF enters into relationships to fund the research operations conducted by grantees.

NSF is led by a presidentially-appointed Director and the policy-making National Science Board (NSB). The NSB, comprised of 24 members, represents a cross-section of American leaders in science and engineering research and education, who are appointed by the President for six-year terms. The NSF Director is an ex officio member of the Board.

B. Basis of Presentation

These financial statements have been prepared to report the financial position and results of operations of NSF as required by the Chief Financial Officers Act of 1990, the Government Management Reform Act of 1994, the Reports Consolidation Act of 2000, and the Office of Management and Budget (OMB) *Circular A-136, Financial Reporting Requirements*. While the statements have been prepared from the books and records of NSF in accordance with United States generally accepted accounting principles (U.S. GAAP) for federal entities and the formats prescribed by OMB, the statements are in addition to the financial reports used to monitor and control budgetary resources, which are prepared from the same books and records.

C. Basis of Accounting

The accompanying financial statements have been prepared in accordance with U.S. GAAP for federal entities using the accrual method of accounting. Under the accrual method, revenues are recognized when earned and expenses are recognized when a liability is incurred, without regard to receipt or payment of cash. The accompanying financial statements also include budgetary accounting transactions that ensure compliance with legal constraints and controls over the use of federal funds.

D. Revenues and Other Financing Sources

NSF traditionally receives the majority of its funding through appropriations contained in the Commerce, Justice, Science, and Related Agencies Appropriations Act. NSF receives annual, multi-year, and no-year appropriations that may be expended, within statutory limits. NSF also receives funding via warrant from a special earmarked receipt account that is reported as H-1B funds. Additional amounts are obtained from reimbursements for services provided to other federal agencies, as well as from receipts to the donation account. Also, NSF receives interest earned on overdue receivables and excess cash advances to grantees. The interest earned on overdue receivables and excess cash advances to grantees is returned to the Treasury at the end of each fiscal year.

In FY 2011, the Department of Defense and Full-Year Continuing Appropriations Act, 2011 under Public Law 112-10 provided funding for each of NSF's appropriations and an across-the-board rescission. Appropriations are recognized as a financing source at the time the related "funded" program or administrative expenditures are incurred. Appropriations are also recognized when used to purchase property, plant, and equipment (PP&E). "Unfunded" liabilities result from liabilities not covered by budgetary resources and will be paid when future appropriations are made available for these purposes. Donations are recognized as revenues when funds are received. Revenues from reimbursable agreements are recognized when the services are provided and the related expenditures are incurred. Reimbursable agreements are mainly for grant administrative services provided by NSF on behalf of other federal agencies.

Under the general authority of the Foundation, NSF is authorized to accept funds into the NSF Donations Account and to use both U.S. and foreign funds. In accordance with 42 U.S.C. 1862 Section 3 (a)(3), NSF has authority "to foster the interchange of scientific and engineering information among scientists and engineers in the United States and foreign countries" and in 42 U.S.C. 1870 Section 11 (f), NSF is authorized to receive and use funds donated by others. Donations may be received from foreign governments, private companies, academic institutions, non-profit foundations, and individuals. These funds must be donated without restriction other than that they be used in furtherance of one or more of the general purposes of the Foundation. Funds are made available for obligations as necessary to support NSF programs.

E. Fund Balance with Treasury and Cash and Other Monetary Assets

Cash receipts and disbursements are processed by the Treasury. Fund Balance with Treasury is composed primarily of appropriated funds that are available to pay current liabilities and finance authorized purchase commitments. Cash and Other Monetary Assets primarily include non-appropriated funding sources from donations and undeposited collections.

F. Accounts Receivable, Net

Accounts Receivable consists of amounts due from governmental agencies, private organizations, and individuals. Additionally, NSF has the right to conduct audits on awardees to verify billed amounts. These audits may result in monies owed back to NSF. Upon resolution of the amount owed by the awardee to the NSF, a receivable is recorded.

NSF establishes an allowance for loss on accounts receivable from non-federal sources that are deemed uncollectible, but regards amounts due from other federal agencies as fully collectible. NSF analyzes each account independently to assess collectability and the need for an offsetting allowance or write-off. NSF writes off delinquent debt from non-federal sources that is more than two years old.

G. Advances

Advances consist of advances to grantees, contractors, and federal agencies. Advance payments are made to grant recipients so that recipients may incur expenditures related to the approved grant. Payments are only made within the amount of the recorded grant obligation and are intended to cover immediate cash needs. Advances to contractors are payments made in advance of incurring expenditures. Advances to federal agencies are issued when agencies are operating under working capital funds or are unable to incur costs on a reimbursable basis. Advances are reduced when documentation supporting expenditures is received and recorded.

H. General Property, Plant and Equipment

NSF capitalizes Property, Plant and Equipment (PP&E) with costs exceeding $25 thousand and useful lives of two or more years; items not meeting these criteria are recorded as operating expenses. NSF currently reports capitalized PP&E at original acquisition cost; assets acquired from the General Services Administration (GSA) excess property schedules are recorded at the value assigned by the donating agency; assets transferred in from other agencies are at the cost recorded by the transferring entity for the asset net of accumulated depreciation or amortization.

The PP&E balance consists of Equipment, Software, Software in Development, Aircraft and Satellites, Buildings and Structures, Leasehold Improvements, and Construction in Progress (CIP). These balances are comprised of PP&E maintained "in-house" by NSF to support operations and PP&E under the U.S. Antarctic Program (USAP). The majority of USAP property is currently under the custodial responsibility of the NSF prime contractor for the program.

Costs incurred to construct buildings and structures are accumulated and tracked as construction in progress. At 75 percent completion of construction, an onsite Conditional Occupancy inspection is performed to inspect for compliance to the approved plans, design, specifications, and changes. Items that pertain to the safety and health of any future occupants of the facility must be corrected before a Conditional Occupancy is granted and the facility occupied. When Conditional Occupancy is granted, the completed project is transferred from construction in progress to real property or capital equipment and depreciated over the respective useful life of the asset.

Depreciation expense is calculated using the straight-line half-year convention. The economic useful life classifications for capitalized assets are as follows:

Equipment

5 years	Computers and peripheral equipment, fuel storage tanks, laboratory equipment, and vehicles
7 years	Communications equipment, office furniture and equipment, pumps and compressors
10 or 15 years	Generators, Department of Defense equipment
20 years	Movable buildings (e.g. trailers)

Aircraft and Satellites

7 years	Aircraft, aircraft conversions, and satellites

Buildings and Structures

31.5 years	Buildings and structures placed in service prior to 1994
39 years	Buildings and structures placed in service after 1993

Leasehold Improvements

The NSF Headquarter buildings are leased through GSA under an occupancy agreement. The cancellation clause within the agreement allows NSF to terminate use with a 120 day notice. NSF is billed by GSA for the leased space as rent based upon estimated lease payments made by GSA plus an administrative fee. Therefore, the cost of the Headquarter buildings is not capitalized by NSF.

The cost of leasehold improvements performed by GSA is financed with NSF appropriated funds. Amortization is calculated using the straight-line half-year convention upon transfer from construction in progress. In FY 2011, leasehold improvements completed during the year were amortized over two years, the remaining number of years on NSF's lease with GSA.

Internal Use Software

NSF controls, values, and reports purchased or developed software as tangible property assets, in accordance with the Statement of Federal Financial Accounting Standards (SFFAS) No. 10, *Accounting for Internal Use Software*. NSF identifies software investments as accountable property for items that, in the aggregate, cost $500,000 or more to purchase, develop, enhance, or modify a new or existing NSF system. Software projects that are not completed at year end and are expected to exceed the capitalization threshold are recorded as software in development. All internal use software meeting the capitalization threshold is amortized over a 5-year period using the straight-line half-year convention.

Assets Owned by NSF in the Custody of Other Entities: NSF awards grants, cooperative agreements, and contracts to various organizations, including colleges and universities, nonprofit organizations, state and local governments, Federally Funded Research and Development Centers (FFRDCs), and private entities. The funds provided may be used in certain cases to purchase or construct PP&E to be used for operations or research on projects or programs sponsored by NSF. In these instances, NSF funds the acquisition of property, but transfers control of the assets to these entities. NSF's authorizing legislation specifically prohibits the Foundation from operating such property directly.

In practice, NSF's ownership interest in such PP&E is similar to a reversionary interest. To address the accounting and reporting of these assets, specific guidance was sought by NSF and provided by the Federal Accounting Standards Advisory Board (FASAB). This guidance stipulates that NSF should: (i) disclose the value of such PP&E held by others in its financial statements based on information contained in the audited financial statements of these entities (if available); and (ii) report information on costs incurred to acquire the research facilities, equipment, and platforms in the Research and Human Capital Activity costs as required by the SFFAS No. 8, *Supplementary Stewardship Reporting*. Very few entities disclose information on NSF titled property in their audited financial statements. Therefore, NSF has elected to disclose only the number of entities in possession of NSF-owned property. Entities that separately present the book value of NSF titled property in their audited financial statements and all FFRDCs are listed in Note 4 along with the book value of the property held.

I. Advances From Others

Advances From Others consist of amounts obligated and advanced by other federal entities to NSF for grant administration and other services to be furnished under reimbursable agreements. Balances at the end of the year are adjusted by an allocated amount from the fourth quarter grantee expenditure estimate described under Note 1K, Accrued Liabilities–Grants. The amount to be allocated by Trading Partner is based on a percentage of reimbursable grant expenditures to total grant expenditures.

J. Accounts Payable

Accounts Payable consist of liabilities to federal agencies, commercial vendors, contractors, and disbursements in transit. Accounts Payable to federal agencies, commercial vendors, and contractors are expenses for goods and services received but not yet paid by NSF at the end of the fiscal year. At year end, NSF accrues for the amount of estimated unpaid expenditures to commercial vendors for which invoices have not been received, but goods and services have been delivered and rendered. Accounts Payable also consist of disbursements in transit recorded by NSF but not paid by Treasury.

K. Accrued Liabilities–Grants

General Grant Accrual Methodology

NSF applies a grant accrual methodology that nets advances to grantees and the accrued grant liability. The accrued expenditure is first applied to liquidate the balance of Advances to Grantees. Any remaining accrual is then applied as an accrued grant liability.

Regular Grants

The total grant liabilities for the year include an estimate of prior quarter expenditures incurred. The majority of NSF's grantees are reimbursed for incurred costs but, due to the timing of the receipt of expenditure reports, grantees draw down funds prior to the recognition of the reimbursement for incurred costs. The timing difference causes funding to grantees to be recorded as an advance. The grant accrual calculation is based on historical trend analyses prepared by NSF. NSF uses a methodology to track the spending patterns by fiscal year and quarter for each of its fund groups. NSF determined that each appropriation and the year of the appropriation have a noted spending pattern. Based on historical information, NSF applies an average percentage rate to the current year grant related obligations for each individual appropriation within a fund group. The calculation provides NSF with the accrued expenditure.

ARRA Grants

By Presidential and Congressional direction, ARRA funding is meant to be expended as expediently as possible. As a result, NSF applies an accelerated approach to recognizing ARRA grant expenditures. The accrual method for ARRA grants in the Research and Related Activities (R&RA) and Education and Human Resources (EHR) appropriations applies statistical analysis based on the historical change in actual ARRA grant expenditures. For ARRA related grants in the Major Research Equipment and Facilities Construction (MREFC) appropriation, the Large Facilities Office provides estimated expenditures based on the progress of individual construction projects.

L. Accrued Liabilities–Contracts and Payroll

Accrued Liabilities–Contracts and Payroll consist of contract accruals and accrued payroll. The total contracts liabilities for the year are determined based on an estimate of prior quarter expenditures incurred by the three contractors that are funded on an advance basis. Expenditures are estimated for each contractor by computing an average of the previous four quarters of actual expenditures reported. The accrual increases expenditures and decreases advances for the account. If the estimated accrual amount exceeds total advances, a liability is accrued for the excess. NSF's payroll services are provided by the Department of the Interior's National Business Center. Accrued payroll relates to services rendered by NSF employees, for which they are not yet paid. At year end, NSF accrues the amount of wages earned, but not yet paid.

M. Employee Benefits

A liability is recorded for estimated and actual future payments to be made for workers' compensation pursuant to the Federal Employees' Compensation Act (FECA). The liability consists of the net present value of estimated future payments calculated by the U.S. Department of Labor (DOL) and the actual unreimbursed cost paid by DOL for compensation paid to recipients under FECA. The actual costs incurred are reflected as a liability because NSF will reimburse DOL two years after the actual payment of expenses. Future NSF Agency Operations and Award Management (AOAM) appropriations will be used for DOL's estimated reimbursement.

Annual leave is accrued as it is earned, and the accrual is reduced as leave is taken. Each year, the balance in the accrued annual leave account is adjusted to reflect changes. To the extent current and prior-year

appropriations are not available to fund annual leave earned but not taken, funding will be obtained from future AOAM appropriations. Sick leave and other types of non-vested leave are expensed as taken.

N. Net Position

Net position is the residual difference between assets and liabilities and is composed of unexpended appropriations and cumulative results of operations. Unexpended appropriations represent the amount of undelivered orders and unobligated balances of budget authority. Unobligated balances are the amount of appropriations or other authority remaining after deducting the cumulative obligations from the amount available for obligation. The cumulative results of operations represent the net results of NSF's operations since the Foundation's inception.

O. Retirement Plan

In FY 2011, approximately 14 percent of NSF employees participated in the Civil Service Retirement System (CSRS), to which NSF matches contributions equal to 7 percent of pay. The majority of NSF employees are covered by the Federal Employees Retirement System (FERS) and Social Security. A primary feature of FERS is a thrift savings plan to which NSF automatically contributes 1 percent of pay and matches employee contributions up to an additional 4 percent of pay. NSF also contributes the employer's matching share for Social Security for FERS participants.

Although NSF funds a portion of the benefits under FERS and CSRS relating to its employees and withholds the necessary payroll deductions, the Foundation has no liability for future payments to employees under these plans, nor does NSF report CSRS, FERS, Social Security assets, or accumulated plan benefits, on its financial statements. Reporting such amounts is the responsibility of the Office of Personnel Management (OPM) and the Federal Retirement Thrift Investment Board.

SFFAS No. 5, *Accounting for Liabilities of the Federal Government*, requires employing agencies to recognize the cost of pensions and other retirement benefits during their employees' active years of service. OPM actuaries determine pension cost factors by calculating the value of pension benefits expected to be paid in the future, and provide these factors to the agency for current period expense reporting. Information is also provided by OPM regarding the full cost of health and life insurance benefits on the OPM Benefit Administration website: http://www.opm.gov/retire/pubs/bals/2011/11-305.pdf.

P. Contingencies and Possible Future Costs

Contingencies–Claims and Lawsuits: NSF is a party to various legal actions and claims brought against it. In the opinion of NSF management and legal counsel, the ultimate resolution of the actions and claims will not materially affect the financial position or operations of the Foundation. NSF recognizes the contingency in the financial statements when claims are expected to result in a material loss (and the payment amounts can be reasonably estimated), whether from NSF's appropriations or the Judgment Fund, administered by the Department of Justice under Section 1304 of Title 31 of the United States Code.

Claims and lawsuits have also been made and filed against awardees of the Foundation by third parties. NSF is not a party to these actions and believes there is no possibility that NSF will be legally required to satisfy such claims. Judgments or settlements of the claims against awardees that impose financial obligation on them may be claimed as costs under the applicable contract, grant, or cooperative agreement and thus may affect the allocation of program funds in future fiscal years. In the event that the claim becomes probable and amounts can be reasonably estimated, the claim will be recognized.

Contingencies–Unasserted Claims: For claims and lawsuits that have not been made and filed against the Foundation, NSF management and legal counsel determine, in their opinion, whether resolution of the actions and claims it is aware of will materially affect the Foundation's financial position or operations. NSF recognizes a contingency in the financial statements when unasserted claims are probable of assertion and, if asserted, would be probable of an unfavorable outcome and expected to result in a measurable loss, whether from NSF's appropriations or the Judgment Fund. NSF discloses unasserted claims if materiality or measurability of a potential loss cannot be determined or the loss is more likely than not to occur rather than probable.

Termination Claims: NSF engages organizations, including FFRDCs, in cooperative agreements and contracts to manage, operate, and maintain research facilities for the benefit of the scientific community. As part of these agreements and contracts, NSF funds on a pay-as-you-go basis certain employee benefit costs (accrued vacation and other employee related liabilities, severance pay and medical insurance), long term leases, and vessel usage and drilling. In some instances, a decision is made to continue operation of a facility with a different entity performing operation and management duties. Those occurrences do not classify the facility as terminated. Claims submitted by the previous managing entity for expenditures not covered by the indirect cost rate included in the initial award are subject to audit and typically paid with existing program funds.

Agreements with FFRDCs include a clause that commits NSF to seek appropriations for termination expenses, if necessary, in the event an agreement is terminated. NSF considers termination of these cooperative agreements only remotely possible. Should a Facility be terminated, NSF is obligated to pay termination expenses in excess of the limitation of funds set forth in the agreements, including any post-retirement benefit liabilities, only if funds are appropriated for this specific purpose. Nothing in these agreements can be construed as implying that Congress will appropriate funds to meet the terms of any claims. Termination costs that may be payable to an FFRDC operator cannot be estimated until such time as the cooperative agreement is terminated.

Environmental Liabilities: NSF manages the USAP. The Antarctic Conservation Act and its implementing regulations identify the requirements for environmental clean-up in Antarctica. NSF continually monitors the USAP in regards to environmental issues. NSF establishes its environmental liability estimates in accordance with the requirements of the SFFAS No. 5, *Accounting for Liabilities of the Federal Government*, and as amended by SFFAS No. 12, *Recognition of Contingent Liabilities Arising from Litigation*, and the Federal Financial Accounting and Auditing Technical Release No. 2, *Determining Probable and Reasonably Estimable for Environmental Liabilities in the Federal Government*.

While NSF is not legally liable for environmental clean-up costs in the Antarctic, there are occasions when the NSF Office of Polar Programs (OPP) chooses to accept responsibility and commit funds toward clean-up efforts of various sites as resources permit. Those decisions are in no way driven by concerns of probable legal liability for failure to engage in such efforts, but rather, a commitment to environmental stewardship of Antarctic natural resources. Environmental clean-up projects started and completed during the year are reflected in NSF's financial statements as expenses for the current fiscal year. An estimated cost is accrued for approved projects that are anticipated to be performed after the fiscal year end or will take more than one fiscal year to complete.

Q. Use of Estimates

Management has made certain estimates and assumptions when reporting assets, liabilities, revenues, and expenses, and also in the note disclosures. Estimates underlying the accompanying financial statements include accounting for grants, contracts, accounts payable, payroll, and PP&E. Actual results may differ from these estimates, and the difference will be adjusted for and included in the financial statements of the following fiscal year.

Note 2. Fund Balance With Treasury

Fund Balance With Treasury (FBWT) consisted of the following components as of September 30, 2011 and 2010:

(Amounts in Thousands)	2011			
	Appropriated Funds	Donated Funds	Earmarked Funds	Total
Obligated	$ 11,684,724	$ 45,845	$ 266,999	$ 11,997,568
Unobligated Available	13,409	52,242	59,959	125,610
Unobligated Unavailable	102,227	93	970	103,290
Less: Budgetary Non-FBWT	-	(51,380)	-	(51,380)
Total FBWT	$ 11,800,360	$ 46,800	$ 327,928	$ 12,175,088

(Amounts in Thousands)	2010			
	Appropriated Funds	Donated Funds	Earmarked Funds	Total
Obligated	$ 11,974,777	$ 34,174	$ 287,886	$ 12,296,837
Unobligated Available	12,451	45,625	47,026	105,102
Unobligated Unavailable	98,304	4	3,124	101,432
Less: Budgetary Non-FBWT	-	(44,683)	-	(44,683)
Total FBWT	$ 12,085,532	$ 35,120	$ 338,036	$ 12,458,688

The Donations Account includes amounts donated to NSF from all sources. Funds in the Donations Account may be used to further one or more of the general purposes of the Foundation. The donated funds are held as FBWT or as non-FBWT with budgetary resources, which represent cash held outside of Treasury at commercial banks in interest-bearing accounts. These funds are collateralized up to $53.5 million by the bank, through the Federal Reserve Bank of St. Louis, in accordance with Treasury Financial Manual Volume 1, Chapter 6-9000. Unobligated Unavailable balances include recoveries of prior year obligations and other unobligated expired funds that are unavailable for new obligations.

In FY 1999, in accordance with P.L. 105-277, a special fund named H-1B Nonimmigrant Petitioner Fees Account was established in the general fund of the U.S. Treasury. These funds are considered Earmarked Funds and are not included in Appropriated Funds. The funds represent fees collected for each petition for nonimmigrant status. Under the law, NSF was prescribed a percentage of these fees for specific programs.

Note 3. General Property, Plant and Equipment, Net

The components of General Property, Plant and Equipment as of September 30, 2011 and 2010 were:

(Amounts in Thousands)	2011		
	Acquisition Cost	Accumulated Depreciation	Net Book Value
Equipment	$ 135,785	$ (109,646)	$ 26,139
Aircraft and Satellites	138,487	(138,487)	-
Buildings and Structures	297,609	(99,599)	198,010
Leasehold Improvements	10,981	(7,048)	3,933
Construction in Progress	17,491	-	17,491
Internal Use Software	8,096	(7,192)	904
Software in Development	31,649	-	31,649
Total PP&E	$ 640,098	$ (361,972)	$ 278,126

(Amounts in Thousands)	2010		
	Acquisition Cost	Accumulated Depreciation	Net Book Value
Equipment	$ 131,182	$ (104,549)	$ 26,633
Aircraft and Satellites	138,487	(138,487)	-
Buildings and Structures	279,361	(92,201)	187,160
Leasehold Improvements	8,798	(4,904)	3,894
Construction in Progress	33,470	-	33,470
Internal Use Software	7,091	(7,091)	-
Software in Development	25,597	-	25,597
Total PP&E	$ 623,986	$ (347,232)	$ 276,754

Note 4. General Property, Plant and Equipment in the Custody of Other Entities

NSF received a ruling from FASAB on accounting for PP&E owned by NSF but in the custody of and used by others (see Note 1H). The FASAB guidance requires PP&E in the custody of others be excluded from NSF PP&E as defined in the SFFAS No. 6, *Accounting for Property, Plant and Equipment*. NSF is required to disclose the dollar amount of NSF PP&E held by others in the footnotes based on information contained in the most recently issued audited financial statements of the organization holding the assets.

At September 30, 2011, there were 25 colleges or universities, and 10 commercial entities that held property titled to NSF. None of the colleges, universities or commercial entities reported NSF titled property separately.

The amount of PP&E owned by NSF but in the custody of an FFRDC is identified in the table below. In some cases, FFRDCs operate on a fiscal year-end basis other than September 30. If NSF PP&E is not separately stated on the FFRDC's audited financial statements or the FFRDC is not audited, the related amounts are annotated as Not Available (N/A) in the table.

(Amounts in Thousands)

Federally Funded Research and Development Centers		Amount	Fiscal Year Ending
National Astronomy & Ionosphere Center (Cornell) - NAIC	$	N/A	6/30
University Corporation for Atmospheric Research - UCAR		171,213	9/30
Association of Universities for Research in Astronomy, Inc. - AURA		N/A	9/30
National Radio Astronomy Observatory - AUI		N/A	9/30

Note 5. Leases

NSF leases its Headquarter buildings under an operating lease with the GSA. The following is a schedule of future minimum lease payments for the Headquarter buildings and office space in Denver, Colorado. The current leases are active through FY 2021.

(Amounts in Thousands)

Fiscal Year		Operating Lease Amount
2012	$	22,243
2013		20,788
2014		4,876
2015		73
2016		77
After 2016		377
Total Minimum Lease Payments	$	48,434

In addition to the Headquarter buildings, NSF occupies common spaces with other federal agencies overseas through the State Departments International Cooperative Administrative Support Services (ICASS) system. NSF uses ICASS in Beijing, Paris, and Tokyo for residential and non-residential space. ICASS is a voluntary cost distribution system and the agreement to receive ICASS services is through an annual Memorandum of Understanding (MOU) between the NSF and the State Department. Additionally, NSF occupies residential space in Tokyo; the lease to occupy the space is a cancellable agreement between the U.S. Government and the lessor. All NSF leases are cancellable and/or for a period not more than a year.

Note 6. Earmarked Funds

In FY 1999, Title IV of the American Competitiveness and Workforce Improvement Act of 1998 (P.L. 105-277) established an H-1B Nonimmigrant petitioner account in the General Fund of the U.S. Treasury. Funding is established from fees collected for alien, nonimmigrant status petitions. This law requires that a prescribed percentage of the funds in the account be made available to NSF for the following activities:

- Computer Science, Engineering, and Mathematics Scholarship (CSEMS),
- Grants for Mathematics, Engineering, or Science Enrichment Courses, and
- Systemic Reform Activities.

The H-1B Nonimmigrant Petitioner fees are available to the Director of NSF until expended. The funds may be used for: (i) scholarships to low income students or (ii) to carry out a direct or matching grant

program to support private and/or public partnerships in K-12 education. The H-1B Fund is set up as a permanent, indefinite appropriation by NSF. These funds are included in the President's budget. The earmarked funds are accounted for in a separate Treasury Account Fund Symbol (TAFS), and the budgetary resources for the earmarked fund are recorded as Appropriated Earmarked Receipts Transferred In, and reported according to the guidance for earmarked funds in SFFAS No. 27, *Identifying and Reporting Earmarked Funds*.

(Amounts in Thousands)	2011 Earmarked Funds	2010 Earmarked Funds
Balance Sheet as of September 30, 2011 and 2010		
Fund Balance with Treasury	$ 327,928	$ 338,036
Total Assets	327,928	338,036
Other Liabilities	3,845	2,582
Total Liabilities	3,845	2,582
Cumulative Results of Operations	324,083	335,454
Total Liabilities and Net Position	$ 327,928	$ 338,036
Statement of Net Cost for the Years Ended September 30, 2011 and 2010		
Program Costs	$ 116,151	$ 111,639
Net Cost of Operations	$ 116,151	$ 111,639
Statement of Changes in Net Position For the Years Ended September 30, 2011 and 2010		
Net Position Beginning of Period	$ 335,454	$ 355,872
Appropriated Earmarked Receipts Transferred In	104,780	91,221
Net Cost of Operation	(116,151)	(111,639)
Change in Net Position	(11,371)	(20,418)
Net Position End of Period	$ 324,083	$ 335,454

Note 7. Statement of Net Cost

Net costs are presented for the three primary appropriations that fund NSF's programmatic activities (R&RA, EHR, and MREFC) and for donations and earmarked funds that are classified in the Statement of Net Cost and its related footnote as "Costs Not Assigned To Other Programs."

In pursuit of its mission, NSF incurs costs related to its strategic plan for FY 2011–2016, *Empowering the Nation Through Discovery and Innovation.* The strategic goals outlined are: *Transform the Frontiers*, *Innovate for Society*, and *Perform as a Model Organization. Transform the Frontiers* emphasizes the seamless integration of research and education as well as the close coupling of research infrastructure and discovery. *Innovate for Society* points to the tight linkage between NSF programs and societal needs and highlights the role that new knowledge and creativity play in economic prosperity and society's general welfare. *Perform as a Model Organization* emphasizes the importance to NSF of attaining excellence and inclusion in all operational aspects.

Stewardship costs directly reflect the third strategic goal, *Perform as a Model Organization*, and are prorated among the Net Cost Programs. Stewardship costs include expenditures incurred from the AOAM, NSB, and Office of Inspector General (OIG) appropriations. These appropriations support salaries and benefits of persons employed at NSF; general operating expenses, including support of NSF's information systems technology; staff training, audit and OIG activities; and OPM and DOL benefits costs paid on behalf of NSF.

At September 30, 2011, approximately 95 percent of NSF's expenses amounting to $6.9 billion were directly related to the *Transform the Frontiers* and *Innovate for Society* strategic outcome goals. At September 30, 2010, approximately 96 percent of NSF's expenses amounting to $6.7 billion were directly related to the *Transform the Frontiers* and *Innovate for Society* strategic outcome goals. At September 30, 2011 and 2010, costs related to the Stewardship activities totaled $337.2 million and $312.3 million, respectively.

In accordance with OMB *Circular A-136*, costs incurred for services provided by other federal entities are reported in the full costs of NSF programs and are separately identified in this note as "Federal." All earned revenues are offsetting collections provided through reimbursable agreements with other federal entities and are retained by NSF. Earned revenues are recognized when the related program or administrative expenses are incurred and are deducted from the full cost of the programs to arrive at the net cost of operating NSF's programs. NSF applies a cost recovery fee on other federal entities consistent with applicable legislation and GAO decisions. NSF recovers the costs incurred in the management, administration, and oversight of activities authorized and/or funded by interagency agreements where NSF is the performing agency.

Intragovernmental and Public Costs and Earned Revenue by Program

(Amounts in Thousands)		2011 Federal	2011 Public	2011 Total
Research and Related Activities				
Gross Costs	$	214,429	5,789,928	6,004,357
Less: Earned Revenue		(110,458)	-	(110,458)
Net Research and Related Activities		103,971	5,789,928	5,893,899
Education and Human Resources				
Gross Costs	$	5,388	831,367	836,755
Less: Earned Revenue		(8,350)	-	(8,350)
Net Education and Human Resources		(2,962)	831,367	828,405
Major Research Equipment and Facilities Construction				
Gross Costs	$	504	261,201	261,705
Less: Earned Revenue		-	-	-
Net Major Research Equipment and Facilities Construction		504	261,201	261,705
Costs Not Assigned To Other Programs				
Gross Costs	$	877	155,108	155,985
Less: Earned Revenue		-	-	-
Net Costs Not Assigned To Other Programs		877	155,108	155,985
Net Cost of Operations	$	102,390	7,037,604	7,139,994

(Amounts in Thousands)		2010 Federal	2010 Public	2010 Total
Research and Related Activities				
Gross Costs	$	212,562	5,658,983	5,871,545
Less: Earned Revenue		(93,667)	-	(93,667)
Net Research and Related Activities		118,895	5,658,983	5,777,878
Education and Human Resources				
Gross Costs	$	3,719	771,703	775,422
Less: Earned Revenue		(8,859)	-	(8,859)
Net Education and Human Resources		(5,140)	771,703	766,563
Major Research Equipment and Facilities Construction				
Gross Costs	$	6,645	172,195	178,840
Less: Earned Revenue		-	-	-
Net Major Research Equipment and Facilities Construction		6,645	172,195	178,840

Costs Not Assigned To Other Programs				
Gross Costs	$	192	171,633	171,825
Less: Earned Revenue		-	-	-
Net Costs Not Assigned To Other Programs		192	171,633	171,825
Net Cost of Operations	$	120,592	6,774,514	6,895,106

Note 8. American Recovery and Reinvestment Act (ARRA) of 2009

In FY 2009, Congress passed the American Recovery and Reinvestment Act of 2009 under Public Law 111-5. ARRA provided NSF with 2-year funding to the R&RA, EHR, and MREFC appropriations in the amount of $3.0 billion. ARRA also provided NSF with 5-year funding to the OIG in the amount of $2.0 million for the purpose of audits and oversight of ARRA funds. As of September 30, 2011 and 2010, NSF obligated R&RA, EHR, and MREFC ARRA funds in the amount of $3.0 billion. As of September 30, 2011 and 2010, NSF obligated OIG ARRA funds in the amount of $155.2 thousand and $72.3 thousand, respectively. For details on ARRA disbursements and reporting requirements, refer to NSF's Recovery Act website at www.nsf.gov/recovery .

Note 9. Permanent Indefinite Appropriations

NSF maintains permanent indefinite appropriations for R&RA, MREFC, and EHR. The R&RA appropriation is used for polar research and operations support and for reimbursement to other federal agencies for operational and science support and logistical and other related activities for the USAP. In FYs 2011 and 2010, the permanent indefinite appropriations for R&RA were $441.1 million and $452.7 million, respectively, and are reported as current year transfers from the annual R&RA appropriation.

The MREFC appropriation supports the procurement and construction of unique national research platforms and major research equipment. In FYs 2011 and 2010, the permanent indefinite appropriations for MREFC were $117.3 million for both fiscal years.

The EHR appropriation is used to carry out science and engineering education and human resources programs and activities. In FYs 2011 and 2010, the permanent indefinite appropriations for EHR were $86.8 million and $87.0 million, respectively, and are reported as current year transfers from the annual EHR appropriation.

Note 10. Apportionment Categories of Obligations Incurred: Direct vs. Reimbursable Obligations

OMB Circular No. A-11, *Preparation, Submission, and Execution of the Budget*, requires direct and reimbursable obligations be reported as Category A, Category B, or Exempt from Apportionment. In FYs 2011 and 2010, NSF's SF-132, *Apportionment and Reapportionment Schedule*, apportions all obligations incurred under Category B, which is by activity, project, or object. In FYs 2011 and 2010, direct obligations amounted to $7.1 billion and $7.7 billion, respectively, and reimbursable obligations amounted to $134.3 million and $108.5 million, respectively.

Note 11. Explanation of Differences between the Statement of Budgetary Resources and the Budget of the U.S. Government

SFFAS No. 7, *Accounting for Revenue and Other Financing Sources and Concepts for Reconciling Budgetary and Financial Accounting*, calls for explanations of material differences between amounts

reported in the Statement of Budgetary Resources (SBR) and the actual balances published in the *Budget of the United States Government* (President's Budget). However, the President's Budget that will include FY 2011 actual budgetary execution information has not yet been published. The President's Budget is scheduled for publication in the spring of FY 2012 and can be found on the OMB website: http://www.whitehouse.gov/omb.

Balances reported in the FY 2010 SBR and the related President's Budget are shown in a table below for Budgetary Resources, Obligations Incurred, Unobligated Balance–Unavailable, and any related differences. The differences reported are due to differing reporting requirements for expired and unexpired appropriations between the Treasury guidance used to prepare the SBR and the OMB guidance used to prepare the President's Budget. The SBR includes both unexpired and expired appropriations, while the President's Budget discloses only unexpired budgetary resources that are available for new obligations.

(Amounts in Thousands)	2010		
	Budgetary Resources	Obligations Incurred	Unobligated Balance - Unavailable
Combined Statement of Budgetary Resources	$ 8,030,516	$ 7,823,982	$ 101,432
Budget of the U.S. Government	$ 7,931,399	$ 7,821,270	$ 5,027
Difference	$ 99,117	$ 2,712	$ 96,405

Note 12. Undelivered Orders at the End of the Period

In accordance with SFFAS No. 7, Accounting for Revenue and Other Financing Sources, the amount of budgetary resources obligated for undelivered orders for the periods ended September 30, 2011 and 2010, amounted to $11.7 billion and $11.9 billion, respectively.

Note 13. Reconciliation of Net Cost of Operations to Budget

(Amounts in Thousands)	2011	2010
Resources Used To Finance Activities		
Budgetary Resources Obligated		
Obligations Incurred	$ 7,190,826	$ 7,823,982
Less: Spending Authority from Offsetting Collections and Recoveries	(290,172)	(164,274)
Obligations Net of Offsetting Collections and Recoveries	6,900,654	7,659,708
Less: Offsetting Receipts	(53,717)	(55,459)
Net Obligations	6,846,937	7,604,249
Other Resources		
Imputed Financing	12,475	13,066
Other Resources	(304)	291
Net Other Resources Used to Finance Activities	12,171	13,357
Total Resources Used to Finance Activities	**6,859,108**	**7,617,606**
Resources Used to Finance Items Not Part of the Net Cost of Operations		
Change in Budgetary Resources Obligated for Goods, Services and Benefits Ordered but Not Yet Provided	231,824	(763,350)
Resources that Fund Expenses Recognized in Prior Periods	(3,286)	(20)
Budgetary Offsetting Collections and Receipts that Do Not Affect Net Cost of Operations	53,717	55,459
Resources that Finance the Acquisition of Assets	(18,372)	(29,673)
Other Resources or Adjustments to Net Obligated Resources that do not affect Net Cost of Operations	-	-
Total Resources Used to Finance Items Not Part of the Net Cost of Operations	**263,883**	**(737,584)**
Total Resources Used to Finance Net Cost of Operations	**7,122,991**	**6,880,022**
Components of the Net Cost of Operations that will not Require or Generate Resources in the Current Period		
Components Requiring or Generating Resources in Future Periods		
Other	5	591
Total Components of Net Cost of Operations that will Require or Generate Resources in Future Periods	5	591
Components Not Requiring or Generating Resources		
Depreciation and Amortization	16,754	14,920
Other	244	(427)
Total Components of Net Cost of Operations that will not Require or Generate Resources	16,998	14,493
Total Components of Net Cost of Operations that Will Not Require or Generate Resources in the Current Period	**17,003**	**15,084**
Net Cost of Operations	$ **7,139,994**	$ **6,895,106**

Required Supplementary Stewardship Information

Stewardship Investments

For the Years Ended September 30, 2011 and 2010

Stewardship Investments
Research and Human Capital

(Dollar Amounts in Thousands)

Research and Human Capital Activities

	2011	2010	2009	2008	2007
Basic Research	$ 5,401,356	$ 5,249,579	$ 4,413,407	$ 4,449,062	$ 4,195,444
Applied Research	404,596	416,008	498,544	409,516	432,820
Education and Training	1,115,680	1,019,776	867,333	911,369	808,642
Non-Investing Activities	337,170	312,269	332,623	283,245	275,993
Total Research & Human Capital Activities	$ 7,258,802	$ 6,997,632	$ 6,111,907	$ 6,053,192	$ 5,712,899

Inputs, Outputs and/or Outcomes

Research and Human Capital Activities

Investments In:					
Universities	$ 5,192,332	$ 5,103,835	$ 4,340,871	$ 4,189,050	$ 4,016,101
Industry	350,115	286,419	253,114	251,695	208,696
Federal Agencies	195,652	203,635	219,367	256,186	203,759
Small Business	254,215	268,697	209,343	224,793	220,602
Federally Funded R&D Centers	231,234	246,217	232,319	229,259	335,731
Non-Profit Organizations	522,958	408,441	381,882	444,236	421,775
Other	512,296	480,388	475,011	457,973	306,235
	$ 7,258,802	$ 6,997,632	$ 6,111,907	$ 6,053,192	$ 5,712,899
Support To:					
Scientists	$ 540,865	$ 568,140	$ 695,389	$ 512,147	$ 496,431
Postdoctoral Programs	196,071	188,665	252,639	164,519	163,896
Graduate Students	564,021	602,990	933,063	615,621	585,308
	$ 1,300,957	$ 1,359,795	$ 1,881,091	$ 1,292,287	$ 1,245,635
Outputs & Outcomes:					
Number of:					
Award Actions	22,000	24,000	28,000	23,000	23,000
Senior Researchers	53,000	55,000	54,000	43,000	41,000
Other Professionals	14,000	15,000	15,000	12,000	13,000
Postdoctoral Associates	7,000	7,000	8,000	6,000	6,000
Graduate Students	40,000	40,000	54,000	37,000	35,000
Undergraduate Students	27,000	34,000	33,000	24,000	23,000
K-12 Students	86,000	59,000	14,000	13,000	11,000
K-12 Teachers	48,000	85,000	63,000	62,000	61,000

NSF's mission is to support basic scientific research and research fundamental to the engineering process as well as science and engineering education programs. NSF's Stewardship Investments fall principally into the categories of Research and Human Capital. For expenses incurred under the Research category, the majority of NSF funding is devoted to basic research, with a relatively small share going to applied research. This funding supports both the conduct of research and the necessary supporting infrastructure, including state-of-the-art instrumentation, equipment, computing resources, and multi-user facilities such as digital libraries, observatories, and research vessels and aircraft. In Fiscal Year 2011, NSF slightly modified the methodology for developing the Basic Research, Applied Research, Education and Training, and Non-Investing Activity costs. Basic and applied research and education and training expenses are determined by prorating the program costs of NSF's R&RA, EHR, and MREFC appropriations and donations and earmarked funds reported on the Statement of Net Cost. The proration uses the basic and applied research and education and training percentages of total estimated research and development obligations reported in the fiscal year 2012 Budget Request to Congress. The actual numbers are not available until later in the following fiscal year. Non-Investing activities reflect stewardship costs incurred from the AOAM, NSB, and OIG appropriations.

The data provided for scientists, postdoctoral associates, and graduate students are obtained from NSF's proposal system and is information reported by each Principal Investigator. The number of award actions are actual values from NSF's Enterprise Information System (EIS). The remaining outputs and outcomes are estimates of the total FY 2011 amounts obtained annually from the NSF Directorates. These estimates are reported in the annual Budget Request to OMB.

NSF's Human Capital investments focus principally on education and training to advance the goal of creating a diverse, internationally competitive, and globally engaged workforce of scientists, engineers and well-prepared citizens. NSF supports activities to improve formal and informal science, mathematics, engineering and technology education at all levels, as well as public science literacy projects that engage people of all ages in life-long learning. The significant increase in K-12 students was due to a change in methodology. The amounts presented in prior year reports for K-12 students involved in NSF activities were based on estimates provided by staff in the Graduate Teaching Fellowships in K–12 Education (GK–12) program within EHR. This year, the information is based on the collection of prior year actual data.

Required Supplementary Information

Deferred Maintenance

For the Years Ended September 30, 2011 and 2010

Deferred Maintenance

NSF performs condition assessment surveys in accordance with FASAB Standards No. 6 and No. 14 for capitalized PP&E to determine if any maintenance is needed to keep an asset in an acceptable condition or restore an asset to a specific level of performance. NSF considers deferred maintenance to be any maintenance that is not performed on schedule, unless it is determined from the condition of the asset that scheduled maintenance does not have to be performed. Deferred maintenance also includes any other type of maintenance that, if not performed, would render the PP&E non-operational. Circumstances such as non-availability of parts or funding are considered reasons for deferring maintenance.

NSF considered whether any scheduled maintenance necessary to keep fixed assets of the agency in an acceptable condition was deferred at the end of the period for fiscal years 2011 and 2010. Assets deemed to be in excellent, good, or fair condition are considered to be in acceptable condition. Assets in poor condition are in unacceptable condition and the deferred maintenance required to get them to an acceptable condition are reported. NSF determines the condition of an asset in accordance with standards comparable to those used in the private industry. Due to the environment and remote location of Antarctica, all deferred maintenance on assets in poor condition is considered critical in order to maintain operational status.

At September 30, 2011, NSF determined that scheduled maintenance on three items of Antarctic capital equipment in poor condition was not completed and was deferred or delayed for a future period. The largest dollar amount of deferred maintenance for any single item in poor condition approximated $3.3 thousand. The items are light mobile equipment, heavy mobile equipment, and power distribution. They are considered critical to NSF operations and are estimated to require $6.2 thousand in maintenance.

At September 30, 2010, NSF determined that scheduled maintenance on two items of Antarctic capital equipment in poor condition were not completed and were deferred or delayed for a future period. The largest dollar amount of deferred maintenance for any single item in poor condition was approximately $43.0 thousand. The items included light and heavy mobile equipment. All items were considered critical to NSF operations and were estimated to require $50.7 thousand in maintenance.

Required Supplementary Information

Budgetary Resources by Major Budget Accounts

In the following table, NSF budgetary information for the fiscal years ended September 30, 2011 and 2010, as presented in the Statement of Budgetary Resources, is disaggregated for each of NSF's major budget accounts. ARRA funds are shown in a separate schedule.

Department of Defense and Full-Year Continuing Appropriations Act Funds Combining Statement of Budgetary Resources (page 1 of 2)

2011
(Amounts in Thousands)

	Research and Related	Education	Major Research Equipment	OIG, AOAM, and NSB	Special and Donated	Total
SCHEDULE OF BUDGETARY RESOURCES						
Unobligated Balance - Brought Forward, October 1	$ 70,313	24,901	9,172	4,180	95,779	$ 204,345
Recoveries of Prior Year Obligations	130,638	9,449	20	2,984	2,390	145,481
Budget Authority						
Appropriation	5,575,025	862,760	117,290	318,541	157,932	7,031,548
Spending Authority from Offsetting Collections						
Earned						
Collected	108,309	6,841	-	7,345	-	122,495
Change in Receivable from Federal Sources	(5,112)	960	-	489	-	(3,663)
Change in Unfilled Customer Orders						
Advance Received	(19,574)	(1,886)	-	9	-	(21,451)
Without Advance from Federal Sources	41,094	3,655	-	(64)	-	44,685
Subtotal - Budget Authority	5,699,742	872,330	117,290	326,320	157,932	7,173,614
Nonexpenditure Transfers, Net -						
Anticipated and Actual	(53,892)	-	-	-	-	(53,892)
Permanantly Not Available	(37,830)	(13,599)	(235)	(2,972)	-	(54,636)
Total Budgetary Resources	**$ 5,808,971**	**893,081**	**126,247**	**330,512**	**256,101**	**$ 7,414,912**
Status of Budgetary Resources						
Obligations Incurred						
Direct	$ 5,609,058	861,104	125,370	318,046	142,836	$ 7,056,414
Reimbursable	120,925	5,632	-	7,772	-	134,329
Total Obligations Incurred	5,729,983	866,736	125,370	325,818	142,836	7,190,743
Unobligated Balance - Apportioned	6,060	4,417	858	229	112,202	123,766
Unobligated Balance - Not Available	72,928	21,928	19	4,465	1,063	100,403
Total Status Of Budgetary Resources	**$ 5,808,971**	**893,081**	**126,247**	**330,512**	**256,101**	**$ 7,414,912**

Department of Defense and Full-Year Continuing Appropriations Act Funds Combining Statement of Budgetary Resources (page 2 of 2)

2011
(Amounts in Thousands)

	Research and Related	Education	Major Research Equipment	OIG, AOAM, and NSB	Special and Donated	Total
Change in Obligated Balances						
Obligated Balance, Net						
Unpaid Obligations - Brought forward, October 1	$ 7,841,275	1,513,783	232,216	83,641	322,060	$ 9,992,975
Less: Uncollected Customer Payments from Federal Sources Brought Forward, October 1	(90,823)	(7,088)	-	(394)	-	(98,305)
Total Unpaid Obligated Balance, Net	7,750,452	1,506,695	232,216	83,247	322,060	9,894,670
Obligations Incurred	5,729,983	866,736	125,370	325,818	142,836	7,190,743
Less: Gross Outlays	(5,126,069)	(780,610)	(134,308)	(329,128)	(149,662)	(6,519,777)
Less: Recoveries of Prior Year Unpaid Obligations, Actual	(130,638)	(9,449)	(20)	(2,984)	(2,390)	(145,481)
Change in Uncollected Customer Payments from Federal Sources	(35,982)	(4,615)	-	(425)	-	(41,022)
Subtotal	$ 8,187,746	1,578,757	223,258	76,528	312,844	$ 10,379,133
Obligated Balance, Net - End of Period						
Unpaid Obligations	8,314,550	1,590,460	223,258	77,347	312,844	10,518,459
Less: Uncollected Customer Payments from Federal Sources	(126,804)	(11,703)	-	(819)	-	(139,326)
Total Unpaid Obligated Balance, Net - End of Period	$ 8,187,746	1,578,757	223,258	76,528	312,844	$ 10,379,133
Net Outlays						
Gross Outlays	5,126,069	780,610	134,308	329,128	149,662	6,519,777
Less: Offsetting Collections	(88,736)	(4,955)	-	(7,353)	-	(101,044)
Less: Distributed Offsetting Receipts	-	-	-	-	(53,717)	(53,717)
Net Outlays	**$ 5,037,333**	**775,655**	**134,308**	**321,775**	**95,945**	**$ 6,365,016**

ARRA Funds Combining Statement of Budgetary Resources (page 1 of 2)

2011
(Amounts in Thousands)

	Research and Related	Education	Major Research Equipment	OIG	Total
Budgetary Resources					
Unobligated Balance - Brought Forward, October 1	$ 243	19	-	1,927	$ 2,189
Recoveries of Prior Year Obligations	2,614	11	-	-	2,625
Budget Authority					
Appropriation	-	-	-	-	-
Spending Authority from Offsetting Collections					
Earned					
Collected	-	-	-	-	-
Change in Receivable from Federal Sources	-	-	-	-	-
Change in Unfilled Customer Orders					
Advance Received	-	-	-	-	-
Without Advance from Federal Sources	-	-	-	-	-
Subtotal - Budget Authority	-	-	-	-	-
Nonexpenditure Transfers, Net -					
Anticipated and Actual	-	-	-	-	-
Permanantly Not Available	-	-	-	-	-
Total Budgetary Resources	**$ 2,857**	**30**	**-**	**1,927**	**$ 4,814**
Status of Budgetary Resources					
Obligations Incurred					
Direct	$ -	-	-	83	$ 83
Reimbursable	-	-	-	-	-
Total Obligations Incurred	-	-	-	83	83
Unobligated Balance - Apportioned	-	-	-	1,844	1,844
Unobligated Balance - Not Available	2,857	30	-	-	2,887
Total Status Of Budgetary Resources	**$ 2,857**	**30**	**-**	**1,927**	**$ 4,814**

ARRA Funds Combining Statement of Budgetary Resources (page 2 of 2)

2011
(Amounts in Thousands)

	Research and Related	Education	Major Research Equipment	OIG	Total
Change in Obligated Balances					
Obligated Balance, Net					
Unpaid Obligations - Brought forward, October 1	$ 1,944,504	93,005	364,658	-	$ 2,402,167
Less: Uncollected Customer Payments from Federal Sources Brought Forward, October 1	-	-	-	-	-
Total Unpaid Obligated Balance, Net	1,944,504	93,005	364,658	-	2,402,167
Obligations Incurred	-	-	-	83	83
Less: Gross Outlays	(670,169)	(16,891)	(94,048)	(83)	(781,191)
Less: Recoveries of Prior Year Unpaid Obligations, Actual	(2,614)	(11)	-	-	(2,625)
Change in Uncollected Customer Payments from Federal Sources	-	-	-	-	-
Subtotal	$ 1,271,721	76,103	270,610	-	$ 1,618,434
Obligated Balance, Net - End of Period					
Unpaid Obligations	1,271,721	76,103	270,610	-	1,618,434
Less: Uncollected Customer Payments from Federal Sources	-	-	-	-	-
Total Unpaid Obligated Balance, Net - End of Period	$ 1,271,721	76,103	270,610	-	$ 1,618,434
Net Outlays					
Gross Outlays	670,169	16,891	94,048	83	781,191
Less: Offsetting Collections	-	-	-	-	-
Less: Distributed Offsetting Receipts	-	-	-	-	-
Net Outlays	**$ 670,169**	**16,891**	**94,048**	**83**	**$ 781,191**

Consolidated Appropriations Act Funds Combining Statement of Budgetary Resources (page 1 of 2)

2010
(Amounts in Thousands)

	Research and Related	Education	Major Research Equipment	OIG, AOAM, and NSB	Special and Donated	Total
Budgetary Resources						
Unobligated Balance - Brought Forward, October 1	$ 111,092	20,107	57,730	5,106	87,292	$ 281,327
Recoveries of Prior Year Obligations	36,706	12,597	50	3,602	3,127	56,082
Budget Authority						
Appropriation	5,617,920	872,760	117,290	318,540	145,749	7,072,259
Spending Authority from Offsetting Collections:						
Earned						
Collected	83,290	11,196	-	5,699	-	100,185
Change in Receivable from Federal Sources	5,499	(2,799)	-	(307)	-	2,393
Change in Unfilled Customer Orders						
Advance Received	2,080	(4,141)	-	(95)	-	(2,156)
Without Advance from Federal Sources	3,864	1,844	-	(11)	-	5,697
Subtotal - Budget Authority	5,712,653	878,860	117,290	323,826	145,749	7,178,378
Nonexpenditure Transfers, Net -						
Anticipated and Actual	(54,000)	-	-	-	-	(54,000)
Permanantly Not Available	(22,744)	(7,672)	-	(3,266)	-	(33,682)
Total Budgetary Resources	**$ 5,783,707**	**903,892**	**175,070**	**329,268**	**236,168**	**$ 7,428,105**
Status of Budgetary Resources						
Obligations Incurred						
Direct	$ 5,616,384	872,788	165,898	319,849	140,389	$ 7,115,308
Reimbursable	97,010	6,203	-	5,239	-	108,452
Total Obligations Incurred	5,713,394	878,991	165,898	325,088	140,389	7,223,760
Unobligated Balance - Apportioned	967	56	9,169	332	92,651	103,175
Unobligated Balance - Not Available	69,346	24,845	3	3,848	3,128	101,170
Total Status of Budgetary Resources	**$ 5,783,707**	**903,892**	**175,070**	**329,268**	**236,168**	**$ 7,428,105**

Consolidated Appropriations Act Funds Combining Statement of Budgetary Resources (page 2 of 2)

2010
(Amounts in Thousands)

	Research and Related	Education	Major Research Equipment	OIG, AOAM, and NSB	Special and Donated	Total
Change in Obligated Balances						
Obligated Balance, Net						
Unpaid Obligations - Brought forward, October 1	$ 7,102,642	1,407,920	188,101	76,948	352,475	$ 9,128,086
Less: Uncollected Customer Payments from Federal Sources Brought Forward, October 1	(81,461)	(8,043)	-	(711)	-	(90,215)
Total Unpaid Obligated Balance, Net	7,021,181	1,399,877	188,101	76,237	352,475	9,037,871
Obligations Incurred	5,713,391	878,992	165,898	325,089	140,390	7,223,760
Less: Gross Outlays	(4,938,052)	(760,532)	(121,733)	(314,795)	(167,677)	(6,302,789)
Less: Recoveries of Prior Year Unpaid Obligations, Actual	(36,706)	(12,597)	(50)	(3,601)	(3,128)	(56,082)
Change in Uncollected Customer Payments from Federal Sources	(9,362)	955	-	317	-	(8,090)
Subtotal	$ 7,750,452	1,506,695	232,216	83,247	322,060	$ 9,894,670
Obligated Balance, Net - End of Period						
Unpaid Obligations	7,841,275	1,513,783	232,216	83,641	322,060	9,992,975
Less: Uncollected Customer Payments from Federal Sources	(90,823)	(7,088)	-	(394)	-	(98,305)
Total Unpaid Obligated Balance, Net - End of Period	$ 7,750,452	1,506,695	232,216	83,247	322,060	$ 9,894,670
Net Outlays						
Gross Outlays	4,938,052	760,532	121,733	314,795	167,677	6,302,789
Less: Offsetting Collections	(85,371)	(7,055)	-	(5,604)	-	(98,030)
Less: Distributed Offsetting Receipts	-	-	-	-	(55,459)	(55,459)
Net Outlays	**$ 4,852,681**	**753,477**	**121,733**	**309,191**	**112,218**	**$ 6,149,300**

ARRA Funds Combining Statement of Budgetary Resources (page 1 of 2)

2010
(Amounts in Thousands)

	Research and Related	Education	Major Research Equipment	OIG	Total
Budgetary Resources					
Unobligated Balance - Brought Forward, October 1	$ 437,356	15,000	146,000	1,982	$ 600,338
Recoveries of Prior Year Obligations	2,054	19	-	-	2,073
Budget Authority					
Appropriation	-	-	-	-	-
Spending Authority from Offsetting Collections					
Earned					
Collected	-	-	-	-	-
Change in Receivable from Federal Sources	-	-	-	-	-
Change in Unfilled Customer Orders					
Advance Received	-	-	-	-	-
Without Advance from Federal Sources	-	-	-	-	-
Subtotal - Budget Authority	-	-	-	-	-
Nonexpenditure Transfers, Net - Anticipated and Actual	-	-	-	-	-
Permanantly Not Available	-	-	-	-	-
Total Budgetary Resources	**$ 439,410**	**15,019**	**146,000**	**1,982**	**$ 602,411**
Status of Budgetary Resources					
Obligations Incurred					
Direct	$ 439,167	15,000	146,000	55	$ 600,222
Reimbursable	-	-	-	-	-
Total Obligations Incurred	439,167	15,000	146,000	55	600,222
Unobligated Balance - Apportioned	-	-	-	1,927	1,927
Unobligated Balance - Not Available	243	19	-	-	262
Total Status Of Budgetary Resources	**$ 439,410**	**15,019**	**146,000**	**1,982**	**$ 602,411**

ARRA Funds Combining Statement of Budgetary Resources (page 2 of 2)

2010
(Amounts in Thousands)

	Research and Related	Education	Major Research Equipment	OIG	Total
Change in Obligated Balances					
Obligated Balance, Net					
Unpaid Obligations - Brought forward, October 1	$ 2,035,860	84,977	254,000	1	$ 2,374,838
Less: Uncollected Customer Payments from Federal Sources Brought Forward, October 1	-	-	-	-	-
Total Unpaid Obligated Balance, Net	2,035,860	84,977	254,000	1	2,374,838
Obligations Incurred	439,167	15,000	146,000	55	600,222
Less: Gross Outlays	(528,468)	(6,954)	(35,342)	(56)	(570,820)
Less: Recoveries of Prior Year Unpaid Obligations, Actual	(2,055)	(18)	-	-	(2,073)
Change in Uncollected Customer Payments from Federal Sources	-	-	-	-	-
Subtotal	$ 1,944,504	93,005	364,658	-	$ 2,402,167
Obligated Balance, Net - End of Period					
Unpaid Obligations	1,944,504	93,005	364,658	-	2,402,167
Less: Uncollected Customer Payments from Federal Sources	-	-	-	-	-
Total Unpaid Obligated Balance, Net - End of Period	$ 1,944,504	93,005	364,658	-	$ 2,402,167
Net Outlays					
Gross Outlays	528,468	6,954	35,342	56	570,820
Less: Offsetting Collections	-	-	-	-	-
Less: Distributed Offsetting Receipts	-	-	-	-	-
Net Outlays	**$ 528,468**	**6,954**	**35,342**	**56**	**$ 570,820**

Chapter 3

Appendices

Summary of Financial Statement Audit and Management Assurances

Table 1. Summary of Financial Statement Audit

Audit Opinion	***Unqualified***				
Restatement	***No***				
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	***Unqualified***				
	Beginning Balance	New	Resolved	Consolidated	Ending Balance
Total Material Weaknesses	***0***	-	-	-	***0***

Effectiveness of Internal Control over Operations (FMFIA § 2)					
Statement of Assurance	***Unqualified***				
	Beginning Balance	New	Resolved	Consolidated	Ending Balance
Total Material Weaknesses	***0***	-	-	-	***0***

Conformance with Financial Management System Requirements (FMFIA § 4)					
Statement of Assurance	***Systems conform to financial management system requirements***				
	Beginning Balance	New	Resolved	Consolidated	Ending Balance
Total Non-Conformances	***0***	-	-	-	***0***

Compliance with Federal Financial Management Improvement Act (FFMIA)		
	Agency	Auditor
Overall Substantial Compliance	***Yes***	***Yes***
1. System Requirements	***Yes***	
2. Accounting Standards	***Yes***	
3. U.S. Standard General Ledger at Transaction level	***Yes***	

Improper Payments Information Act Reporting

OMB renewed NSF's relief from annual Improper Payments Information Act reporting to a 3-year cycle period starting in FY 2010, due to the agency's low improper payments. For a discussion of NSF's efforts in monitoring improper payments and the Improper Payments Elimination and Recovery Act, see the Management's Discussion and Analysis, page I-24.

National Science Foundation • Office of the Inspector General
4201 Wilson Boulevard, Suite I-1135, Arlington, Virginia 22230

October 17, 2011

MEMORANDUM

To: Dr. Ray M. Bowen
Chair, National Science Board

Dr. Subra Suresh
Director, National Science Foundation

From: Allison Lerner
Inspector General, National Science Foundation

Subject: Management Challenges for NSF in FY 2012

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

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

- Ensuring Proper Stewardship of ARRA funds
- Improving Grant Administration
- Strengthening Contract Administration
- Implementing Improvements in Workforce Management and the Workplace Environment
- Encouraging Ethical Conduct of Research
- Effectively Managing Large Facilities
- Managing Programs and Resources in Times of Budget Austerity

Additionally, we identified two emerging challenges, transitioning to cloud computing and to the trusted internet connection, and planning for the next NSF headquarters building, that warrant close attention and monitoring.

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

CHALLENGE: Ensuring Proper Stewardship of ARRA Funds

Overview: The American Recovery and Reinvestment Act (ARRA) provided $3 billion for the National Science Foundation (NSF) as an investment in research that would produce economic benefits and growth over time. NSF staff worked diligently to obligate over 4000 awards during 2009, and the last of the ARRA funds were obligated by September 2010. NSF awardees have registered a 99.8 percent compliance rate with ARRA reporting requirements.

As of the end of FY 2011, just $1.38 billion of NSF's ARRA funds have been expended, the lowest spending rate (or "burn rate") among federal agencies. On September 15, 2011 OMB issued a memorandum to the heads of federal agencies urging them to spend remaining Recovery funds, and to recapture discretionary grant funds not spent by the end of FY 2013 "to the fullest extent of the law". There are 638 NSF ARRA awards that will not expire until after FY2013.

Challenge for the Agency: The challenge for the agency is: 1) to assure that ARRA funds are not subject to fraud, waste and abuse, 2) to evaluate its award portfolio and identify and reach out to those awardees that are able to accelerate spending within the next two years, and 3) to monitor ARRA awards to assure that grantees continue to fulfill their reporting responsibilities. As ARRA awardees spend down their funds, NSF program managers and administrative staff must be alert to indications of fraud, waste and abuse and intervene when appropriate. In tough economic times such as these, they should also be sensitive to the *appearance* of impropriety or waste, even if rules are not explicitly broken.

In addition, NSF must make a serious effort to press ARRA award recipients to accelerate their spending in support of the U.S. economy, which was one of the primary purposes of the Recovery Act. ARRA funds were intended to provide an immediate stimulus to the economy, and a significant number of NSF's ARRA awards will not expire until after 2013. The agency should take all actions necessary to ensure that those funds are spent as prudently and quickly as possible. Finally, NSF must continue to promote the timely and accurate reporting of financial information by ARRA recipients. A series of OIG reports issued during March 2011 reviewed the reporting practices of seven ARRA recipients and found that smaller awardees lack a clear understanding of the requirements, and thus pose an increased risk of non-compliance. NSF must continue to inform and monitor ARRA awardees about their obligations under the Act.

OIG's Assessment of the Agency's Progress: The agency has worked cooperatively with OIG to identify potential occurrences of fraud, waste and abuse associated with ARRA funds. Regarding the low spending rate of ARRA recipients, NSF states that it is consistent with the expectations that surround academic research and its pattern of spending. The agency continues to actively monitor recipient reporting and the spending of grantees. It has enforced its burn rate condition requiring recipients to expend ARRA funds within one year, and implemented report review logic to catch under or over reporting of jobs created by ARRA.

CHALLENGE: Improving Grant Administration

Overview: In 2010, NSF funded more than 55,000 active awards involving over 2,100 institutions. In light of the fact that most of those awards are made as grants, it is essential that the Foundation's grants management processes be robust enough to ensure the highest level of accountability and stewardship in its external awards portfolio. In particular, those processes should enable the agency to engage in effective oversight throughout the lifecycle of an award.

Challenge for the Agency: Previous OIG audits of NSF's operations have found that the Foundation needs to improve its oversight of awardees' financial accountability, programmatic performance, and compliance with applicable federal and NSF requirements. NSF's Award Monitoring and Business Assistance Program (AMBAP) was designed to provide advanced monitoring activities to ensure that awardee institutions possess adequate policies, processes, and systems to manage their NSF awards.

In FY 2011, NSF performed 26 of the 30 AMBAP planned site visits. NSF has indicated that it was unable to undertake all planned visits due to staffing constraints. Performing the AMBAP site visits is resource intensive as it requires an experienced grant officer to travel to the institution, spend several days on-site, prepare the report, and follow-up on any corrective actions. As continuing budget restrictions are anticipated, it will be an ongoing challenge for NSF to maintain adequate oversight.

Our December 2009 audit of the process for resolving audit recommendations directed at NSF grantees and for following up to ensure that corrective actions are implemented, made several recommendations for improvement. A robust audit resolution process is critical to ensure that institutions receiving funds from NSF take the necessary corrective action to properly manage those funds.

In addition, it is important for NSF to ensure that awardees are providing sufficient oversight of sub-recipients. Our audits continue to find problems in sub recipient monitoring such as inadequately supported and unallowable costs. We have recommended that NSF expand and improve its sub-award monitoring procedures.

OIG's Assessment of the Agency's Progress: In its progress report on the 2011 management challenges, NSF reported that it had taken several actions to strengthen grants management including modifying the AMBAP risk assessment based on analysis of prior findings, focusing attention on institutions that have the least experience in managing federal funds, and conducting outreach to improve compliance.

In response to our audit of the audit resolution process, OIG and NSF formed a working group which developed a new audit resolution process to create more effective stewardship over federal funds awarded by NSF. A joint NSF/OIG work group, the Stewardship Collaborative, continues to work to monitor and improve the audit resolution process and to jointly address outstanding and emerging issues.

CHALLENGE: Strengthening Contract Administration

Overview: For two consecutive years, the monitoring of cost reimbursement contracts has been cited as a significant deficiency during NSF's annual financial statement audit. Cost reimbursement contracts are inherently risky because the government shares the risk that poor performance on the part of the contractor will result in cost overruns. In FY 2011, NSF obligated $447 million for all contracts. Of that amount, $315 million were for cost reimbursement contracts, including $232 million in advance payments issued before work was done.

The FY 2010 financial statement audit report presented seven recommendations for strengthening NSF's contract monitoring practices, cautioning the agency that more attention must be paid to the basic tools of the trade such as incurred cost audits, cost disclosure statements, and cost submissions that are used to check the contractor's compliance with contract terms and federal regulations. Contracting weaknesses have come to light as the agency prepares to award its largest contract, which will provide logistical support to the U.S. Antarctic Program over the course of a decade. Following several delays in the procurement process, the award is expected to be completed by mid-November 2011.

Challenge for the Agency: NSF's challenge is to correct the deficiencies in contract administration that have been identified by NSF's financial statement audit, and to continue to improve the effectiveness of its policies, practices and contracting professionals. The agency is still in the process of obtaining audits of millions of dollars in costs incurred from 2005 – 2010 by the current USAP contractor, a process that was delayed because the USAP contractor did not have an approved cost disclosure statement. There is no assurance that the agency does not overpay for these services without incurred cost audits and approved cost disclosure statements. As a matter of policy, NSF should obtain disclosure statements and incurred cost audits of its largest contracts on a regular basis and promptly resolve any questioned costs that arise.

Corrective actions aimed at strengthening the weaknesses cited by the financial auditors should be implemented as soon as possible. Much can be accomplished without additional resources, but NSF has requested 11 additional staff in its past two budget requests to form an acquisition support team for contracts. In light of the current budget environment, NSF should consider other alternatives besides adding staff in order to address this challenge.

OIG's Assessment of the Agency's Progress: NSF has made progress toward improving its administration of contracts. The agency now requires its contract specialists to ensure that vendors have disclosure statements prior to making awards. In addition, over the past year NSF successfully resolved questioned costs related to the USAP contractor and recovered $10.8 million. It has also fully funded DCAA's costs to complete the 2005 thru 2010 incurred cost audits associated with the contract. However, the audits are still in progress, and it is uncertain as to when they will be concluded.

CHALLENGE: Implementing Improvements in Workforce Management and the Workplace Environment

Overview: World-class executive leadership and effective human capital management are essential to NSF's success as a high-performing organization. Thus, the agency's executives must demonstrate outstanding administrative and leadership skills as well as possess exceptional scientific knowledge and expertise for the agency to achieve its fullest potential. To strengthen NSF's ties with the research community and provide the agency with talent, resources, and cutting-edge research and scientific expertise, NSF relies on a variety of non-permanent staff. In 2010, approximately 26 percent of all NSF employees were in some type of non-permanent status, and 20 of the agency's 75 executive level staff came to NSF from academic and non-profit institutions pursuant to the Intergovernmental Personnel Act (IPA). IPAs generally have not worked in the federal government and therefore, are often not familiar with government rules and administrative processes in the federal workplace.

Challenge for the Agency. The Office of Personnel Management, Congress, and the OIG, as well as NSF management and staff, have expressed concerns about workforce management and the workplace environment at NSF. Addressing workforce and workplace challenges requires sustained management attention and commitment from the Director. NSF's response to these concerns generally has been to assemble working groups of NSF staff to assess the issues and recommend corrective action. These groups have given thorough attention to these issues and made more than 100 recommendations for change. However, NSF does not have an effective, structured process for implementing the workforce management changes called for in these recommendations. The workforce management change process also suffers because it lacks a permanent champion with both the time and authority to lead in this area.

The fact that senior leadership positions including the Director for the Office of Information and Resource Management, the Chief Human Capital Officer, and the Director for Human Resource Management were filled for much of 2011 with individuals serving in a temporary or interim status presents an additional challenge to implementation of workforce management improvements.

NSF also faces ongoing challenges in effectively preparing and integrating its rotating executives into the federal government workplace. The temporary nature of NSF's rotator model creates additional challenges to ensure that new executives have the full set of skills (scientific, administrative, and leadership) necessary to lead the agency.

OIG's Assessment of Agency Progress: NSF has taken several steps to address workforce management and workplace environment challenges. For example, NSF now includes IPAs in the performance management system and plans to issue performance appraisals for IPAs in executive level positions in fall 2011. The agency has promulgated a mandatory management training policy for new managers and executives and has developed and actively promotes new leadership and management training programs. NSF also reported that it has addressed 38 recommendations for workforce improvement and that work on an additional 10 recommendations is underway. Despite this progress, critical human resource leadership

positions remain filled with individuals acting in a temporary or interim capacity. Finally, permanent leadership for these critical positions should be a high priority for the agency.

CHALLENGE: Encouraging Ethical Conduct of Research

Overview: In 2007, Congress passed the America COMPETES Act to invest in innovation through research and development, and to improve the competitiveness of the United States. Among other things, the Act mandates new proposal requirements for NSF, such as mentoring plans for all postdoctoral positions, and plans to provide training on the responsible conduct of research to undergraduates, graduate students, and postdoctoral researchers. Information gleaned from site visits and through investigations suggests that many institutions are not taking these requirements seriously, thereby placing NSF funds at risk. Integrity is the keystone of the scientific process and product. Without it, precious research funds are wasted both by unprincipled researchers as well as by those researchers whose time, effort, and funds are wasted when they try to replicate the work of their unprincipled colleagues. NSF is challenged to provide more oversight on institution implementation of these requirements and to provide meaningful guidance regarding Responsible Conduct of Research (RCR) training.

Challenge for the Agency: NSF's primary challenge is to ensure that awardees implement credible RCR programs, thereby creating a top-down culture of academic integrity that extends to all levels of the university. Affirmative steps are necessary to counter the trends of increasing integrity violations. Recent surveys suggest that 75% of high school students and 50% of college students admit to cheating, and 30% of researchers admit to questionable research practices. The science and engineering workforce is an increasing percentage of the overall workforce, but only 10% hold PhD's. 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 ultimately are employed by academia, industry, and government. Its broad effect on the US science, engineering and education workforce means that NSF must act to ensure clear understanding of research tenets for all those receiving the benefits of its funds.

Our investigations are consistent with the survey results mentioned above. OIG has seen a dramatic increase in the substantive allegations of plagiarism and data fabrication, especially as it relates to junior faculty members and graduate students. Over the past 10 years, the number of allegations received by our office has more than tripled, as has the number of findings of research misconduct NSF has made based on OIG investigation reports. Although NSF's response to our research misconduct investigation reports is commendably strong, those actions only address incidents after the fact. Extrapolating the number of allegations OIG has received across the 45,000 proposals NSF receives annually, suggests 1300 proposals could contain plagiarism and 450-900 proposals could contain problematic data. Given that NSF funds research in virtually every non-medical research discipline, it is in a unique position to lead the government response to addressing these disturbing trends at all levels of education.

OIG's Assessment of the Agency's Progress: The agency responded to the America COMPETES Act by instituting a requirement that grantees submit mentoring plans for all NSF-supported postdocs and have an RCR training plan for NSF-funded students. The NSF guidance

was very limited and offered great flexibility to grantee institutions to develop plans tailored to their needs. OIG has seen grantee RCR programs ranging from high quality mentoring programs to those that simply refer students to web-based or computer-based training. In one instance, a large institution was proud to have trained the two students who were strictly required by NSF policy to be trained (this was an institution of more than 50,000 students). Early intervention is critical to ensuring that students understand proper professional practices and the implications of misconduct. Based on what we have seen, NSF should expand its influence in this arena.

Research is also an increasingly global enterprise. Addressing integrity issues and training in domestic efforts is not sufficient to ensure the integrity of NSF funded activities. OIG's review of the Basic Research to Enable Agricultural Development (BREAD) program proposals and awards highlighted a significant failure of the US PIs to collaboratively develop oversight programs with foreign subawardees. The absence of such collaboration resulted in the submission of proposals and the awarding of grants that contained plans applicable to only domestic awards. The most poorly developed aspect of these plans was in the responsible conduct of research training and research misconduct reporting. Based on our report NSF took two actions. The agency modified its subsequent solicitation to include more details about the expectations for oversight plans; and it encouraged the development of comprehensive oversight plans in collaboration with the international subawardees. Unfortunately, our recent review of annual reports demonstrates little significant improvement in the oversight plans, a result that is distressing. In considering how it will effectively address this challenge NSF should ensure that annual reports and future proposals comprehensively address oversight plans.

CHALLENGE: Effectively Managing Large Facilities and Instruments

Overview: Due to their inherent financial and operational risks, managing the design, construction and operation of NSF's large science infrastructure projects has appeared on OIG's list of management challenges for the past decade. When the agency decides to construct a telescope, earthquake simulator, or other scientific tool, it generally enters into a cooperative agreement with an institution to design, build and manage the facility. NSF received $117 million for its Major Research Equipment and Facilities Construction account for FY 2011 and $400 million in Recovery Act funds in FY 2009 for the construction of three major facilities that are currently under development. The agency has made steady progress towards improving its project management capability since 2003, when NSF first appointed a Deputy Director for Large Facilities. However, according to three recent audits conducted by DCAA for the OIG, costs for contingency provisions contained in each of the contracts are unallowable.

Challenge for the Agency: NSF needs to ensure that the process it is using for developing, managing, and accounting for contingency funds is sound. In September 2011, OIG issued an audit report of a proposal to build the National Ecological Observatory Network. It found that the bid included $76 million in unallowable contingency costs. Earlier in 2011, an audit of the proposal to build the Advanced Technology Solar Telescope questioned 21 percent of the cost, or $62 million, that was reserved for contingencies. The two audits questioned those costs on the basis that setting aside contingent funds for events that lack a certain level of specificity is unallowable.

The same issue also arose in connection with a 2010 audit of the proposed budget for the Ocean Observatories Initiative which included $88 million for contingencies. Auditors recommended the removal of the unallowable contingency provisions from the proposed budgets, and advised NSF to implement policies that require the agency *rather* than the awardee to control the contingency funds until a need for them is demonstrated. Without adequate controls on the establishment and utilization of contingencies, the agency cannot be certain that funds are not being used to hide poor project planning, management or other deficiencies in administration.

OIG's Assessment of the Agency's Progress: During the past year, the agency has participated in ongoing discussions with OIG regarding the resolution of audit findings and recommendations related to contingencies. Once agreement is reached, NSF has indicated that it will update the Contingency Policy and Procedures module of its Large Facilities Manual. In addition, the agency states that it has engaged in a number of activities to strengthen its oversight policies related to large facilities, including several business system reviews of large infrastructure projects such as Cornell High Energy Synchrotron Source (CHESS) and Network for Earthquake Engineering Simulation (NEES).

CHALLENGE: Managing Programs and Resources in Times of Budget Austerity

Overview: Taxpayers expect government managers to be prudent custodians of agency funds in both good times and bad, but expectations are even higher when federal deficits are large and budgets are tight. In tough economic times Federal agencies and programs must make every dollar count or risk losing the public's confidence. Responsible managers should re-evaluate their operational activities in light of the current economic conditions and determine where and how money might be saved. While government budgets are developed long in advance, there are numerous discretionary expenditures in every organization that occur on a weekly or monthly basis and present real opportunities for savings.

Recently OIG has performed several reviews to examine expenditures such as these and identify possible cost savings, as well as changes that might be made to the way goods and services are purchased that could lead to efficiencies and reduced opportunities for fraud waste and abuse. For example, NSF spends $500,000 per year to provide light refreshments to peer review panelists, when a per diem payment for food is already included as part of their compensation. The report recommended that NSF reconsider these expenditures and if it decided to continue them, then centralize the purchasing process as a safeguard against excessive charges and potential fraud. In another review, OIG assessed NSF's purchases of wireless devices and services, which in FY 2010 amounted to $660,000. Like the earlier review, the report cited the need for a centralized procurement process which could result in economies of scale when purchasing, and concluded that the agency should establish a policy to guide the purchase, distribution and use of wireless technology.

Challenge for the Agency: There are many opportunities to conserve money within a $7 billion dollar organization like NSF without impinging on the agency's core mission. The agency is therefore challenged to identify opportunities to streamline processes and cut costs where it can in order to send a clear message to its employees and stakeholders that strong, sound management practices are being applied; reasonable ideas to reduce spending are welcome and

will be acted on; and at a time of hardship for so many, the public's continued financial support for science is not taken for granted.

OIG's Assessment of the Agency's Progress: The NSF Director demonstrated support for efforts to curb wasteful spending at a recent all-hands meeting when he asked staff for their ideas to save the agency money. However, NSF should follow up on his statement with a more aggressive outreach initiative to enlist as much participation as possible. The agency responded to the report on refreshment purchases by setting a cost ceiling of $25 per day for each recipient a promise to exercise more oversight over the program, and a commitment to analyze the costs and benefits of centralized purchasing. NSF also agreed to develop a policy regarding wireless devices and services, and to analyze the costs and benefits of a centralized purchasing process before deciding whether or not to adopt the recommendation.

We have also identified two emerging challenges that warrant NSF's close attention—transitioning to cloud computing and to the trusted internet connection and planning for the next NSF headquarters.

Transitioning to Cloud Computing and to the Trusted Internet Connection

Cloud computing enables agencies to achieve efficiencies by utilizing shared computing resources, such as servers, networks, storage, applications, and services. The Federal Cloud Computing Strategy and the Cloud First Policy state that Federal agencies are to consider safe, secure computing options before making any new information technology investments.

In September 2011, NSF reported that it has established pilots to evaluate email and instant messaging operations in a private cloud environment. As NSF considers plans to transition information, applications, or data to the cloud, it needs to ensure that security and internal control considerations are addressed, and that cloud computing contracts provide adequate access to information, and appropriate application maintenance for the protection of data and intellectual property.

Regarding the Trusted Internet Connection, pursuant to OMB direction, agencies are required to reduce and consolidate the number of external access points, including Internet connections, and ensure those connections are routed through an OMB-approved Trusted Internet Connection. NSF has migrated its internet connections to a Trusted Internet Connection provider. NSF retains primary responsibility for information technology security and should continue to coordinate its security requirements with the Trusted Internet Connection provider to ensure it utilizes strong information technology safeguards. It is critical that NSF review and understand the risks and costs of cloud technology as it considers moving data to the cloud. The OIG will be closely following NSF's progress in this endeavor.

Planning for the Next NSF Headquarters

NSF's leases for headquarters facilities in Arlington, Virginia expire in December 2013. It appears that NSF is meeting the planning milestones that are the necessary prerequisites for

Congressional action. In its FY 2012 budget submission, NSF requested that funds for its relocation remain available until expended to allow it flexibility for planning and executing the most cost effective acquisition strategies. The report accompanying the Senate Commerce, Justice, Science FY 2012 appropriations bill directed NSF to find savings from future headquarters planning.

Planning for a new headquarters building during a time of budget austerity presents a challenge for NSF. As the lease expiration approaches, the OIG will pay close attention to NSF's activities in this area.

NATIONAL SCIENCE FOUNDATION
4201 WILSON BOULEVARD
ARLINGTON, VIRGINIA 22230

OFFICE OF THE DIRECTOR

MEMORANDUM

Date: October 28, 2011

To: Allison C. Lerner
Inspector General, NSF

From: Deputy Director and Chief Operating Officer, NSF

Subject: NSF's Progress on the Fiscal Year (FY) 2011 Management Challenges, and Acknowledgement of Receipt of the Inspector General's FY 2012 Management Challenges Memorandum

The attached Progress Report highlights the accomplishments we have achieved on the management challenges during FY 2011, which covered six broad areas: Ensuring Proper Stewardship of ARRA funds; Improving Grant Administration; Strengthening Contract Administration; Becoming a Model Agency for Human Capital Management; Encouraging Ethical Conduct of Research; Effectively Managing Large Facilities; and two Emerging Challenges: Implement the Open Government Directive, and Planning for the Next NSF Headquarters. Some of these management challenges are fundamental issues that the Foundation is dealing with on a continuing, collaborative cross-agency basis.

Thank you for your memorandum of October 17, 2011, regarding potential management challenges for the National Science Foundation in FY 2012, and for noting the likely long-term focus of the challenges, especially in an era of constrained resources. As in past years, your memorandum will be shared and discussed with the Foundation's executive staff and senior officers.

The Foundation remains committed to serving our community effectively, continually improving stewardship across the agency, and safeguarding the federal funds awarded by NSF, while supporting the NSF mission. We look forward to working with your office to achieve these goals.

Cora B. Marrett

Cora B. Marrett

Attachment

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

National Science Foundation (NSF)
Fiscal Year (FY) 2011 Progress Report on OIG Management Challenges

CHALLENGE: Ensuring Proper Stewardship of ARRA Funds

NSF Overview: The Foundation continues implementation and management of its American Recovery and Reinvestment Act (ARRA) portfolio. NSF is an important agency in the Administration's ARRA implementation efforts because advancements in technology resulting from fundamental research are a major driver in the long-term growth and overall strength of the American economy. As of September 30, 2011, $1.38 billion of NSF's ARRA funds have been expended. NSF is unique, among other agencies, in that almost its entire portfolio funds universities. Outlay rates are consistent with expectations given the academic calendar and the anticipated pattern of research spending. NSF's exemplary ARRA recipient reporting program and its rigor in implementing its burn rate condition requiring recipients to expend ARRA funds within a year of award or risk termination, not only make NSF well suited in its role as an ARRA funding agency, but also make it poised to successfully meet the challenges of increased levels of accountability and transparency in government spending.

a. *Monitor ARRA awards: grantee compliance with reporting requirements*	**NSF's Significant Actions Taken in FY 2011** Implemented a robust comprehensive, multi-stage review program for recipient reporting, which matured over the eight reporting quarters. Received both Office of Management and Budget (OMB) and the Recovery Accountability and Transparency Board (RATB) recognition of the Foundation as a leader in the federal community for recipient reporting. Delivered a 99 percent compliance rate over the last seven reporting quarters with several quarters reaching 99.9 percent compliance. Conducted targeted outreach through phone calls and emails to recipients in danger of non-compliance with reporting requirements for multiple quarters. Continued NSF's practice of sending multiple reminder e-mails to recipients, alerting recipients of their non-compliance. Suspended two-time non-compliant grantees until the grantees reported in the subsequent quarter and terminated the awards of three-time non-compliant grantees. Shared recommendations for recipient reporting process improvements to enhance data quality government-wide, including pre-population of Recovery.gov fields and the implementation of agency certification and lock-down of data fields to resolve instances of data exceptions for certain data elements.
	NSF's Anticipated Next Steps Continue targeted outreach approach to non-compliant awardees. Continue to monitor and improve the Foundation's reporting program to ensure that we maintain a high-compliance rate in this area and that the agency maintains excellence in an era of diminishing resources. Continue to work with the RATB, OMB, and others to contribute expertise to government-wide recipient reporting process improvement.
b. *Reporting: jobs created or saved*	**NSF's Significant Actions Taken in FY 2011** Fully implemented report review logic to review all reports for over- and under-reporting of the number of jobs. Collaborative effort of the tiger team which includes both NSF and OIG staff, resulted in additional review to determine whether jobs numbers could be under-reported. Strengthened the tiger team's review of under-reporting of jobs based on an OIG recommendation for a RATB required review of

	agency recipient reporting processes, resulting in a smaller list of potential issues from which NSF determines the actual number of jobs issues. Engaged recipients to review their reported jobs numbers.
	NSF's Anticipated Next Steps Continue comprehensive report review procedures and contact recipients when jobs numbers appear to be either over- or under-reported to validate the job numbers. Continue to seek ideas to improve the quality of NSF's number of jobs review.
c. *Planning and management of large, complex infrastructure projects*	**NSF's Significant Actions Taken in FY 2011** Continued implementation of agency-wide requirements for large facilities projects that receive ARRA funds including application of the Davis Bacon Act and Buy America Act to all three Major Research Equipment and Facilities Construction (MREFC) ARRA-funded projects. Drafted written procedures that the agency and awardees may refer to when carrying out the Davis Bacon Requirements. Helped awardees secure wage determinations from the Department of Labor. Updated internal Business Systems Review (BSR) processes and documentation to ensure that all ARRA-related requirements, such as recipient reporting, are appropriately considered during the review, and completed a BSR on the Alaska Region Research Vessel (ARRV) project. Initiated a BSR of the National Ecological Observatory Network (NEON), including ARRA-funded Airborne Observation Platform (AOP). Continued to work cooperatively with the OIG, sharing drafts (e.g., BSR process documentation related to the ARRV review) to facilitate more effective OIG oversight, which has helped the agency proactively strengthen its BSR process by identifying OIG concerns early, allowing for real time improvements, increasing communication around BSR goals, and facilitating better scheduling and coordination around planned OIG audits and BSRs of the same institution as in the case of NEON. Continued to partner among NSF divisions to refine agency business practices, creating a more systematic approach to monitoring and oversight for ARRA projects**.** Refined agency procedures and business systems to properly segregate MREFC and ARRA appropriations and to ensure that the agency's cooperative support agreements include special terms and conditions specific to ARRA requirements. Worked diligently to communicate the NSF position on the issue of contingency on our large facilities in construction, and to address concerns raised by the OIG. Facilitated this via a BFA led, NSF-wide collaboration, which continues to seek a resolution to this significant concern identified by the OIG. Updated all construction cooperative agreements containing budgeted contingency to ensure the terms and conditions of the cooperative agreements give NSF adequate oversight and monitoring of contingency funds.
	NSF's Anticipated Next Steps Continue to monitor and incorporate lessons learned in BSR documentation, processes and practices. Continue with follow-up and monitoring after the ARRV BSR. Finalize schedule and conduct BSRs planned for FY 2012. Continue to monitor and work with awardees to develop a process that adheres to the ARRA Buy America Requirements.

d. ARRA funds to support the Academic Research Infrastructure Program	**NSF's Significant Actions Taken in FY 2011** Created a single point of contact in the Division of Grants and Agreements (DGA) to ensure consistency for all Academic Research Infrastructure (ARI) awards across Directorates. Acknowledged the additional emphasis placed on stewardship over ARRA investments by incorporating special weighting factors into NSF's Risk Assessment Model and ARRA-specific modules into advanced monitoring protocols; amended award-specific provisions as needed to restrict awardee expenditures until specific requirements are met. Worked cooperatively (ARI program officer, OGC, DGA) to develop a resource document to address streamlined and consistent guidance for subaward approvals, contingency spending, and Davis-Bacon reporting. Initiated management of ARI amendments, subaward approvals, and approvals for new funds through the DGA portfolio facilitator for the particular Division to which the ARI award was assigned.
	NSF's Anticipated Next Steps Continue ARI Program Work Group meetings on an as needed basis. Continue expenditure monitoring for compliance with ARRA terms and conditions. Continue monitoring of expenditure limitations on a case by case basis for the majority of ARI awards that involve subaward approvals and contingency spending. Continue to monitor progress with quarterly narrative reports where the program officer can follow up as needed. Continue to make site visits when a program officer or grants officer determines such a visit would facilitate post-award management; 10 percent of ARI awardees have been visited to date. Continue working with ARI program staff, the CFO's office, OGC, and Budget to allow a *de minimis* waiver to the Buy America ARRA requirements for ARI awardees.

CHALLENGE: Improving Grant Administration

NSF Overview: On September 30, 2011, NSF was managing 44,656 active awards, representing $27.5 billion in obligations, to 3,145 unique awardees. NSF grants management activities follow awards throughout their life cycle – pre- through post-award. Accountability requires clear expectations, as well as a well-trained staff, resources, tools, and assistance for NSF programs and the awardee community. Over the past year, NSF made significant upgrades to the suite of policy, procedures, and award terms and conditions in order to align with major changes in Federal regulations, legislative mandates, and Agency-specific requirements. A variety of mechanisms are being used to communicate these upgrades to NSF staff and the field. A sea change in the NSF-OIG relationship has led to an upgraded audit resolution policy and will be strengthened by on-going dialogue. NSF continues to upgrade and integrate business rules into its corporate IT systems; assist staff and grantees in ensuring compliance; fully support federal accountability and transparency efforts; and enable monitoring and assessment of Agency performance. Significant stakeholder involvement has been elicited in the development of new IT systems, data quality enhancements, and innovative uses of business intelligence tools to further enhance performance. NSF continues to strengthen its risk-based approach to post-award monitoring and business assistance by providing reasonable assurance that institutions (especially those most inexperienced in managing federal resources) have requisite policies, processes, and systems for the effective management of federal funds.

a. Ensure effective oversight of awards	**NSF's Significant Actions Taken in FY 2011** Issued new NSF-OIG operating principles for audit resolution. Established the Stewardship Collaborative to monitor/improve the process and jointly address outstanding and emerging issues. Modified the Award Monitoring and Business Assistance Program (AMBAP) risk assessment based on analysis of prior findings. Focused attention on small, non-traditional institutions with least experience in managing federal funds. Continued planning/pre-acquisition for *iTRAK*, a state-of-the-art, single, fully integrated, financial management/property solution. Implemented policy upgrades, e.g., *Proposal & Award Policies & Procedures Guide* (*PAPPG), Proposal* and *Proposal and Award Manual (PAM*) including: (1) requirements for data management plans and sharing of research projects; (2) cost-share revisions; (3) fully electronic DD-concur; and (4) reversal of decision. Conducted general in-reach to NSF program staff and outreach to Principal Investigators (PI), Sponsored Research Offices, and professional societies to strengthen compliance. Increased use of FAQs, NSF Town Hall meetings, and webinars. Completed upgrade of the suite of NSF Award Terms and Conditions. Developed and beta-tested *Research.gov* "Award Manager," an award management tool providing access to accurate, timely, and reliable administrative, financial, and award data from multiple NSF IT systems. Initiated quarterly, independent validation of PI notifications and eJacket documentation for Final/Annual Project Reports; Cost-share Notifications, and Public Outcomes Reports. Based on guidance from the Attorney General, dated September 27, 2010, that requires federal agencies to ensure that ARRA funds are distributed in a non-discriminatory manner, NSF included language on its ARRA website citing civil rights obligations that were applicable to the distribution of its funds under ARRA, as well as relevant contact information to its Office of Diversity and Inclusion.
	NSF's Anticipated Next Steps Continue to improve NSF-OIG collaborative efforts on strengthening the post-audit process, promoting lasting positive changes in stewardship and communicating with the award community as a single federal agency. Complete revision to Standing Operating Guidance 2001-4, *Policies and Procedures for Audit Report Issuance and Resolution of Audit Findings Contained in Audits of NSF Awardees*, to align with new post-audit process. Continue development of the New Payment Process System, fully implementing the move from pooling to real time, grant-by-grant management of payments in FY 2013. Continue *iTRAK* Planning and Pre-Acquisition Phase, moving forward on requirements development, data clean-up, and stakeholder communications. Finalize development and high-level design of Research Performance Progress Report, the federal standardization of interim progress reports for research and research-related activities. Collaborate with NSF major stakeholders to refine *Award Manager* functionality to strengthen award and program management.

b. *Increase the number of site visits under AMBAP*	**NSF's Significant Actions Taken in FY 2011** Conducted 26 AMBAP Site Visits, an increase of two over the previous year. Continued the practice that any institution identified as managing higher risk awards and not receiving a scheduled AMBAP Site Visit is subject to an AMBAP Desk Review. Revised AMBAP risk methodology to focus on institutions likely to have challenges managing federal funds, shifting emphasis from the amount of funds to significant findings; this strategy provides business assistance showing the most promise of opportunity for institutional improvement.
	NSF's Anticipated Next Steps Analyze alternative strategies that maximize use of available resources to broaden as well as strengthen post award monitoring efforts.
c. *Improve subrecipient oversight and monitoring*	**NSF's Significant Actions Taken in FY 2011** Continued to include subrecipient oversight and monitoring in outreach directed at all phases of the award process. Conducted outreach and other administrative contact within NSF as well as with awardees (recipients) and potential awardees through Site Visits, AMBAP visits, Desk Reviews, and Regional Grants Seminars. Implemented OMB guidance; informed awardees via specific language in award notices of the requirements of the Federal Funding Accountability and Transparency Act (FFATA) award term entitled *Reporting Subawards and Executive Compensation*. Advised all awardees of the requirement to report in the FFATA Subaward Reporting System. Established an email alias to provide assistance with awardee compliance with the new reporting requirements.
	NSF's Anticipated Next Steps Continue to upgrade policy and procedural guidance to NSF staff and the field through recurring re-issuance of its policies and procedures manuals, outreach activities, FAQs, etc.

CHALLENGE: Strengthening Contract Administration

NSF Overview: Contract administration remains a critical function for NSF. As such, the Foundation has taken a comprehensive approach to improving in this area. NSF has taken steps to strengthen contract administration through both policy and human capital initiatives. Specifically, NSF has strengthened guidance in the *Contracting Manual* to address policy gaps related to cost reimbursement contracting and has offered on-site training to address acquisition personnel competency gaps in both requirements definition and contract monitoring.

a. *Long-term: continue strengthening management of contract administration*	**NSF's Significant Actions Taken in FY 2011** Updated and made progress on implementing the Corrective Action Plan for the Significant Deficiency on Contract Monitoring of Cost Reimbursement Contracts. Updated the *Contracting Manual* to require contract specialists to ensure that vendors have disclosure statements in place when required prior to awarding cost reimbursement contracts.

	NSF's Anticipated Next Steps Continue to work with OIG in the implementation and monitoring of Corrective Action Plans. Seek additional opportunities to refine the contracting manual guidance regarding cost reimbursement contracting. Complete review of the draft *Price Negotiation Memorandum Guide*.
b. Administer an effective and successful USAP procurement process	**NSF's Significant Actions Taken in FY 2011** Executed a modification to extend the U.S. Antarctic Program (USAP) contract through March 31, 2012 to ensure continuity of operations during the source selection phase of the procurement.
	NSF's Anticipated Next Steps Actively manage the procurement process.
c. Closeout the existing USAP contract	**NSF's Significant Actions Taken in FY 2011** Worked closely with the Defense Contract Audit Agency (DCAA) to resolve audit-related issues: the RPSC Disclosure statement audit by DCAA is in process, and Raytheon incurred cost audits for FY 2005-2010 are in process. Fully funded DCAA's costs to complete the FY 2005-2010 Incurred Cost Audit of the Raytheon contract.
	NSF's Anticipated Next Steps Continue to work with DCAA and the Defense Contract Management Agency to resolve audit-related issues.
d. Continue efforts to strengthen capacity and capability of the acquisition workforce	**NSF's Significant Actions Taken in FY 2011** Provided a variety of training: annual Contracting Officer Technical Representative (COTR); follow-up brown bag sessions focused on the COTR Handbook and NSF systems, policies, and procedures that impact COTRs; Writing a Statement of Work; and Contractor Performance Assessment Reporting System (CPARS).
	NSF's Anticipated Next Steps Provide on-site Performance Based Acquisition Course to COTRs and Contracting Professionals. Continue to ensure that the acquisition workforce is certified and trained to appropriate levels to assume assigned contract monitoring duties. Based on the request for 11 full-time equivalents in NSF's 2012 budget, establish an Acquisition Support Team whose purpose is to serve as a resource to support program officers in pre-solicitation, post-solicitation, and post-award contract monitoring activities. Embrace Federal Government Acquisition process improvement initiatives.

CHALLENGE: Becoming a Model Agency for Human Capital Management

NSF Overview: Significant efforts have been, and will continue to be undertaken to facilitate the NSF workforce's ability to carry out their activities efficiently and effectively. Over the last 18 months, NSF has included Intergovernmental Personnel Act (IPA) employees in its performance management system; developed numerous training courses aimed at administrative professionals, program officers, supervisors, and executives; hired new staff in the Division of Human Resource Management; and improved its relationship with the Office of Personnel Management. NSF has been responding to the OIG Audit of NSF's Actions to Improve Workforce Management and the Work Environment for Employees, with 38 recommendations completed and 10 underway. The Foundation is developing a plan to respond to the rest of the audit and will submit this plan by the end of calendar year 2011.

a. Continue to enhance leadership and management skills for rotators	**NSF's Significant Actions Taken in FY 2011** Implemented the first set of performance plans for IPAs serving in Senior Executive Service (SES) positions. Promulgated a mandatory training policy, which requires all new executives, managers and supervisors to take 32 hours of training during their first year, 16 of which must be specific to NSF. Implemented a requirement that, after the first year, at least 16 hours of training must be completed every three years for executives and supervisors. Developed and implemented seven NSF Academy courses aimed at enhancing leadership and management skills for all executives, including rotators: *Leadership and Problem Solving Skills; Annual Performance Discussions; Creating and Revising Performance Plans; End of Year Performance Management; Mentoring and Coaching; Mandatory NSF Labor Relations Training for Supervisors and Managers; Performance Training,* and *Making the Transition to Management*; and implemented a course, *NSF Becoming a Model EEO Agency: The Role of Managers and Supervisors,* in which there was 100 percent participation of all NSF managers and supervisors, inclusive of rotators. Implemented nearly all aspects of the New Executive Transition (NExT) program including an expansive Executive Resources Website, the Executive Leadership Retreat, and the Executive Coaching Program. Piloted a Knowledge Transfer Tool, which is in the process of being integrated into Executive departure and orientation processes. Piloted an Executive Leadership Retreat in March. Based on feedback, revisions were incorporated in the retreats held in June and September, 2011. Administered the OPM Leadership 360™ Assessment to Executive Leadership Retreat participants, Coaching Program participants, and on an ad-hoc basis. Completion of the 360 by 38 NSF Executives. Debriefed Myers-Briggs Type Indicator (MBTI) leadership and management styles to Coaching Program, Executive Leadership Retreat, and Leadership & Problem-Solving Skills participants. Initiated the Executive Coaching Pilot in March and received positive feedback; the Pilot included 16 managers: four new rotators, two seasoned rotators or limited term SES, five relatively new permanent staff and five long-term NSF SES. Developed and distributed a Leadership Development Resources Guide (including internal/external/online training, books, and ideas for stretch assignments) that contains hyperlinks to information, registration and/or content for resources related to all 28 OPM Leadership competencies. Developed an online Executive Development Plan (EDP), which enabled Executives to identify courses that meet Federal training requirements and register for additional leadership training. Implemented in SharePoint, which organized training opportunities by competency, and enabled efficient submission, tracking, and review of EDPs. Launched EDP in September and Executives submitted their EDPs by mid-October.

	Initiated a pilot mentorship program in the Office of Inspector General, Office of Audit. Issued the call for the first annual appraisals for IPAs serving in SES-level positions; the appraisals are due to the Division of Human Resource Management by October 28, 2011. Initiated administration of OPM's Federal Competency Assessment Tool (FCAT-M) tool as part of evaluating the effectiveness of the agency's executive corps.
	NSF's Anticipated Next Steps Develop and implement three additional NSF Academy courses aimed at enhancing leadership and management skills: *The Art and Science of Picking the Right People, Federal HR Laws and Practices,* and *Enhancing Your Innovative Potential.* Promote use of the Knowledge Management Tool for incoming Executives and completion of the Knowledge Transfer Tool for outgoing Executives. Strongly encourage all new and current executives, both permanent and rotators, to attend the Executive Leadership Retreat, which includes completion of the OPM Leadership 360 Assessment. Provide for current/new executives and leaders to receive executive coaching. Track the completion of Executive Development Plans, review the Plans for compliance with 5 CFR 412.202, and hold executives accountable for submitting a substantive EDP. Implement the NSF-wide mentoring program, currently being piloted, depending on the availability of human resources to maintain this type of program.
b. Continue progress in succession planning	**NSF's Significant Actions Taken in FY 2011** Completed review, by Directorates and Offices, of their succession plans with the Division of Human Resource Management, developing scenarios for key management positions based on internal bench strength and plans for rotator recruitments. Explored the possibility of creating a formal SES candidate development program and determined that the agency will not have the resources to start such a program for the foreseeable future. Maintained a roster of all staff in executive level positions, including Not-To-Exceed dates for rotating employees, for succession planning purposes. Completed several workforce planning related studies including: Office of the Assistant Director, Mathematical and Physical Sciences; Office of International Science and Engineering; National Science Board Office; and the Division of Information Systems. Included in the studies: identification of future staffing needs, management models, full-time equivalent (FTE) requirements, skills/competency needs and in some cases a transition plan for aligning current resources to the future model.
	NSF's Anticipated Next Steps Review succession plan policies as part of revising the Human Capital Strategic Plan. Address the effectiveness of the current organizational structure and the impact of limited-term appointments as part of an overall review of executive courses. Continue to develop plans to reduce time-to-hire and avoid significant lag times in filling critical management and program positions as part of the Hiring Reform Action Plan.

	Ongoing discussion of a number of additional workforce planning studies, pending availability of resources.

CHALLENGE: Encouraging the Ethical Conduct of Research

NSF Overview: The responsible and ethical conduct of research (RCR) is critical for ensuring excellence, as well as public trust, in science and engineering. Consequently, education in RCR is considered essential in the preparation of future scientists and engineers. In response to the America COMPETES Act of 2009 (ACA), each awardee's Authorized Organizational Representative is required to certify that the institution has a plan to provide appropriate training and relevant oversight in the responsible and ethical conduct of research to undergraduates, graduate students, and postdoctoral researchers who will be supported by NSF to conduct research. NSF's implementation strategy includes dissemination through in-reach and outreach activities to NSF staff, as well as U.S. and international scientific research and education communities; policy guidance; incorporation into program funding opportunities; and development of resources (e.g., curriculum materials, online forums, and best practice white papers) to enhance the quality of such training provided by the grantee community.

a. Strengthen understanding and adherence to standards	**NSF's Significant Actions Taken in FY 2011** Initiated definitive steps to ensure that (as part of the NSF response to the ACA) the science and engineering communities have resources to train students and postdoctoral fellows to make informed, ethical, responsible decisions in research projects and professional practices. Presentation by Head, Policy Office, on NSF's implementation of the ACA's RCR provision at the National Council of University Research Administrators (NCURA) Annual Conference, which was one-of-five sessions webcast throughout the country to ensure broad access to this information to NCURA membership. Continued to include RCR coverage in outreach materials; presented this information at a number of research administration conferences. Included a case study on international research integrity in NSF Program Managers Seminars. Included information in RCR training and awareness of international research integrity issues at the East Asia and Pacific Summer Institutes student orientation. Revised OISE's in-reach and outreach presentations to include RCR and international research integrity.
	NSF's Anticipated Next Steps Continue to emphasize importance of RCR in in-reach and outreach opportunities with NSF staff, as well as U.S. and international scientific research and education communities. Continue development of online resources to include instructional materials, forums, encyclopedia entries, and best practices (see www.nationalethicscenter.org), under a 5-year, $5 million award (NSF-1045412) made in FY 2010 to the University of Illinois at Urbana-Champaign to develop a national online center for professional/research ethics in science, mathematics and engineering.
b. Continue efforts to further the research integrity framework	**NSF's Significant Actions Taken in FY 2011** Issued an internal compendium of policies and practices for "international collaborative oversight" that included the oversight guidance for proposals that entail international engagements, e.g., incorporated additional review criteria addressing: true intellectual collaboration; mutual benefits/benefits realized from the expertise/specialized skills of the international counterpart; and research engagement of U.S. students/early-career researchers. Issued the OISE Partnerships for International Research and Education Solicitation (NSF 11-564), which incorporated specific language on international research integrity and international collaborative oversight; e.g., adherence to common principles for the responsible conduct of research and misconduct (NSF International Research Integrity http://www.nsf.gov/od/oise/intl-research-integrity.jsp; NIH

	Fogarty International Center materials http://bms.brown.edu/fogarty/codes.htm); compliance with regulations for the use of recombinant DNA, microbes, transgenic plants or animals/vertebrate animals; and compliance with regulations relating to the U.S. Agricultural Bioterrorism Act of 2002 (http://www.aphis.usda.gov/programs/ag_selectagent/). Incorporated RCR training in the Second Call for Proposals of the G8 Multilateral Funding Initiative. Participation by OISE in the Ethics Education in Science and Engineering program (NSF 11-514); funded one award (OISE-1135345), "*Modeling Effective Research Ethics Education in Graduate International Collaboration: A Learning Outcomes Approach*". Organized two International Research Integrity seminars with visitors from Brazil and Bolivia and arranged meetings for visitors from Australia and Hong Kong to meet with NSF and OISE staff about RCR in their countries. Provided travel support for U.S. participation in the *First Brazilian Meeting on Research Integrity, Science and Publication Ethics* and facilitated participation of the Inter-American Institute for Global Change Research, an intergovernmental organization funded by NSF and headquartered in Brazil.
	NSF's Anticipated Next Steps Continue to monitor the implementation of RCR requirements under NSF programs to improve clarity of policies and procedures; expand resources available to the field; and strengthen in-reach and outreach efforts.

CHALLENGE: Effectively Managing Large Facilities and Instruments

NSF Overview: The Foundation continues to exercise and strengthen agency-wide management and oversight policies and practices for its large facilities and instruments in planning, construction, and operation. These activities are carried out via the decisional and governing responsibilities of the Office of Director and the National Science Board, respectively, and through the management and oversight responsibilities of the sponsoring Science and Engineering Program Directorates and Offices and the NSF Chief Financial Officer (CFO), Office of Budget, Finance and Award Management (BFA). Within BFA, the CFO relies on the Large Facilities Office (LFO) to develop policy related to large facilities, to advise NSF management on large facility issues, and to coordinate with and advise Programs on large facility management and oversight. Other BFA units, including the Budget Division and Cooperative Support Branch, are engaged in budget development, and in award development and monitoring related to large facilities.

Oversight and management of projects to ensure that they are meeting performance expectations and assessing the performance of awardees	**NSF's Significant Actions Taken in FY 2011** Ensured that projects, including Recovery Act-funded projects were on time, on budget, and meeting performance expectations; for example: (1) participated in construction reviews for the Alaska Region Research Vessel and the Ocean Observatories Initiative; (2) executed a Final Design Review and Construction Readiness Review for the National Ecological Observatory Network (NEON), and a construction review of Advanced Laser Interferometer Gravitational Wave Observatory (LIGO) project; and (3) continued the NSF programs/LFO established practices for regular monitoring of all open MREFC construction projects. Assessed performance of awardees by conducting Business Systems Reviews (BSR) and related post-BSR monitoring activities. Completed BSRs on Cornell High Energy Synchrotron Source (CHESS), Network for Earthquake Engineering Simulation (NEES), and Alaska Research Vessel Sikuliaq. Continued post-BSR monitoring on EarthScope. Continued discussions on funding of contingencies under the cooperative agreement to the Consortium for Ocean Leadership (COL). Continued to work with OIG to explore the contingency issue raised by the OIG. Continued review of NSF's policies and processes regarding contingency allocation and oversight for large facility projects.

	NSF's Anticipated Next Steps Planning by LFO and programs for the Preliminary Design Review for the Large Synoptic Survey Telescope. Continue planning for BSRs for FY 2012, which may include the National Radio Astronomy Observatory (NRAO) - Atacama Large Millimeter Array (ALMA), the National Optical Astronomy Observatory (NOAO) - National Solar Observatory (NSO), National Nanotechnology Infrastructure Network (NNIN), and/or Ocean Observatories Initiative (OOI). Initiate post-BSR monitoring as needed/continue monitoring EarthScope, NEON, and the Alaska Research Vessel Sikuliaq. Update the *Large Facilities Manual* module on Contingency Policy and Procedures. Assist awardees and program staff to assure standards of adequacy are satisfied in the provision of supporting documentation for all award costs, to facilitate examination of whether certain proposal costs are appropriate for classification as contingency type items.

EMERGING CHALLENGE: Implementing the Open Government Directive (OGD)

NSF Overview: In December 2009, OMB issued a memorandum calling for federal agencies to create agency specific open government plans highlighting agency response to administration interests in transparency, participation, and collaboration. The memorandum identified a series of milestones consistent with those goals, and required agencies to identify explicit actions being taken in the area of transparency, participation, and collaboration. NSF has met each of the required milestones and continues to seek opportunities to further open government.

a. Describe NSF activities in the area of Prizes/Challenges and the NSF Open Government Flagship activity	**NSF's Significant Actions Taken in FY 2011** Explored promising prize/challenge candidates, which included: CISE Ignite; CISE/ENG Robotics; BIO Hand-writing recognition; and a CISE/ENG commercialization challenge. Announced the Office of Legislative and Public Affairs (OLPA) graphics visualization challenge (e.g., recognition prize, non-monetary). Worked with the Office of Science and Technology Policy (OSTP) on a potential NSF Flagship involving research on the efficacy of the open government activity, and held a workshop with OSTP to promote this concept.
	NSF's Anticipated Next Steps Continue working with the Directorates/Offices in issuing NSF mission related prizes/challenges. Re-define the NSF OGD Flagship activity; a flagship activity along the lines of research in open government has not resulted in any research proposals in that area. Continue exploring open data access as NSF flagship initiative because of its importance to the scientific community.
b. Reconcile interests of researchers with right of the public to have access to taxpayer funded information	**NSF's Significant Actions Taken in FY 2011** Created a Data Task Force to explore issues of open data access. Required a Data Management Plan be included in proposals submitted to the Foundation. Conducted Data Work Group meetings to explore the various tensions involved in open data access, rights of the research community, interests of the publishing community and international concerns.

	NSF's Anticipated Next Steps Mine Data Management Plans to look for promising solutions that would enable the community to provide innovative ways to make data available. Publish the Data Task Force findings in FY 2012, via the National Science Board. Create a Math and Physical Sciences work group to explore specific data access challenges and how they might best be addressed.
c. *Adequate staffing to maintain NSF's commitment to the Open Government Directive*	**NSF's Significant Actions Taken in FY 2011** Maintained the NSF Open Government Plan and released the NSF Open Government Work Group's promised datasets to the public via data.gov. Identified the Chief Technology Officer (CTO) as the Foundation's Senior Accountable Official (SAO) for open government in 2010; the CTO continued to serve in that capacity. Continued participation in the Federal government-wide Open Government Work Group. Worked with Directorates/Offices to identify NSF Prizes/Challenges consistent with the NSF mission.
	NSF's Anticipated Next Steps Update the NSF Open Government Plan, dated October 2010, to reflect the NSF Strategic Plan FY 2011-2016. Conduct the Foundation's open government self-assessment. Announce the first NSF Directorate/Office Prize/Challenge.

EMERGING CHALLENGE: Planning for the Next NSF Headquarters

NSF Overview: The Foundation's lease will expire in 2013 and efforts are underway to secure a new lease in the current space or at a new facility. As part of this Future NSF (FNSF) initiative, NSF is collaborating with the General Services Administration (GSA) in the following areas: prospectus development, congressional authorization, lease procurement, design, construction, and occupancy. Initial Market Research, existing building evaluations, initial budget development and acquisition strategies and prospectus approval and submission to Congress were achieved during the FY 2009 and FY 2010 cycles. The FY 2012 Budget Request is under consideration by Congress; the Solicitation for Offers is expected to be issued by GSA this calendar year.

Planning for headquarters facilities that meet NSF's future needs	**NSF's Significant Actions Taken in FY 2011** Awarded a five-year competitive procurement for Technical Support Services, which included project management, architecture and engineering services, technology project management, relocation services, communications and budget support. Integrated six full-time contractor staff onto the FNSF project team. Successfully defended and coordinated the approval of the NSF Prospectus and FY 2012 FNSF Budget request through OMB. Successfully coordinated the submission of the NSF Prospectus to GSA Congressional committees. Conducted 16 NSF Program of Requirements validation meetings on all special mission-related space. Briefed status to the National Science Board, NSF Office of the Director, Deputy Assistant Directors/Executive Officers, FNSF Executive Advisory Group, AFGE Union, NSF Administrative Managers Group, and select internal stakeholder offices. Hosted approximately 30 GSA Solicitation for Offers development sessions. Completed final draft of criteria, terms and conditions for

	NSF and GSA legal, procurement, and executive review. Assisted GSA with the issuance of the Expressions of Interest, and then participated in the review and follow up. Completed a draft of the NSF Master Project Schedule and NSF/GSA Occupancy Agreement. Completed NSF Phase I relocation planning space walk-through assessments. Developed detailed Future NSF HQs cost requirements and justification for inclusion in the FY 2013 budget submission to OMB.
	NSF's Anticipated Next Steps Further evaluate cost-reduction opportunities for NSF space program in existing or new building. Future NSF procurement to be released through GSA. Prospectus approval via GSA committees. Participate in evaluating offers received, negotiations, and award of a new lease. Coordinate anticipated technology, NSF operations and process planning. Design and begin NSF pilot projects.

Undisbursed Balances in Expired Grant Accounts

The National Science Foundation (NSF) funds research and education in science and engineering though grants and cooperative agreements to 1,875 colleges and universities and other institutions. NSF grants are funded in one of two ways. The grant may be funded fully at the time of award. This is called a standard grant. Alternatively, the grant may be funded incrementally, one year at a time. This is called a continuing grant increment. In both cases, all costs on the grant must be incurred by the college, university or institution during the term of the grant period. At NSF, grantees typically have one full quarter to report final expenditures after the grant expires. Once final disbursements are submitted, grant close-out procedures begin.

For NSF's research accounts—Research and Related Activities (R&RA) and Education and Human Resources (EHR)—Congress provides NSF two years to obligate these funds and, per Federal appropriations law (31 U.S.C. 1553), the funds remain available to the awardee for five years after the appropriation expires to liquidate (or spend) these obligated funds. After this five-year period, the source appropriation is no longer available to make disbursements to the grantee.

The different phases of an appropriation's life cycle are documented in Section 20.4 (c) of OMB Circular A-11, *Preparation, Submission, and Execution of the Budget*. The active phase of an appropriation represents the period of time in which the appropriation is available to incur new obligations. The expired phase "lasts for five years after the last unexpired year unless the expiration period has been lengthened by legislation." During the expired phase, agencies "may not incur new obligations against expired budget authority, but you may liquidate existing obligations by making disbursements." In the canceled phase, funds are no longer available to the agency for any purpose and are transferred to "miscellaneous receipts" in the U.S. Treasury.

The following information is provided in accordance with Section 537 of the Commerce, Justice, Science, and Related Agencies Appropriations Act, 2010, of the Consolidated Appropriations Act (Pub. Law 111-117). The responses pertain to the agency's two grant-making appropriation accounts: R&RA and EHR. The data reported are based on the following definitions:

- An **expired grant** is a grant award whose period of performance has expired. Once a grant has expired, NSF takes actions to close-out the grant both administratively and financially.

- **Undisbursed balances on expired grants** represent the amounts de-obligated off of expired grant awards after the grantee reports its final expenditures using the Federal Financial Report process and after NSF makes the final disbursements to the college or university.

When a grant is closed out during the active and expired phases of the source appropriation, the undisbursed balances are returned to the NSF and are available for other legitimate financial purposes. When a grant is closed out during the canceled phase of the source appropriation, the undisbursed balances are returned to NSF for deposit as "miscellaneous receipts" in the U.S. Treasury.

The methodology followed to report undisbursed balances on expired grant awards complies with guidance provided by the Controller of the White House Office of Management and Budget (OMB), received on August 25, 2011. However, the methodology used this year is different from that used in our FY 2010 Agency Financial Report. The data reported in FY 2010 reflected undisbursed balances associated with expired R&RA and EHR appropriations, rather than undisbursed balances resulting solely from expired grants. The data reported in the FY 2011 report represents undisbursed balances associated

with expired grants. Undisbursed balances resulting from expired grants are a subset of undisbursed balances associated with expired appropriation accounts.

The change in NSF's approach to responding to the requirements in Section 537 of P.L. 111-117 reflects NSF's new interpretation of the OMB reporting guidance, and is based on additional clarifying information provided by the Government Accountability Office (GAO) as part of its engagement with NSF in August 2011. The GAO's engagement on this matter is on behalf of a request from the Chairman, Subcommittee on Federal Financial Management, Government Information, Federal Services, and International Security; Senate Committee on Homeland Security and Governmental Affairs and the Ranking Member, Permanent Subcommittee on Investigations; Senate Committee on Homeland Security and Governmental Affairs.

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

NSF continually monitors its grant awards throughout their lifecycle following a documented and comprehensive post-award monitoring process. This includes requiring all grant recipients to report financial expenditures on a quarterly basis using the Federal Financial Report (FFR) process. NSF grants are closed based on their period of performance end date. One quarter after the grant period has expired, all unliquidated (or undisbursed) funds are 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 close-out of expired grant awards on a quarterly basis using a well established set of automated and manual activities. Eligibility for close-out for all NSF awards begins one full quarter after the award expiration date. At the start of each quarter the NSF Financial Accounting System (FAS) automatically flags all eligible awards to close when the programmed award close-out process is run. This process is configured so that the default setting within FAS is for all eligible awards to financially close. The FAS close-out process automatically de-obligates any un-liquidated (unspent) award balance, produces an award close-out transaction to flag the award as closed, and sends the financial close-out date to the NSF award management system. This initiates final administrative close-out procedures in the award management system.

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

In rare instances, NSF monitoring processes reveal awards in the second quarter of close-out eligibility that still have large unliquidated balances. NSF award financial managers closely monitor these awards

in cooperation with the Program Division Directors (DD), Administrative Officers (AO), Program Managers, and Grants Officials. The vast majority of these awards are closed after the second quarter of close-out eligibility. A written justification is required for all awards being held open beyond the second quarter of close-out eligibility.

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. Once these balances are de-obligated from the grant, no additional disbursements on the grant can be made. 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. The amount of undisbursed balances from expired grants that were returned to Treasury in each of the three preceding years is provided in the highlighted cells in Tables 1,2, and 3, under the column "Grants Funded by Appropriations that Cancel at Year-end" on the next page.

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 grants that expired during the preceding three fiscal years is provided in Tables 1, 2 and 3 on the next page. This table also provides the total undisbursed balances recovered from each of these expired grants and the amounts that are no longer obligated. This information represents grant numbers and undisbursed balances for grants that were funded with appropriations that are now in the "expired and canceled phase."

Table 1 **Status of Expired Grants (FY 2011)**		
FY 2011 (as of 9/30/11)	Grants Funded by Expired Appropriations	Grants Funded by Appropriations that Cancel at Year-end
Number of grants closed out (expired)	16,626	2,022
Undisbursed balances recovered: Unobligated, but remain available for adjustments to existing obligations	$35,204,328	N/A
Undisbursed balances recovered: Unobligated, canceled and returned to Treasury	N/A	$5,610,546

Table 2 **Status of Expired Grants (FY 2010)**		
FY 2010 (as of 9/30/10)	Grants Funded by Expired Appropriations	Grants Funded by Appropriations that Cancel at Year-end
Number of grants closed out (expired)	16,403	2,129
Undisbursed balances recovered: Unobligated, but remain available for adjustments to existing obligations	$30,908,148	N/A
Undisbursed balances recovered: Unobligated, canceled and returned to Treasury	N/A	$5,411,704

Table 3 **Status of Expired Grants (FY 2009)**		
FY 2009 (as of 9/30/09)	Grants Funded by Expired Appropriations	Grants Funded by Appropriations that Cancel at Year-end
Number of grants closed out (expired)	16,419	2,042
Undisbursed balances recovered: Unobligated, but remain available for adjustments to existing obligations	$33,177,414	N/A
Undisbursed balances recovered: Unobligated, canceled and returned to Treasury	N/A	$8,042,652

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 1,440 NSF invention disclosures reported to the Foundation either directly or through NIH's iEdison database during FY 2011. 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

AFR	Annual Financial Report
AMBAP	Award Monitoring and Business Assistance Program
AOAM	Agency Operations and Award Management
APIC	Accountability and Performance Integration Council
APR	Annual Performance Report
ARI	Academic Research Infrastructure
ARRA	American Recovery and Reinvestment Act of 2009
ARRV	Alaska Region Research Vessel
ATST	Advanced Technology Solar Telescope
BIO	Directorate for Biological Sciences
BSR	Business Systems Review
CAP	Corrective Action Plan
CFI21	Cyberinfrastructure Framework for 21st Century Science and Engineering
CFO	Chief Financial Officer
CFR	Code of Federal Regulations
CHESS	Cornell High Energy Synchrotron Source
CIA	Cost Incurred Audit
CIP	Construction-In-Progress
CISE	Directorate for Computer and Information Science and Engineering
CMIA	Cash Management Improvement Act
COO	Chief Operating Officers
COTS	Commercial Off-the-Shelf
COV	Committee of Visitors
CHESS	Cornell High Energy Synchrotron Source
CSEMS	Computer Science, Engineering, and Mathematics Scholarship Program
DCAA	Defense Contract Audit Agency
DOL	Department of Labor
EHR	Directorate for Education and Human Resources
EEO	Equal Employment Opportunity
EEOC	Equal Employment Opportunity Commission
EIS	Enterprise Information System
ENG	Directorate for Engineering
FAS	Financial Accounting System
FASAB	Federal Accounting Standards Advisory Board
FBWT	Fund Balance with Treasury
FCTR	Federal Cash Transaction Report
FECA	Federal Employees' Compensation Act
FFMIA	Federal Financial Management Improvement Act of 1996
FFR	Federal Financial Report
FFRDC	Federally Funded Research and Development Center
FMFIA	Federal Managers Financial Integrity Act of 1982
FISMA	Federal Information Security Management Act
FMFIA	Federal Financial Management Improvement Act of 1996
FTE	Full Time Equivalent
FY	Fiscal Year
GAAP	Generally Accepted Accounting Principles
GAO	Government Accountability Office
GATB	Government Accountability and Transparency Board
GPRA	Government Performance and Results Act
GSA	Government Services Administration
ICASS	International Cooperative Administrative Support Services
I-Corps	NSF Innovation Corps
IG	Inspector General
IPA	Intergovernmental Personnel Act
IPERA	Improper Payments Elimination and Recovery Act of 2010
IPIA	Improper Payments Information Act of 2002
IT	Information Technology
K-12	Kindergarten to Grade 12
MD&A	Management's Discussion and Analysis
MOU	Memorandum of Understanding
MREFC	Major Research Equipment and Facilities Construction
MRI	Major Research Instrumentation
MSP	Math and Science Partnership
NEES	Network for Earthquake Engineering Simulation
NIH	National Institutes of Health
NSB	National Science Board
NSF	National Science Foundation
OGD	Open Government Directive
OIG	Office of Inspector General
OLPA	Office of Legislative and Public Affairs
OMB	Office of Management and Budget
OOI	Ocean Observatories Initiative
OPM	Office of Personnel Management
OPP	Office of Polar Programs
PL	Public Law
PMC	President's Management Council
PP&E	Property, Plant, and Equipment
RATB	Recovery Accountability and Transparency Board
R&RA	Research and Related Activities
RPSC	Raytheon Polar Services Company

R/V	Research Vessel
SBR	Statement of Budgetary Resources
SEES	Science, Engineering, and Education for Sustainability
SFFAS	Statements of Federal Financial Accounting Standards
SGL	Standard General Ledger
STAR METRICS	Science and Technology for America's Reinvestment: Measuring the Effect of Research on Innovation, Competitiveness, and Science
STEM	Science, Technology, Engineering, and Mathematics
TAFS	Treasury Appropriation Fund Symbol
USAP	U.S. Antarctic Program
USC	United States Code